

**A COMPREHENSIVE MANAGEMENT AND
OPERATIONS AUDIT OF NEW YORK
STATE ELECTRIC & GAS CORPORATION
AND ROCHESTER GAS & ELECTRIC
CORPORATION**

CASE 23-M-0103

FINAL REPORT

Submitted to the:

New York Public Service Commission

Three Empire State Plaza
Albany, NY 12223-1350

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NORTHSTAR CONSULTING GROUP

MANAGEMENT CONSULTANTS

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I. EXECUTIVE SUMMARY

NorthStar Consulting Group, Inc. (NorthStar) was retained by the New York State Public Service Commission (NYSPSC or PSC) to conduct a Comprehensive Management and Operations Audit of New York Electric & Gas Corporation (NYSEG) and Rochester Gas and Electric Corporation (RG&E) as required in Case No. 23-M-0103. The contract was executed on September 28, 2023, with the draft report completed on September 30, 2024, and the final report submitted February 4, 2025. The audit period for this report is 2018 through 2023 unless otherwise noted. This chapter of the report provides an executive summary of NorthStar's findings and recommendations in several broad subject areas that impact utility operations, rate payers and the NYSPSC's regulation of NYSEG and RG&E. Details of this chapter summary of findings and conclusions can be found in the respective chapters that follow.

A. BACKGROUND

What is currently known as Avangrid, Inc., was initially incorporated in 1997 as a New York corporation named Energy East Corporation. In 2008, Iberdrola S.A., or Iberdrola, a corporation (sociedad anónima) organized under the laws of the Kingdom of Spain, acquired Energy East Corporation and changed its name to Iberdrola USA, Inc. An internal reorganization in 2013 resulted in consolidation of principal businesses into two major subsidiaries: Avangrid Networks, Inc., which holds all Avangrid-regulated entities, and Avangrid Renewables, Inc., an unregulated affiliate, which holds renewable and thermal generation businesses.¹ The acquisition of UIL Holdings Corporation, or UIL, was completed in December 2015, and the corporate holding company name was changed from Iberdrola USA, Inc. to Avangrid, Inc. – a group holding company.

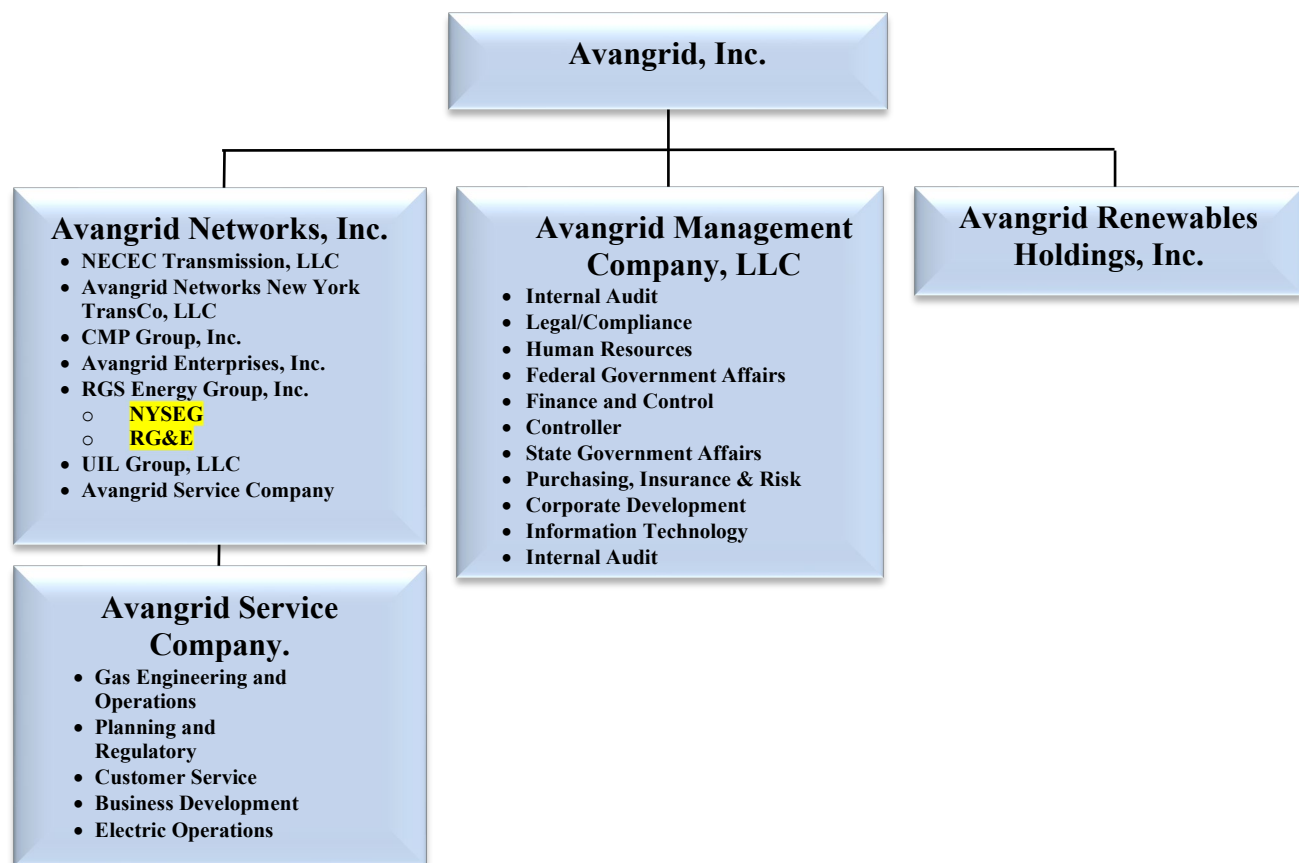
At the time of the audit, Avangrid, Inc. held approximately \$44 billion in assets, with operations in 24 states, and employed approximately 8,000 people. There are now three operational organizations reporting to Avangrid, Inc. as shown in **Exhibit I-1**: Avangrid Networks (the utilities), Avangrid Renewables, and Avangrid Management Company, LLC.

- Avangrid Networks, a Maine corporation, performs electric distribution, transmission and generation, along with natural gas distribution, transportation and sales on behalf of its eight regulated utility subsidiaries. Avangrid Networks' regulated utilities serve approximately 3.3 million customers in New York and New England. Avangrid Networks' electric and gas distribution utilities in New York, Maine, Connecticut and Massachusetts are subject to regulation by the NYSPSC; the Maine Public Utilities Commission, or MPUC; the Connecticut Public Utilities Regulatory Authority, or PURA; and the Massachusetts Department of Public Utilities, or DPU, respectively.

¹ Regulated vs. unregulated businesses defined: "Our direct, wholly-owned subsidiaries include Avangrid Networks, Inc., or Networks, and Avangrid Renewables Holdings, Inc., or ARHI. ARHI in turn holds subsidiaries including Avangrid Renewables, LLC, or Renewables. Networks owns and operates our regulated utility businesses through its subsidiaries, including electric transmission and distribution and natural gas distribution, transportation and sales. [AGR-2023-10-K-final-2-22-24-as-filed.pdf \(q4cdn.com\)](#)

- Avangrid Renewables owns and operates 9.3 gigawatts of electricity capacity, primarily through wind and solar power, with a presence in 22 states across the United States.
- Avangrid Management Company, LLC, (AMC) is a Delaware limited liability company, and a wholly owned, unregulated subsidiary of Avangrid, Inc. AMC provides traditional corporate services such as Finance, Internal Audit, Human Resources, Legal, Information Technology, etc. to all Avangrid companies.

Exhibit I-1
Avangrid Operational Organizations



Source: DR 1 Attachment 1 and DR 26 Attachment 1, Supplement 1 and Fact Verification

Avangrid Networks' electric and gas distribution utilities in New York – NYSEG and RG&E – are consolidated under a holding company, RGS Energy Group, Inc.

- NYSEG was established in 1852 and serves over 900,000 electricity customers and 270,000 natural gas customers in a service territory that spans more than 40 percent of New York. The service area includes portions of central, eastern and western parts of the state. Larger cities within this territory are Binghamton, Elmira, Auburn, Geneva, Ithaca and Lockport. NYSEG operates more than 33,000 miles of electric distribution

lines and 4,400 miles of electric transmission lines. It also operates more than 8,452 miles of natural gas distribution pipelines and 20 miles of gas transmission pipelines.

- RG&E was established in 1848 and serves approximately 385,900 electricity customers and 319,000 natural gas customers within a nine-county region in western New York centered around Rochester. The utility operates more than 8,900 miles of electric distribution lines and more than 1,100 miles of electric transmission lines. It also operates more than 9,144 miles of natural gas distribution pipelines and 103 miles of gas transmission pipelines.

B. KEY AUDIT FINDINGS

During the conduct of this audit, NorthStar discovered a number of governance, organizational and management issues produced by the Avangrid corporate structure, which has evolved over several years and spans the entire audit scope topics.

- Corporate services are provided to regulated utilities, including NYSEG and RG&E, through the Avangrid, Inc. wholly owned subsidiary, Avangrid Management Company, LLC (AMC). Corporate services include information technology, cyber security, communications, internal audit, purchasing, fleet, legal, HR, general administration, etc.
- Technical services are provided to regulated utilities, including NYSEG and RG&E, through an Avangrid Networks subsidiary – Avangrid Services Company (ASC). ASC provides essential services for core utility operations, such as electric and gas system planning, gas and electric operations, customer service, regulatory services, etc.

These issues resulted in the NorthStar team refocusing from a traditional audit of the utilities (NYSEG and RG&E) to, in many cases, an audit of the services provided by Avangrid's unregulated affiliates – AMC and ASC. Overarching management themes and their impacts discussed below were evident throughout the organization in every area reviewed.

1. Avangrid responses to many audit inquiries were contradictory, lacking specificity, and misleading.

- Avangrid's characterization of resource assignment to NYSEG and RG&E and reporting relationships does not hold up under audit scrutiny.
 - Time charged by assigned resources based on greater than 80 percent of their work dedicated to NYSEG or RG&E, showed that time charged rarely exceeded the documented threshold defined by Avangrid.
 - Position roles and responsibilities across the Avangrid corporate family suggest that assignments were somewhat arbitrary.
 - The bulk of time charged to the assigned utility was inconsistent with roles and responsibilities that covered multiple Avangrid utilities.
 - Lack of consistency in roles produces disproportionate cost allocations.

- Avangrid has stated in audit responses that improvements to work management processes have been negligible. However, the same company responders, on the same day, provided conflicting responses regarding improvements.
- NorthStar identified 31 affiliate employees who inappropriately received laptop computers designated for NYSEG and RG&E. Thirty are employees of unregulated affiliates. One is an employee of a regulated affiliate in Maine. Avangrid marked these 31 individuals as NYSEG or RG&E employees.
- Avangrid stated that the NYSEG and RG&E leadership team, as well as Avangrid Network resources were involved in the NYSEG and RG&E strategic plan development. NorthStar found that NYSEG and RG&E do not have a strategic planning process or produce strategic plans, respectively. Furthermore, certain NYSEG and RG&E leadership team members are not utility employees; rather, they are Avangrid employees and/or report to Avangrid supervisors. Very few NYSEG and RG&E leadership team members identified report directly to the NYSEG and RG&E President and Chief Executive Officer (CEO).
- Avangrid has stated that the Climate Leadership and Community Protection Act (CLCPA) and other New York regulatory matters are discussed in a committee called the New York Regulatory, Planning, Operations and Customer Council. In fact, this committee does not exist. Avangrid later clarified that New York regulatory matters are discussed in the New York President’s Leadership Meeting; however, no meeting materials or meeting minutes exist for this forum.
- Avangrid manages to regulatory reported metrics.
 - Avangrid withholds issuance of certain monthly customer bills, thereby avoiding inclusion within the “Adjusted Bill” metric – over 70,000 customer bills per month are excluded from the metric.
 - Avangrid adjusts its metric for “Appointments Kept” without sufficient justification.
 - Avangrid has reported improved NYSEG and RG&E emergency response times over the past five years. However, Avangrid calculates its Emergency Response Time metrics using the trouble ticket issuance time instead of using the customer call time as required in 16 NYCRR Part 255.825.
- Avangrid’s determination of competitive purchasing is inconsistent. In one response, Avangrid stated that three offers in sealed bids are required, then contradicted this response by stating that a competitive bid is one where at least three technically valid offers are received. The company stated in yet another response that “transparency” is measured by having at least two valid offers. Avangrid’s procurement documentation does not define “competitive” procurement. Avangrid does not have a performance metric for competitive procurement but monitors KPIs for Savings, Transparency, Single Source, Time Periods and Supplier Participation.

- Avangrid’s characterization of diverse supplier spending for NYSEG and RG&E is misleading. Avangrid does not certify diversity suppliers, and NorthStar could not independently confirm status of diversity suppliers. Supplier Diversity spend does not necessarily reflect New York suppliers or benefit New York utility ratepayers. Purchasing expenditures, including those for diverse suppliers, are aggregated at the Avangrid Networks level, then allocated to various regulated utility affiliates in different states. Many of the Top 10 diverse suppliers were not headquartered in New York. A selection of these suppliers that NorthStar reviewed were located as far away as Texas, Indiana and Mississippi.

2. Avangrid has a vertical corporate and governance structure where NYSEG and RG&E and their respective Boards of Directors are located under layers of holding companies and their governance boards. This structure prohibits transparency and ignores the unique strategic, operating and regulatory environment in which the New York utilities operate. Core utility functions are performed by two unregulated service companies – AMC and ASC.

- Over the years, Avangrid’s corporate structure has evolved considerably as Iberdrola’s interests in the U.S. energy sector have grown. From a governance perspective, the NYSEG and RG&E’s Boards of Directors are placed under holding companies at the fifth tier of the Iberdrola corporate hierarchy: Iberdrola/Avangrid, Inc./Avangrid Networks/RGS Energy Group, Inc. and then NYSEG and RG&E. The resulting corporate and governance structure does not protect NYSEG and RG&E customer interests.
- Many key governance processes are performed at the Avangrid Networks level; this includes strategic planning, enterprise risk management (ERM), finance and budgeting decisions, as well as the allocation of resources among regulated affiliates. The interests of New York’s ratepayers are not adequately protected if tradeoffs and decisions are made on behalf of NYSEG and RG&E by an unregulated affiliate for Avangrid, Inc.
- Avangrid operates as a “regional utility” in New York, Massachusetts, Maine and Connecticut. Impact of this “regional” view has manifested in many functional areas such as strategic planning, gas operations, electric operations, information technology, procurement and performance management.
- The matrix organizational relationships between the NYSEG and RG&E President and CEO, AMC and ASC do not provide effective management oversight or authority over core utility functions and key support activities.
- The NYSEG and RG&E share of service-company charges is not comparable to other Avangrid operating companies. As a result of the corporate structure, NYSEG and RG&E share goods or services with 13 different affiliates. The complexity of this structure makes it difficult to evaluate whether NYSEG and RG&E receive appropriate allocated costs based on cost-causation principles.

- Avangrid’s organizational governance does not comply with NYPSC Order in Case 12-M-0066, et al – regarding the appointment of New York regulated utility board members who are also executives/officers of unregulated, affiliate companies.
- 3. Service Level Agreements (SLAs) between NYSEG, RG&E, and other Avangrid affiliates do not provide sufficient controls to meet the needs of the two New York utilities, the NYPSC or NYSEG and RG&E customers.**
- SLAs are not the result of arms-length transactions, are not market-based, and lack metrics of performance or quality. There are no consequences as a result of AMC/ASC under/overspending, delivering less than planned work or reallocating costs among functional areas or projects.
 - SLA charges from AMC/ASC to NYSEG and RG&E are determined solely by the service provider and are invoiced without the client utility’s detailed review, adjustment and approval.
 - SLAs contain neither a review of agreed-upon service-level expectations from the previous year, nor expectations for the upcoming year. They also fail to provide a detailed comparison of actual-versus-budgeted services/expenditures and merely invoice an amount at year-end without supporting information.
 - SLAs charge NYSEG and RG&E for ASC/AMC products and services based on allocation cost drivers that are imprecise.
- 4. The budgeting and finance processes at Avangrid are not transparent and lack sufficient support. Avangrid prioritizes corporate earnings, not the needs of NYSEG and RG&E.**
- Avangrid project budgets lack necessary detail to evaluate project-specific financial prudence and consistency.
 - Plant accounting data contain inaccurate unit information.
 - Current approach for managing affiliate service charges lacks transparency, preventing proper oversight of whether the New York utilities are receiving appropriate and justifiable charges.
- 5. Avangrid’s management of gas operations for NYSEG and RG&E fails to adequately address public safety and compliance risks. There are data inconsistencies, delayed pipeline replacements, and issues of non-compliance with regulatory requirements.**
- Avangrid modified its Joint Proposal commitment to replace NYSEG and RG&E Leak Prone Main (LPM) pipeline segments. Avangrid uses the terms “traditional” and “non-traditional” to categorize what type of LPM will be replaced under the terms of the 2023 Joint Proposal. Avangrid has stated that it has publicly committed to replace “traditional” LPM categories. The 2023 Joint Proposal does not use the terms “traditional” and “non-traditional” to categorize LPM, nor does the gas utility industry.

Replacing all LPM pipeline in the NYSEG and RG&E portfolio at current replacement level of 24 miles annually would take more than 60 years.

- Avangrid provided contradictory information regarding total miles of LPM pipeline in NYSEG and RG&E gas systems.
- Data inconsistencies undermine NYSEG and RG&E LPM Replacement programs. Reported LPM mileage shows significant discrepancies, leading to unreliable data on system risks. Furthermore, many LPM segments have not had updated risk scores in years, making prioritization decisions outdated and ineffective.
- Flaws in Avangrid's pipeline system risk evaluation for NYSEG and RG&E undermine the very pipeline replacement plans that were designed to optimize risk mitigation. The result is that the highest risk-ranked pipes are seldom targeted for replacement, thus jeopardizing public safety.
- Avangrid has modified its commitment to replace NYSEG and RG&E LPM since the 2023 Joint Proposal. At the current replacement rate, it will take over 60 years to replace all high-risk pipelines, leaving critical vulnerabilities unaddressed.
- Avangrid's lack of attention to gas pipeline safety does not comply with the Code of Federal Regulations (CFR) Title 49 Part §192.1007. Avangrid does not adhere to federal standards for pipeline data collection and risk assessment, further undermining public safety.

6. Avangrid's "regional" utility operating model results in a lack of management focus on the needs of NYSEG's and RG&E's electric infrastructure.

- Results from forecasting models show significant annual variations. Poor forecasting impairs system planning, revenue projections and rate design.
- The lack of a cohesive asset-management strategy and a technology platform hampers operational efficiency, contributing to system failures and increasing reliability risk to an already aging electric infrastructure.
- NYSEG has not met its SAIFI reliability targets over the past five years and is not likely to do so in the near-term. Avangrid's stewardship of the NYSEG distribution system vegetation-management program is based on an insufficient trim cycle.

7. Avangrid's project management processes are deficient, lacking transparency, adherence to internal procedures, and accountability for capital spending.

- Avangrid has fragmented and subjective project-prioritization processes, often resulting in delayed execution of critical projects.
- Avangrid does not follow its own cost-estimating procedures to properly document cost-estimate development. Avangrid's cost estimates are often summary-level and lack detail necessary to assess estimating accuracy through the project life cycle.

- Avangrid failed to maintain basic records for completed electric and gas capital projects, such as detailed cost estimates, project schedules, project performance reports, etc. There is no reliable way to evaluate project management decisions or track effectiveness of project execution.

8. Avangrid's cybersecurity programs are underdeveloped, characterized by delayed progress in program and controls implementation, fragmented organizational responsibilities, and significant vulnerabilities that leave NYSEG and RG&E at risk of cyberattacks, regulatory penalties and operational failures.

- Avangrid's Cyber Security Master Plan to implement NIST CSF practices has experienced continuous project delays, with costs significantly exceeding initial estimates, leaving critical systems exposed and delaying necessary protections.
- Avangrid's NERC CIP compliance program does not have strong or effective governance, management or controls. NERC CIP compliance responsibilities, subject matter experts, and stakeholders are distributed across multiple departments requiring significant coordination and oversight. The program has internal control deficiencies, including incomplete control documentation, delayed implementation of controls, and repeated audit and potential non-compliance findings, leaving NYSEG and RG&E exposed to regulatory penalties and ongoing security vulnerabilities.
- Avangrid fails to remediate issues highlighted by third-party vulnerability assessments and penetration tests.
- Business continuity and disaster recovery plans are incomplete and inconsistent, which would result in prolonged service disruptions in the event of a cyber or other disaster incident. Fortunately, there is an initiative under way to improve business continuity practices.

9. Performance-management processes at Avangrid hinder operational effectiveness, accountability and alignment with NYSEG and RG&E objectives.

- Avangrid prioritizes corporate-level strategic objectives and metrics, with limited focus on New York-specific objectives, undermining NYSEG's and RG&E's ability to meet regulatory and state policy goals.
- Incentive compensation is paid based on combined performance results across Avangrid entities. This practice allows for payouts when NYSEG and RG&E underperform, resulting in New York customers funding compensation for non-performance. Consequently, this practice obscures local utility results and leads to rate payers bearing the costs for achievements outside the New York service area.
- Lack of transparency in goal-setting and performance evaluation processes at Avangrid, coupled with subjective and discretionary assessments, poses risks of misaligned incentives and diminishes accountability for NYSEG and RG&E service area performance.

C. SUMMARY OF RECOMMENDATIONS

The audit findings and conclusions produced 128 recommendations for improvements in governance, operations, processes and documentation. Recommendations are listed in **Exhibit I-2** below, with additional details provided in each chapter. NorthStar believes that all audit recommendations are beneficial, although in many cases recommendations are based on regulatory/legal mandates, and costs and benefits are not easily quantified at this time. These recommendations provide an opportunity for continued improvement in operations and customer service.

Exhibit I-2
Summary of Recommendations

Rec #	RECOMMENDATION
GOVERNANCE AND MANAGEMENT	
III-1	Revise the Avangrid, NYSEG and RG&E organization and governance to comply with each element of the NYSPSC Order Adopting Staff Report and Approving Reorganization – Case 12-M-0066, et al. Provide a report to DPS demonstrating how each element has been satisfied.
III-2	Develop SLAs that include detailed descriptions of services to be provided to clients such as NYSEG and RG&E.
III-3	Revise and update the CAM to provide a detailed list of functions and charges based on the level of products and services descriptions.
III-4	Develop SLAs that define units of measure and volumes of products and services to be provided over specified time periods. Units of measure and volumes are necessary to reconcile levels of services provided – whether they are directly charged or allocated.
III-5	Provide comparisons of cost competitiveness between SLA products and services versus third-party providers to demonstrate whether Avangrid services charged are greater or less than other commercially available services. Report this information in SLAs and implementation plans. Provide updates to the extent information changes.
III-6	Report SLA cost competitiveness to DPS on an annual basis.
III-7	Develop and include comprehensive SLA key performance metrics that pertain to all products and services provided. Report this information in SLAs and implementation plans. Provide updates to the extent information changes.
III-8	Provide measures of quality for SLA products and services.
III-9	Establish SLA economic performance premiums and penalties for all products and services provided.
III-10	Develop and report SLA true-up for budget amounts and invoice amounts based on actual volume of services, quality and cost at year-end.
III-11	Provide a review of SLA agreed-upon service level expectations from the previous year, plus expectations for the upcoming year.
III-12	Provide a detailed comparison of actual versus budgeted services/expenditures and invoice an amount at year-end with supporting variance information.
III-13	Develop strategic planning processes and strategic plans for NYSEG and RG&E, respectively. The resulting plans must focus on the unique issues impacting each utility, with specific goals, objectives, and performance metrics that represent the strategic, operating, and regulatory environment of each utility. See Chapter XIII- Performance Management.
III-14	Have an independent, third-party firm specializing in ERM maturity assessments conduct a comprehensive study of Avangrid’s ERM program using industry accepted standards.

Rec #	RECOMMENDATION
	Review ERM Maturity Assessment RFP with DPS prior to issuance to obtain feedback. Review vendor selection with DPS. Upon completion of the study, provide a full copy of results and plans to implement recommendations with DPS.
III-15	Develop a comprehensive and fully resourced ERM program for Avangrid Networks, NYSEG, and RG&E incorporating all recommendations from the third-party maturity assessment. Furthermore, the ERM program should be aligned with internal controls such that risks can be monitored on a continuous basis. Internal audits of ERM programs, processes, and risk registers must be performed at least on a biennial basis and documented and maintained for future evaluation.
BUDGET AND FINANCE	
IV-1	Simplify the service company cost-allocation process. Increase the illustration and support documentation so the user can easily understand and verify the allocations to the FERC Form 1. Also, prepare an annual report that summarizes and supports the amounts charged to NYSEG and RG&E. Reporting should be provided to DPS during interim periods between rate cases to support affiliate charges.
IV-2	Improve unitization process. Going forward, Avangrid must ensure that unitized fixed-asset data are accurate and consistent for NYSEG and RG&E. Future plant in-service additions must accurately reflect cost, units, vintage and material.
ELECTRIC OPERATIONS	
V-1	Improve the electric load forecast model(s) used to address issues specific to NYSEG and RG&E, focusing on the following: 1.1 Accuracy 1.2 Weather-normalization methodologies 1.3 Sector segmentation 1.4 Forecasting horizon 1.5 CLCPA considerations 1.6 Econometric equation specification
V-2	Issue RFP for planning services for an asset-management system. Work products should include the following: 2.1 Data needs assessment 2.2 Software needs assessment 2.3 System needs assessment 2.4 Staffing needs assessment 2.5 Change management assessment 2.6 List of proposed systems, business and system integrators
V-3	Implement a trim cycle of five or six years consistent with the last Joint Proposal.
V-4	Edit the link to the Hosting Capacity website to read “Hosting Capacity Portal (PV, BESS, Electrification)”. Update hosting-capacity maps according to the documented schedule.
V-5	Conduct an independent, third-party audit with DPS oversight of storm costs to determine the accuracy of costs recorded to storm events that comply with the current rate plan and to provide more timely recovery of storm expenditures for NYSEG and RG&E. This includes but is not limited to tracing a major storm and a vegetation management work order to financial statements and reviewing the work order procedure to ensure there are no overlapping or duplicate cost collectors in storms, vegetation management, and capital. As a substantial portion of storm expenditures are paid to external parties, it is difficult to evaluate the reasonableness or accuracy of costs without auditing a valid sample of costs.

Rec #	RECOMMENDATION
GAS OPERATIONS	
VI-1	Comply with §192.1007(a): based on the DIMP presentations of 18 risk categories, identify missing data for the entire pipeline system and develop a plan to collect all relevant information as part of normal pipeline activities.
VI-2	Utilize sources of information such as past O&M procedures, abnormal operating events, purchase orders, material lists from old field orders or standards, and information from industry sources (e.g., plastic pipe database committee (PPDC), NTSB accident reports, or PHMSA advisory bulletins) to help identify threats. PHMSA identified potential threats that include, but are not limited to, non-leak events such as near misses, over pressurizations, and material and appurtenance failures.
VI-3	Comply with §192.1007(b): use the information gathered in compliance with §192.1007(a) to identify threats to the integrity of the entire gas distribution systems by segment or lengths of similar characteristics – LPM, traditional LPM, non-traditional LPM and non LPM.
VI-4	Do not eliminate any existing or potential threat to a system segment or lengths of pipeline without an adequate basis and justification for doing so. PHMSA clarified through enforcement guidance that to exclude a threat from consideration (i.e., the absence of a risk category as identified in the DIMP), an operator should document the basis for that conclusion and should not exclude a threat based on the unavailability of information to support the existence of such a threat.
VI-5	Establish a formal schedule for the identification of missing risk data and report progress to the DPS quarterly.
VI-6	Comply with §192.1007(c): subdivide all the NYSEG/RG&E pipeline systems into multiple regions based on similar pipeline characteristics (e.g., contiguous areas within a distribution pipeline consisting of mains, services and other appurtenances; areas with common materials or environmental factors), and for which similar mitigation actions would be effective in reducing risk.
VI-7	Comply with §192.1007(d): determine and implement measures designed to reduce the risks from failure of their gas distribution pipelines. Define measures (actions and activities not merely statistical measures) to improve the leak management program.
VI-8	Comply with §192.1007(d): prioritize, plan and address the risks of greatest concern first in the NYSEG/RG&E pipeline system replacement program.
VI-9	Accelerate the replacement of LPM before the life expectancy expiration of pipeline materials.
VI-10	Reconcile, correct and report solutions on record keeping discrepancies in the inspection data based on Conclusion 15. Add records that are missing or perform inspections and update the work management system to include missing inspections.
VI-11	Comply with 16 NYCRR 255.825 and change the methodology per DPS guidance to calculate emergency response time. Report these changes to DPS and revise/correct the emergency response data reported since 2019.
VI-12	Improve the gas load forecast model(s) to better address CLCPA considerations and to increase the forecasting horizon.
PROJECT MANAGEMENT	
VII-1	Develop industry-accepted Work Breakdown Structures (WBS) for capital programs/projects and use WBSs in initial phases of project justification and conceptual estimating. Continue refinement as a project progresses. 1.1. Develop well-defined work packages that can be used to track and measure project performance based on earned value.

Rec #	RECOMMENDATION
	1.2. Plan work in logical work groupings or packages and subdivide into smaller work groupings. 1.3. Ensure that activities required to perform work in each group are identified and defined, and that dependent relationships are established. 1.4. Formalize use of WBS elements by all project participants in their respective areas of responsibility and as an identification tool for project-management performance measurement. 1.5. Use new WBSs in procurement/contracting activities and specify WBS in contractor framework agreements. 1.6. Use new WBSs for project costing and as a means to assess impact of programmatic changes in funding levels on work content, schedules and contractual support. 1.7. Prepare cost estimates for each WBS element to assist budgeting and project validation. 1.8. Integrate new WBSs with Avangrid's accounting systems, project cost-management systems and schedule-management system (Primavera P6). 1.9. Integrate master work plans and detailed contractor schedules/activities into new WBS to permit integration of schedule information and to facilitate review of status reports and change proposals. 1.10. Refine detailed project estimates initially prepared by WBS element and follow manner in which project work was planned, scheduled, estimated, funded and executed. 1.11. Keep all final, detailed program/project WBSs in project folder for regulatory and audit purposes.
VII-2	Address deficiencies in project estimating by making process improvements. 2.1. Formally assess process used to develop and update capital program/project cost estimates and develop detailed study. Submit detailed study to DPS. 2.2. Formally document in detail development of all electric and gas program/project cost estimates at each level of estimate according to Avangrid's SOP.E-CD.04.04: Cost Management Standard Operating Procedure and at various stages of project life cycle. 2.3. Formally document in detail project cost-estimate reviews at each level of estimate. 2.4. Continuously verify accuracy of estimates versus actual project costs and maintain record of updates to cost-estimating tools. 2.5. Keep all detailed cost estimates in program/project folder for regulatory and audit purposes.
VII-3	Standardize project-prioritization process across all Avangrid departments that provide services to NYSEG and RG&E. Record and retain meeting minutes for all governance committees involved in project-prioritization process.
VII-4	Integrate CLCPA requirements into electric and gas capital project-prioritization process/algorithm. Review requirements and prioritization process/algorithm with DPS.
VII-5	Identify and document all tangible benefits for each capital program/project as part of Project Charters and Project Management Plans. Develop and implement method to track and report project benefits for life of program/project. Provide benefit realization reports to DPS for each completed program/project.
VII-6	Conduct an independent, third-party audit with DPS oversight of Avangrid's record-management practices that includes electric and gas program/project records.

Rec #	RECOMMENDATION
VII-7	Develop project plan and schedule and assign resources to update all Avangrid QMS procedure documentation. Include incentive compensation metrics for VPs of Electric and Gas Operations, respectively, to complete documentation updates. Review plan, schedule and incentive compensation metrics with DPS.
VII-8	Engage an independent monitor to oversee electric and gas program/project planning, management and delivery. Key responsibility of the independent monitor is to review and report to DPS Staff on effectiveness of capital program/project planning, capital budgeting processes and program/project management, plus program/project cost effectiveness, efficiency, appropriate cost assignment, benefit realization and tracking, and other information. Include DPS in RFP development, vendor proposal review and selection, and contracting. Shareholders should be responsible for the cost of the independent monitor.
VII-9	Improve coordination and management of public improvement and interference projects. 9.1 Develop and implement procedure documentation for coordination of electric and gas public improvement and interference projects with municipalities and agencies. Integrate with Project Outreach group's procedures. 9.2. Actively solicit short- and long-term capital plans from key municipal and agency stakeholders. 9.3. Work with DPS to develop annual post-project survey for public improvement and interference projects to be delivered to municipalities and agencies upon project completion. 9.3.1. Incorporate results into continuing process-improvement efforts. 9.3.2. Provide annual report of survey results and process-improvement initiatives/progress to DPS. 9.3.3. Include completed survey metric as part of incentive compensation for VPs delivering services to municipalities and agencies. Review survey completion metric to be included in incentive compensation plan with DPS.
VII-10	Include all project outreach costs in capital program/project cost estimates. Directly charge all actual project outreach costs to capital programs/projects so that booked capital costs reflect actual project costs.
VII-11	Initiate an independent review with DPS oversight to determine if Avangrid is following its own project management policies and procedures on select, completed gas projects over \$500K and select completed electric projects over \$1M up to CY2023 to quantify the cost of unreasonable management.

Rec #	RECOMMENDATION
WORK MANAGEMENT	
VIII-1	Develop an integrated work management system covering all NYSEG and RG&E Gas and Electric operations, maintenance and construction resources based on engineered time standards. This system should cover routine operations, repetitive maintenance activities, planned work and support requirements, while also providing continuous feedback on workforce effectiveness. The system should be in an easy-to-use format expressed in man-hours, along with the combined employee and contractor capacity available, supported by real-time reporting of capacity utilization. The system should include the following specific elements: 1.1. Documentation of work level versus resource histogram development and work plan process 1.2. Enhanced methods to calculate workforce capacity and utilization 1.3. Expanded workforce coverage in reports 1.4. Documentation of processes for establishing workforce levels 1.5. Documentation of criteria for adding contractor capacity 1.6. Real-time variance reporting for O&M and project costs 1.7. Tracking performance targets versus actuals.
VIII-2	Develop management information reporting and organizational reporting relationships to support integrated work management system.
VIII-3	Develop formal reports on trends covering NYSEG and RG&E workload levels, workforce productivity and utilization. Analysis of these trends should identify high-performing functional areas, along with areas needing improvement. This should serve as a foundation for developing strategies to improve workforce performance.
VIII-4	Integrate reported information covering NYSEG and RG&E workload levels, workforce productivity and utilization with SLA recommendations contained in Chapter III – Governance.
VIII-5	Establish formal processes to use work management data as part of annual business planning for NYSEG and RG&E operations and maintenance.
VIII-6	Refine formal work management practices for NYSEG and RG&E Gas and Electric engineering and design functions. Work management systems should include appropriate system tools to support various individual and distinct engineering functional processes and integrate with SLA recommendations contained in Chapter III – Governance. Elements that should be formalized include the following: 6.1. Scheduling 6.2. Prioritization and planning 6.3. Resource allocation and leveling 6.4. Performance measurement 6.5. Budget planning and control 6.6. Vendor tracking 6.7. Document/drawing control 6.8. Records management 6.9. Procurement management 6.10. Time reporting.
VIII-7	Develop and report on overtime targets and performance metrics for NYSEG and RG&E Gas and Electric operations and maintenance organizations. These metrics should be based on economic analyses and verified industry norms.
VIII-8	Annually review the design of monitoring and controlling reports to improve their usefulness.

Rec #	RECOMMENDATION
CUSTOMER OPERATIONS	
IX-1	Perform in-depth analysis to cross reference NYCRR Part 11 and 13 regulations with built-in system controls and manual processes required for compliance with each customer service rule. Exception reports should be created to ensure controls are sufficient.
IX-2	Implement the following as related to compliance assessment findings for 16 NYCRR Part 11 and 13: 2.1. Create metric to monitor Timing of Service non-compliance instances. 2.2. Include actual payment due date on customer bills. 2.3. Provide training and updated materials related to security-deposit requirements and reasonable proof of identify. 2.4. Allow for negotiation of Deferred Payment Agreements (DPAs) to ensure fair and equitable consideration of the customer's financial circumstances. 2.5. Mail the Annual Notification of Rights to every customer
IX-3	Implement version control for process and procedure/training documents, including but not limited to, description of content changed, date content changed, required update frequency, content author, reviewer and approver.
IX-4	Eliminate bi-monthly meter readings and complete universal AMI implementation. Until then, offer to move customers complaining of bill estimates to a levelized payment plan.
IX-5	Develop quarterly report of shared-meter investigations, including status and pending issues for upper management. Include milestones of investigations.
IX-6	Develop database of shared-meter investigations including customer information, date of complaint, date of investigation, resulting actions and dates, and record locator.
IX-7	Maintain shared-meter investigation records for a minimum of five years.
IX-8	Include additional information on letters sent to customers about rate changes. 8.1. Current rate schedule – NYSEG only 8.2. Requirements of current rate schedule – NYSEG only 8.3. Detailed reason for change (e.g., the demand on your facility was 512 kW, exceeding 500 kW twice in the past 12 months) – both RG&E and NYSEG. 8.4. Requirements of new rate schedule – NYSEG only
IX-9	Provide more visibility on the utilities' websites for time-of-use rate options.
IX-10	Determine drivers of substantial increase in Call Center costs between 2018 and 2023. Ensure costs are directly attributable to NYSEG and RG&E.
IX-11	Formally communicate to DPS any planned changes to business operations that result in consolidation or situations where outsourcing of utility work is done.
IX-12	Implement formal contract management to ensure such things as agreement-number assignments, change-order numbering, and monitoring of contract values in comparison to invoiced amounts.
IX-13	Unsupported expenses such as Customer Operations charges that cannot be substantiated by invoices and proven to be directly attributable to services for NYSEG and RG&E, should be classified as "below the line" and paid by shareholders.
IX-14	Improve QRS and SRS case file documentation. Include a minimum of the following: 14.1. Usage and billing history. 14.2. Customer communication log. 14.3. Root cause assessment. 14.4. Proof of feedback sent to responsible department. 14.5. Copy of customer letter for case closeout.
IX-15	Create KPIs to track and monitor the following: 15.1. First Call resolution

Rec #	RECOMMENDATION
	15.2. Delayed bills. 15.3. Commitments to follow-up with customers on issues when call-back is promised.
IX-16	Create a formal invoice review process and ensure this review process includes, but is not limited to, the following: 16.1. Invoices received and added to transaction record. 16.2. Invoice contains appropriate line-item information. 16.3. Invoice aligns with invoiceable items, per contract, and item amounts match. 16.4. Cost allocations are justified, and methodology is within transaction record. Also ensure that charges to NYSEG and RG&E can be directed supported, and that each budget owner has approved. 16.5. Transaction record indicates all budget owners have approved cost allocations. 16.6. Transaction is recorded correctly.
IX-17	Several areas of deficiency were noted in the Low-Income Program area: 17.1. Create a comprehensive Program Manual to include end-to-end program management. Include a minimum of the following: 17.1.1. Stakeholders. 17.1.2. Applicable tariffs. 17.1.3. Proof of eligibility requirements. 17.1.4. Process and procedure documentation. 17.1.5. Program goals and KPIs. 17.1.6. Program budget by admin, marketing/outreach and implementation. 17.1.7. OTDA file-matching cadence. 17.1.8. Tier discounts – maintenance of Tier discounts. 17.1.9. EAP form – English and other languages. 17.1.10. EAP letters – English and other languages. 17.1.11. Marketing and Outreach collateral – English and other languages. 17.1.12. Marketing and Outreach Strategy. 17.1.13. Community Based Organization partners. 17.1.14. List of reports with samples. 17.1.15. Training material locations. 17.1.16. Quality audit report locations. 17.2. Update Tariffs as noted in chapter. 17.3. Implement monthly quality review process.
IX-18	Provide supplemental data on the monthly CSPI report to DPS to include the number of bills not yet issued, number of bills issued late, number of days bills delayed by situation category (i.e. implausible, CDG Bill, etc.). In addition, each month indicates the number of accounts where consecutive bills were delayed including the number of consecutive months.
IX-19	Perform further financial review of Marketing and Outreach transactions to determine if costs are attributable to NYSEG and RG&E – and to define extent of corporate marketing transactions included in reporting. Eliminate corporate marketing costs in Outreach and Education and costs that are not directly attributable to NYSEG and RG&E.
IX-20	Update CSPI process documentation to define how percentage of calls answered is calculated and retain numerator and denominator values in workpapers.

Rec #	RECOMMENDATION
IX-21	Create formal override process to allow proper authority to approve adjustments made to CSPI metrics with appropriate supporting information on why it meets OCS definition and reason raw data reflected a different outcome.
IX-22	Ensure CSPI report model calculates all data in all cells, make sure quality checks are evident, review, document and certify all metric adjustments, and re-file CSPI metrics.
IX-23	Develop narrative of observations/actions to accompany staffing reports.
IX-24	Continue to make improvements to scam-tracking database to allow for reporting of scam types, amounts, verified scams, completed actions, and customer contact for closeout.
IX-25	Implement quality review and controls to ensure accuracy of Energy Efficiency data.
IX-26	Create implementation plan for all vendor recommendations to improve Energy Efficiency programs and data.
Physical and Cybersecurity	
X-1	Provide a detailed report and in-person presentation to DPS on Avangrid's prior and current plans to implement NIST CSF. This report must be provided at least one month prior to an in-person presentation. The report and presentation must include, at minimum, the following: 1.1. Detailed description of CSMP from original assessment in March 2020 to current date. 1.2. Review of each CSMP reassessment/re-evaluation performed and reason each reassessment/re-evaluation was required. 1.3. Discussion of CSMP governance model and all committees – including committee membership, responsibilities and work products produced. 1.4. Discussion of project management approach and implementation. Include all changes to project management since inception to current date. 1.5. Past and current CSMP procurement plans and contracting for all vendors, equipment and materials. 1.6. Scope changes to CSMP from inception to current date, with justifications for each scope change. Include information on all scope changes currently planned. Discuss scope risks and mitigation strategies. 1.7. CSMP resource management approach, staffing plans and actuals (internal and external) from inception to current date – with verifiable justifications for changes to staffing plans. Include discussion of program attrition issues and attrition rates since inception (for both internal and external resources). Include discussion of Avangrid's staffing plans going forward to complete project. Include resourcing risks and mitigation strategies. 1.8. CSMP schedule-management approach, schedule plans, milestones and actuals from inception to current date – with verifiable justification for all modifications. Include detailed discussion of CSMP schedule and milestones going forward, plus schedule risks and mitigation strategies. 1.9. CSMP cost management approach, budgets and actuals from inception to current date, with verifiable justification for all changes. Include discussion of workstream budget plans, controls, budget risks and mitigation strategies. 1.10. CSMP performance from inception to current date. Provide program metrics and examples of all forms of management reporting. 1.11. Discussion of business impacts for delays in implementing CSMP, with details regarding all vulnerabilities. 1.12. Discussion of change-management approach, plans and efforts to date.

Rec #	RECOMMENDATION
	1.13. Scope and approach for prior and future maturity assessments of Avangrid's NIST CSF programs. Provide DPS with prior final reports provided by vendors (no executive or management summaries) describing maturity study results. Include name of vendor that performed assessments, signed contracts, copies of all vendor-provided proposals, and Avangrid Procurement group's assessments of vendors providing proposals to perform maturity assessments. 1.14. Detailed account of funding provided for these activities within rates and how those funds have been used for the past five years. Discussion should also address how Avangrid plans to use funding for the next five years. 1.15. Current and future efforts to protect Avangrid IT and OT environments until NIST CSF is in place and functioning as intended.
X-2	Formalize CSMP expectations and planned outcomes with DPS. Provide testimony in future NYSEG and RG&E rate cases regarding CSMP expectations. Furthermore, provide DPS with semi-annual Avangrid CSMP reports going forward. At minimum, these reports should include metrics for scope, cost, schedule and resource management, plus earned value. Provide DPS with detailed variance reporting, with verifiable justification for all variances. Notify DPS of all Avangrid NIST CSF maturity assessments in terms of timing, scope, cost and vendor selection. Provide all signed Avangrid contracts, procurement assessments and full study results going forward. Meet with DPS to finalize CSMP expectations, outcomes and all reporting requirements
X-3	Develop metrics to track effectiveness of remediation efforts associated with Vulnerability Assessments/Penetration Tests and similar audits/assessments. Include these metrics as part of responsible executives'/employees' incentive compensation plans.
X-4	Develop a detailed plan to implement all NERC CIP internal controls and provide to DPS. Also provide quarterly implementation progress updates. Perform internal audit of NERC CIP controls for high-risk standards, as well those for CIP 004, 007, 010, and 011 and provide results and workpapers to DPS.
X-5	Provide DPS with detailed report and in-person presentation of Avangrid's business resilience program and current effort to revise the company's program, materials and reporting. The report must be provided to DPS at least one month in advance of in-person presentation. As part of this presentation, include a demonstration of the Business Continuity Management tool. Also provide DPS with a copy of all updated Business Impact Analysis, Business Continuity and Disaster Recovery Plans upon completion of these materials. The report and presentation should describe funding provided in rates for these activities and how funds have been used for the last five years.
X-6	Include DPS in all business resilience drills/exercises to observe activities. Provide DPS with post-drill/exercise reports, findings, recommendations and implementation plans.
X-7	Develop thresholds for "bad swipes" at non-NERC CIP-covered NYSEG and RG&E facilities and apply appropriate remediation for repeat offenders.
X-8	Develop annual goals for all Avangrid phishing program metrics and report quarterly results to DPS.
X-9	Benchmark how other industries, not just energy/utilities, are adapting proactive cybersecurity programs to the evolving cyber-threat environment (e.g., integration of AI into social engineering attacks). Complete benchmark and provide detailed report to DPS.
X-10	Conduct an internal audit of all contractors using their own computers to access Avangrid networks/systems/applications. Develop the audit scope in collaboration with DPS. At minimum, this audit must assess impact to Avangrid's cyber-security posture. Provide

Rec #	RECOMMENDATION
	audit results and associated work papers to DPS. Avangrid Internal Audit must make a presentation to DPS on audit results.
X-11	Clearly document and provide verifiable evidence to support adherence to implementation plans filed in Case 13-M-0178. Submit document and associated materials for DPS review.
X-12	Update Comprehensive Security Plan to meet all requirements in New York State's Critical Energy Generating and Transmission Facilities pursuant to Executive Law Section 713 and provide copy of Plan to DPS.
X-13	Immediately notify DPS of all physical and cyber-security staffing changes. Avangrid will meet with DPS to standardize and finalize reporting requirements as an activity in forthcoming audit recommendations implementation plan.
X-14	Perform background checks on all Avangrid physical and cyber-security employees who don't have a background check on file or have a background check that has not been updated within five years. Revise procedures to include requirement for updating physical and cyber-security personnel background checks on mutually agreeable timing with DPS and collective bargaining units (as required).
X-15	Revise position descriptions for all resources supporting the NERC CIP program to clearly detail NERC CIP roles and responsibilities.
INFORMATION SYSTEMS	
XI-1	Develop formal documentation and standardized templates to support management decision-making for IT project selection and prioritization. Documentation and templates must be aligned with and support Investment Planning's prioritization processes.
XI-2	Complete all IT PDDs according to Avangrid's documented instructions. Ensure all PDDs include comprehensive documentation of project purpose/justification, detailed cost estimates, cost-benefit analysis, estimated efficiency (ROI, quantified performance/process improvements, etc.), and standardized risk analysis. Each project should clearly map to specific NYSEG and RG&E strategic objectives.
XI-3	Develop a standardized method to track and report progress toward and attained benefit realization for each IT project. Provide annual reports to DPS.
XI-4	Perform closer monitoring of AMI-installed endpoints that are not communicating and develop cost estimates based on anticipated solution category.
XI-5	Create a model to track and quantify AMI benefits and review with DPS.
XI-6	Adhere to procurement policies. Require a formal justification document to be completed and included with all single-source and sole-source contracts.
XI-7	Engage a third-party to perform an independent and thorough study of Avangrid's IT project delivery practices. Incorporate recommendations into IT project management policies and procedures. Provide a full copy of the study results and revised IT policies and procedures to DPS.
XI-8	Adhere to formal project management practices, with proper monitoring and controls. This includes but is not limited to the following: 8.1. Use Earned Value Management to measure project performance. 8.2. Ensure project financial health is presented to stakeholders in a transparent manner and not subject to interpretation. Include workstream by budget. 8.3. Ensure all work efforts, including work areas not started, are communicated to stakeholders with cost estimates and that work is reflected in project schedule. 8.4. Include system performance by deployment region on stakeholder reports.

Rec #	RECOMMENDATION
	8.5. Perform quality reviews to ensure that invoices and SAP amounts match – and that transactions are for AMI Project, within scope, and match contract-pricing schedule. 8.6. Implement controls for contract-value monitoring and ensure products are not able to be ordered unless contracted for. 8.7. Maintain risk register with impact analysis. 8.8. Develop SAP reporting for increased visibility into internal and external costs.
XI-9	Formally disclose AMI AFUDC and all other AMI expenses as well as all other AMI plan deviations not captured in prior Rate Case testimony / workpapers to the DPS.
XI-10	Complete CIS assessment and roadmap. Provide assessment, roadmap and workpapers as part of a detailed presentation for DPS.
XI-11	Perform an annual comprehensive assessment to determine what routine manual work is completed outside of CIS and determine cost to business. Perform cost-benefit analysis for CIS change.
XI-12	Ensure vendor costs are directly charged for work performed on behalf of specific utilities. Where costs cannot be directly charged, clearly document planned allocation methodology and reasons for adjustments.
XI-13	Ensure that Budget Transfer forms include the name of approver and approval date fields.
XI-14	Initiate an independent review with DPS oversight of AMI and other IT projects to quantify the cost of unreasonable management.
PROCUREMENT	
XII-1	Redefine competitive procurement of goods and services versus transparency using accepted industrial terminology and include this in policies and procedures documents.
XII-2	Develop comprehensive performance metrics for the purchasing function. Formally define how each performance metric will be calculated and the data source for each.
XII-3	Develop a comprehensive, semi-annual report on the purchasing performance directly applicable to NYSEG and to RG&E supported by verifiable data. Ensure reports and supporting data are readily available and produced for the next management audit.
XII-4	Formally define how Supplier Diversity identification and certification will be conducted for NYSEG and for RG&E.
XII-5	Formally define how Supplier Diversity procurement will be conducted, how fair and equitable competition among suppliers will be ensured and include this in policies and procedures documents.
XII-6	Develop comprehensive performance metrics for Supplier Diversity procurement applicable to NYSEG and to RG&E.
XII-7	Develop a comprehensive, semi-annual report on Supplier Diversity purchasing performance directly applicable to NYSEG and to RG&E supported by verifiable data. Ensure reports and supporting data readily available and produced for the next management audit.
PERFORMANCE MANAGEMENT	
XIII-1	In support of developing separate NYSEG and RG&E strategic plans (see Chapter III-Governance and Management), create a performance management program that provides a clear line of sight from top-level NYSEG and RG&E corporate goals supported by subsequent department/operational goals and KPIs.
XIII-2	Create individual incentive plans for NYSEG and RG&E.
XIII-3	Include CLCPA initiatives in annual NYSEG and RG&E corporate goals.
XIII-4	To the extent that New York ratepayers have contributed to annual incentive payments to Avangrid employees (i.e. ASC, AMC, NYSEG and RG&E), NYSEG and RG&E should

Rec #	RECOMMENDATION
	adjust incentive compensation for performance metrics not related to NYSEG and RG&E and where NYSEG and RG&E performance did not meet targets
XIII-5	Formally document the annual goal-setting process.
XIII-6	Ensure that annual goals presented to CNC include clear targets and measurement criteria. Clearly indicate when a goal represents a customer-benefiting measure.
XIII-7	Expand third-party auditor review to include Avangrid Networks and the NYSEG and RG&E President and CEO individual metrics.
XIII-8	Ensure that CNC meeting minutes are reflective of pre-meeting distributed materials. All such materials should be included in the meeting minute package for official records.
XIII-9	Clarify the CNC role and Management Committee roles for APA plan administration within the formal APA plan documents.
XIII-10	Include date and version for all incentive plans, along with including the plan administrator's name.
XIII-11	Develop individual goals and career paths for union employees.
XIII-12	Pursue additional training and oversight to ensure individual goals are appropriately structured and focused on customer benefits.
XIII-13	Discontinue discretionary assessments in incentive compensation plans to ensure that all employees are evaluated based on consistent and measurable performance metrics.

II. AUDIT BACKGROUND

On May 18, 2023, the NYSPSC issued a Request for Proposal (RFP) in Case 23-M-0103 for a consultant to perform a Comprehensive Management and Operations Audit of New York State Electric & Gas Corporation (NYSEG) and Rochester Gas and Electric Corporation (RG&E). NorthStar Consulting Group, Inc. (NorthStar) was selected by the NYSPSC on September 15, 2023, to perform the audit.

Pursuant to Public Service Law §66(19)¹, the NYSPSC is authorized to engage a consulting firm to perform comprehensive management and operations audits. These audits, managed by DPS, provide an opportunity to gain valuable insight into utility operations and management. NorthStar conducted this audit in a manner characterized by frank and open discussion of findings, conclusions and recommendations. NorthStar's final report provides a comprehensive, independent and objective evaluation of current performance, specifically with respect to Avangrid's governance and executive management, budgeting and finance, electric and gas operations, customer operations, information systems, and performance management. The evaluation also provides recommendations for performance improvements.

A. OVERVIEW

Avangrid, Inc. (the U.S. subsidiary of Iberdrola) holds approximately \$44 billion in assets and operations in 24 states through two primary lines of business – Avangrid Networks and Avangrid Renewables. **Exhibit II-1** provides a high-level overview of Avangrid, Inc.'s corporate structure.

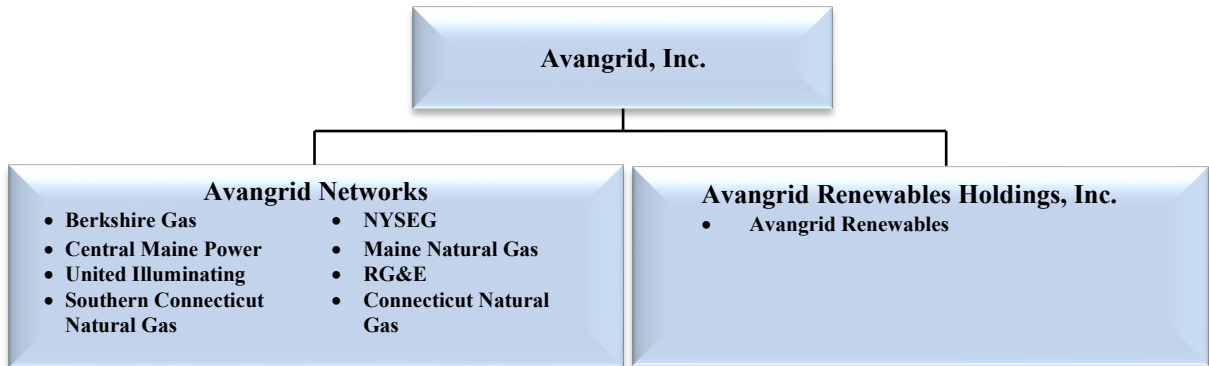
Simply stated, Avangrid Networks owns eight electric and natural gas utilities, serving approximately 3.3 million customers in New York State and New England.

Avangrid Renewables owns and operates 9.3 gigawatts of electricity capacity, primarily through wind and solar power, with a presence in 22 states across the United States. Through the Avangrid Networks business line, the company owns and operates electric distribution, transmission and generation companies and natural gas distribution, transportation and sales companies in New York, Maine, Connecticut and Massachusetts, delivering electricity to approximately 2.3 million electric utility customers and delivering natural gas to approximately 1.0 million natural gas utility customers.^{1 2}

¹ Website [New York Consolidated Laws, Public Service Law - PBS § 66 | FindLaw](#) Number 19

² Avangrid, Inc. Form 10-K for fiscal year ending December 31, 2023, filed on February 22, 2024.

Exhibit II-1 Avangrid, Inc. Simplified Corporate Structure

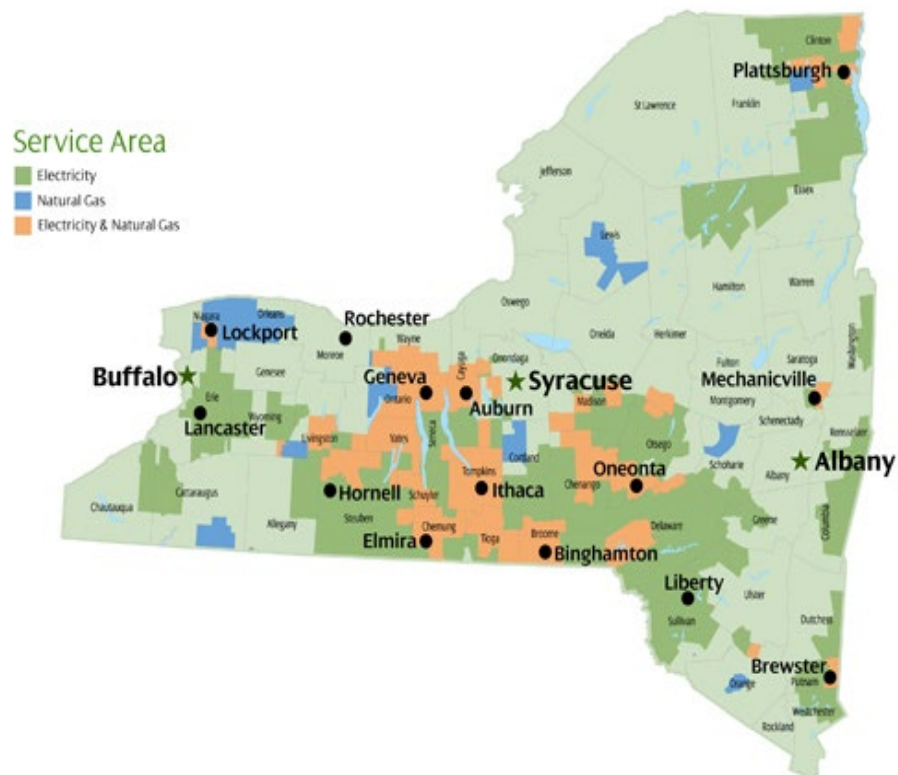


Source: Avangrid, Inc. Form 10-K for fiscal year ending December 31, 2023, filed on February 22, 2024.

The management audit focused on Avangrid and Avangrid’s New York utility businesses, NYSEG and RG&E, which provide electric and gas service to over 1.9 million electric and gas meters in upstate and western New York.³ **Exhibit II-2** shows NYSEG and RG&E service areas.

Exhibit II-2 NYSEG and RG&E Service Areas

NYSEG



³ DR 263 Attachment 1

RG&E



Source: DR 26 Attachment 1 page 12

Significant Developments and Outlook

Avangrid, Inc.'s Form 10-K, filed with the Securities and Exchange Commission (SEC) on February 22, 2023, provides the following information:

- On December 31, 2023, Avangrid, Inc. terminated its merger agreement with PNM Resources.⁴ PNM Resources was renamed TXNM Energy on August 2, 2024.⁵ TXNM Energy is a holding company based in Albuquerque, New Mexico.⁶
- Avangrid Renewables is currently responding to a U.S. Fish and Wildlife Service inquiry concerning fatalities of bald and gold eagles at Avangrid Renewable facilities.
- On June 23, 2023, Avangrid, Inc. was notified by the U.S. Customs and Border Protection Agency that the agency denied entry of 220 MWs of solar modules due to insufficient documentation that the panels were not manufactured in the Xinjiang Uyghur Autonomous Region.

⁴ Avangrid, Inc. Form 10-K for fiscal year ending December 31, 2023, filed on February 22, 2024, page 43.

⁵ <https://www.prnewswire.com/news-releases/pnm-resources-nyse-pnm-transitions-to-txnm-energy-txnm-with-trading-effective-on-august-5-302202348.html#:~:text=Jul%2022%2C%202024%2C%2006:30%20ET>. Accessed September 26, 2024.

⁶ <https://www.pnmresources.com/about-us/at-a-glance.aspx>. Accessed September 26, 2024.

- Avangrid, Inc operating revenues increased \$386 million over FY 2022.⁷
- The NYSPSC approved rate increases on October 12, 2023 for NYSEG and RG&E. The average NYSEG residential electric customer was predicted to see monthly bills increase more than 10 percent in the first year and more than 31 percent over three years. Average RG&E residential electric bills were predicted to increase 7.4 percent in the first year and more than 22 percent over three years.⁸

B. AUDIT SCOPE

As indicated in the RFP, the audit scope is conceptually based on a series of core audit elements that can be viewed as a flow diagram or feedback loop. Each audit element is connected to the others, and additional components inform and support core elements. This connection allows improvements in one area to flow to other areas over time. This audit's scope includes the following elements:

- Governance and Management
- Physical and Cyber Security
- Information Systems
- Electric Operations
- Gas Operations
- Budget and Finance
- Procurement
- Project Management
- Work Management
- Performance Management
- Customer Operations

Due to the Avangrid operating model, it is noteworthy that NorthStar's audit focused on Avangrid governance processes and the services it provides to NYSEG and RG&E. Therefore, NorthStar's audit assesses the efficiency and effectiveness of Avangrid in meeting NYSEG and RG&E performance goals and outlines opportunities for improvement; this includes quantitative Benefit/Cost Analyses (BCA). The audit report addresses all evaluative criteria for each element as specified in the RFP and includes additional evaluation criteria NorthStar recommends based on prior audit experience.

C. APPROACH TO THE AUDIT

NorthStar views this audit as a unique opportunity to support the NYSPSC and the Department of Public Service (DPS) staff as they meet the numerous challenges associated with regulating operations for New York State customers. NorthStar's approach is designed

⁷ Avangrid, Inc. Form 10-K for fiscal year ending December 31, 2023, filed on February 22, 2024, page 44.

⁸ <https://www.utilitydive.com/news/new-york-psc-approves-big-rate-increases-avangrid-utilities/696523/>. Accessed September 26, 2024.

to help ensure that Avangrid addresses strategic and operational concerns consistent with NYSEG's and RG&E's customer needs.

NorthStar will ensure that:

- All construction program planning issues potentially affecting the companies' operations are addressed in an effective manner.
- The companies' corporate mission(s), objectives, goals, planning and operations are consistent with customer needs.
- NorthStar's initial draft report includes original and independent analysis of each RFP scope item.
- NorthStar's final report provides detailed and practical recommendations that address strategic and operational issues.
- NorthStar's final report defines and quantifies expected implementation costs and benefits as appropriate.
- NorthStar's final report is well-documented, easy to understand and able to withstand public scrutiny.

Phase I. Orientation and Planning

Objectives for the audit's first phase included confirming NorthStar's understanding of goals, scope and DPS expectations; finalizing contractual, project management and other administrative matters; performing preliminary data collection; and gaining approval for a detailed work plan that would guide activities for the remainder of the audit. The following work activities were conducted during this phase:

- Finalized logistical and contractual arrangements with Avangrid and DPS staff. Specifics regarding project logistics, key contacts, interfaces, schedules and communications were established, along with audit protocols, which included the following:
 - Procedures for requesting and tracking interviews and documents
 - Working paper and documentation requirements
 - Procedures for adhering to auditing standards
 - Policies and procedures for treating confidential information
 - Quality control and reporting procedures
- Met with DPS staff to discuss concerns regarding Avangrid/NYSEG/RG&E, additional issues or areas to be considered, and DPS staff objectives for the audit
- Reviewed responses to initial document requests
- Attended Avangrid orientation presentation and conducted initial interviews
- Prepared final work plan and obtained DPS approval. The work plan was submitted to DPS on January 9, 2024, and approved on January 18, 2024. The plan includes detailed

evaluative criteria, tasks, activities, consultant assignments and hours, and a revised audit schedule.

Phase II. Technical Review and BCA Development

In this phase, the audit team performed principal investigation, data collection and other technical review activities for each audit element. In general, audit tasks and activities included the following:

- Review and analysis of all documents and data requested from Avangrid, NYSEG and RG&E
- Interviews with Avangrid, NYSEG and RG&E personnel
- Field observations
- Testing for compliance with Avangrid, NYSEG and RG&E industry and other standards
- Progress reports to DPS staff

NorthStar's audit activities included over 1,300 data requests and 40 interview requests. In formulating conclusions, the audit team focused on the most substantive issues, and management practices were evaluated against existing rules and regulations, plus sound, generally accepted business practices. The team applied a standard of reasonableness, which regulators and courts have accepted in a wide range of management performance evaluations – one that does not require perfection, is not based on outcomes, and does not rely on hindsight. Audit conclusions reflect areas where Avangrid is currently employing appropriate management, along with areas needing improvement.

Phase III. Report Development

Upon completion of audit field work and analyses, NorthStar prepared draft and final reports. A preliminary draft report was submitted to the DPS for review and comment on September 30, 2024. The report included an executive summary, a description of the audit process, and chapters that addressed each audit topic area. Each focused chapter included background, evaluative criteria, findings and conclusions, plus the team's recommendations. Preliminary BCA forms were submitted separately, following receipt of the initial draft report.

During this phase, NorthStar also developed BCAs for audit recommendations. The BCAs provide a detailed description of expected costs and benefits associated with implementing NorthStar's recommendations, and, where applicable, a five-year payback analysis. Capital and O&M costs are separately identified and include labor costs, outside services, materials and equipment, systems and other costs. Some recommendations may result in modifications to existing practices and are not expected to increase costs. Benefits may include increased productivity, improved reliability, reduced expenses, reduced capital requirements, reduced full-time equivalent staffing (FTEs), internal labor or contractors, improved practices and processes, improved schedule adherence, improved work quality, optimized organization, or improved analytics. While all recommendations include defined benefits, not all include readily quantifiable cost savings. The BCAs were submitted to Avangrid for review and to include any readily available cost and benefit information.

Based on feedback from DPS staff and fact-verification by Avangrid, NorthStar prepared and submitted a final report and accompanying BCAs to the DPS on February 4, 2025.

D. ORGANIZATION OF THE REPORT

The report is organized to provide an orderly flow of topics and conclusions that reflect the issues identified by the audit, rather than by the ordering of the elements in the feedback loop. The remainder of the report is organized as follows:

Chapter I:	Executive Summary
Chapter II:	Audit Background (this chapter)
Chapter III:	Governance and Management
Chapter IV:	Budget and Finance
Chapter V:	Electric Operations
Chapter VI:	Gas Operations
Chapter VII:	Project Management
Chapter VIII:	Work Management
Chapter IX:	Customer Operations
Chapter X:	Physical and Cybersecurity
Chapter XI:	Information Systems
Chapter XII:	Procurement
Chapter XIII:	Performance Management
Appendix:	Benefit/Cost Analyses – Provided under separate cover.

III. GOVERNANCE AND MANAGEMENT

This chapter provides the results of NorthStar's review of governance processes and corporate structure as they relate to NYSEG and RG&E.

A. BACKGROUND

Governance refers to the system of rules, practices and processes by which a company is directed and controlled. Corporate governance essentially involves balancing the interests of a company's many stakeholders – shareholders, management, regulators, customers, suppliers, financiers, government and the community. Good governance provides a framework for achieving a company's objectives. Effective executive management and governance generally display the following attributes:

- The board of directors or trustees is composed of an appropriate number of members.
- An experienced, knowledgeable and involved board of directors or trustees has appropriate committees to provide effective oversight and direction.
- Board members and top executive management possess the essential skills necessary for managing a company.
- Proper organizational focus and direction supported by effective corporate planning and performance reporting.

What is now known as Avangrid, Inc., was initially incorporated in 1997 as a New York corporation named Energy East Corporation.¹ In 2008, Iberdrola S.A., or Iberdrola, a corporation (sociedad anónima) organized under the laws of the Kingdom of Spain, and leader in the energy industry, acquired Energy East Corporation and changed its name to Iberdrola USA, Inc. In 2013, Iberdrola USA, Inc. completed an internal corporate reorganization to create a unified corporate presence for Iberdrola in the United States, bringing all of its U.S. energy companies under the umbrella of Iberdrola USA, Inc. This internal reorganization resulted in the concentration of principal businesses into two major subsidiaries: Avangrid Networks, Inc. which holds all of Avangrid regulated utilities, and Avangrid Renewables, Inc. which holds renewable and thermal generation businesses. Currently, Iberdrola directly owns 81.6% of the outstanding shares of Avangrid common stock.²

On December 16, 2015, the acquisition of UIL Holdings Corporation, or UIL, was completed and the corporate holding company name was changed from Iberdrola USA, Inc. to Avangrid, Inc. – a group holding company.

Avangrid holds approximately \$44 billion in assets and operations in 24 states concentrated in two primary lines of business – Avangrid Networks (the utilities) and Avangrid Renewables.

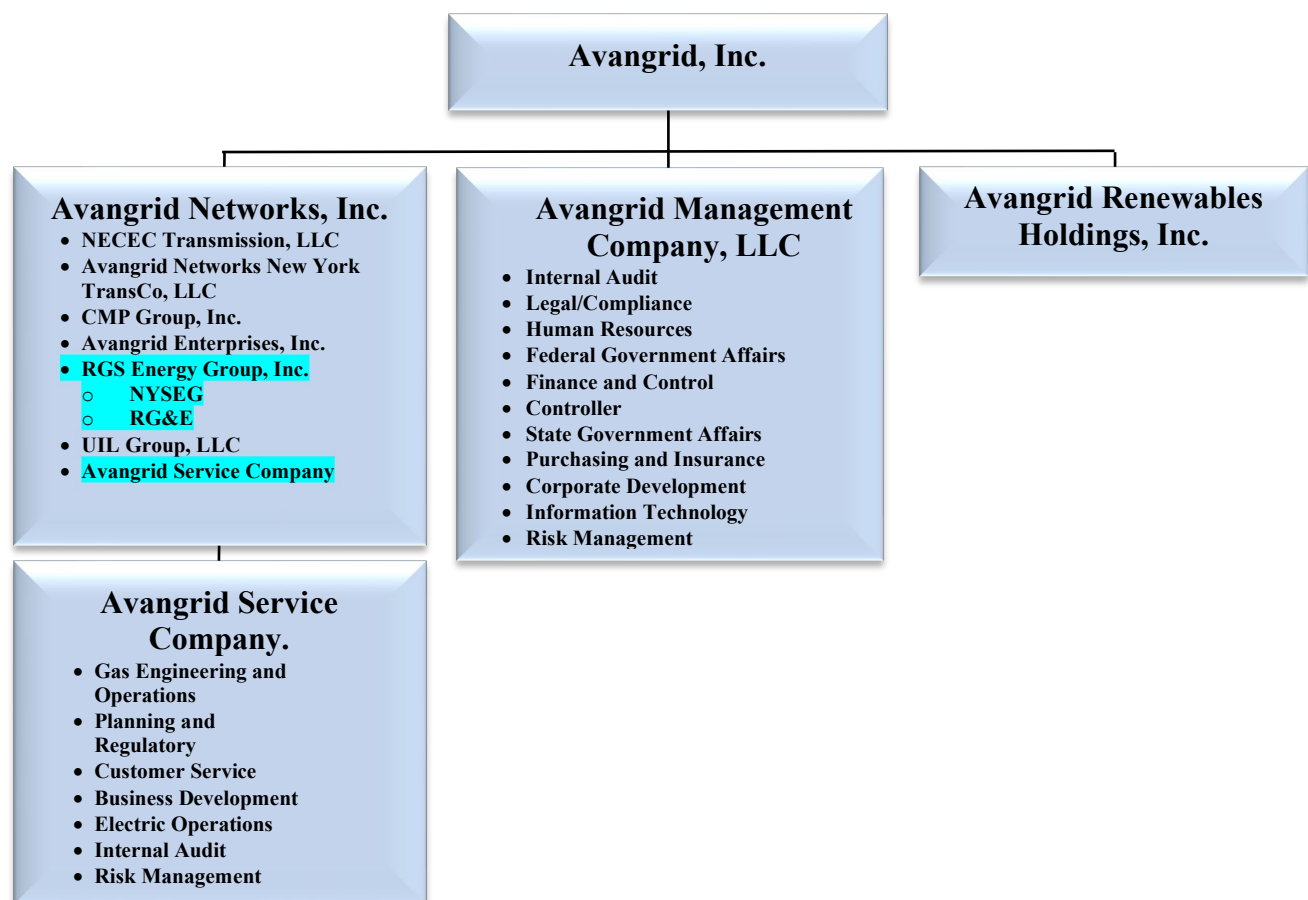
¹ [AGR-2023-10-K-final-2-22-24-as-filed.pdf \(q4cdn.com\)](#)

² On May 17, 2024, Iberdrola, a Spanish energy conglomerate, announced a deal to acquire the remaining 18.4% of its US subsidiary, Avangrid, for \$35.75 per share. This is an increase from the original offer of \$34.25 per share made in March 2024. The deal is expected to close in the fourth quarter of 2024, pending shareholder and regulatory approval.

Avangrid Networks owns eight electric and natural gas utilities, serving approximately 3.3 million customers in New York and New England. Avangrid Renewables owns and operates 9.3 gigawatts of electricity capacity, primarily through wind and solar power, with a presence in 22 states across the United States. Avangrid employs approximately 8,000 people.

Avangrid, Inc. identifies two primary subsidiaries: Avangrid Networks and Avangrid Renewables.³ However, from a governance perspective, there are three operational organizations reporting to Avangrid, Inc. as shown in **Exhibit III-1**. Avangrid Management Company, LLC, is a Delaware limited liability company and a wholly owned subsidiary of Avangrid, Inc.⁴ **Exhibit III-1** highlights the responsibilities of each operational unit.

Exhibit III-1 Avangrid Operational Organizations



Source: DR 1 Attachment 1 and DR 26 Attachment 1, Supplement 1

Avangrid Networks, a Maine corporation, performs electric distribution, transmission and generation, along with natural gas distribution, transportation and sales on behalf of its subsidiaries – the eight regulated utility businesses. Avangrid Networks’ electric and gas distribution utilities in New York, Maine, Connecticut and Massachusetts are subject to

³ <https://www.sec.gov/Archives/edgar/data/1634997/000119312518222563/d560503dex101.htm>

⁴ DR 1 Attachment

regulation by NYSPSC, the Maine Public Utilities Commission (MPUC), the Connecticut Public Utilities Regulatory Authority (PURA) and the Massachusetts Department of Public Utilities (DPU), respectively. Avangrid describes itself as a regional energy services and delivery company providing services through its eight regulated utilities:⁵

- New York State Electric & Gas Corporation (NYSEG) serves electric and natural gas customers across more than 40 percent of the upstate New York geographic area.
- Rochester Gas and Electric Corporation (RG&E) serves electric and natural gas customers within a nine-county region in western New York, centered around Rochester.
- The United Illuminating Company (UI) serves electric customers in southwestern Connecticut.
- Central Maine Power Company (CMP) serves electric customers in central and southern Maine.
- The Southern Connecticut Gas Company (SCG) serves natural gas customers in Connecticut.
- Connecticut Natural Gas Corporation (CNG) serves natural gas customers in Connecticut.
- The Berkshire Gas Company, (BGC) serves natural gas customers in western Massachusetts.
- Maine Natural Gas Corporation (MNG) serves natural gas customers in several communities in central and southern Maine.

Exhibit III-2 provides information about the rate base, number of customers and the amount of electricity or natural gas provided by each of Avangrid’s regulated utilities as of the year ended December 31, 2023:

Exhibit III-2
Avangrid Networks Utilities

Utility	Rate Base ⁽¹⁾ (in billions)	Electricity Customers	Electricity Delivered (in MWh)	Natural Gas Customers	Natural Gas Delivered (in DTh)
NYSEG	\$ 4.5	919,650	15,328,774	271,976	52,445,058
RG&E	\$ 3.0	391,634	6,875,800	324,793	54,434,921
CMP	\$ 2.8	664,260	8,716,845		
MNG	\$ 0.1			6,136	2,096,184
UI	\$ 2.0	344,976	4,748,336		
SCG	\$ 0.7			208,601	34,292,687
CNG	\$ 0.6			187,790	32,677,005
BGC	\$ 0.2			40,644	9,893,159
Total	\$ 13.9	2,320,520	35,669,755	1,039,940	185,839,014

- (1) “Rate base” means the net assets upon which a utility can receive a specified return, based on the carrying value of such assets. The rate base is set by the relevant regulatory authority and typically represents the value of specified property, such as plants, facilities and other investments of the utility. These rate base values have been calculated using the best estimates as of December 31, 2023.

Source: Avangrid Form 10K for the fiscal year ended December 31, 2023

⁵ AGR 2023 10K final 2-22-2024 as filed pdf (q4cdn.com) page 9.

For large public companies in the U.S. such as Avangrid, Inc., a board of directors or trustees must provide overall guidance, direction and oversight of company management, serve as advisors and provide an impartial review of management decisions. The board's value can be strengthened by the presence of independent directors or trustees not associated with the company. Independent directors or trustees provide an outside view, can add business perspective, and offer suggestions based on other industry experience. Many companies with a strong tie to specific communities include community or regional non-profit leaders on their boards to provide adequate representation of their customers' needs.

Generally, a board of directors' or trustees' responsibilities include oversight of three major business areas: operations, decision-making and a vision for the future.

- Operational management focuses on performing day-to-day work and producing expected results. This oversight includes approval of operating and capital budgets, as well as the issuance of financial instruments.
- Decision-making responsibilities include directing performance and goal-setting, along with maintaining the business' course.
- Vision and leadership provide real-life examples of executive management, corporate perspective and values, plus direction for the enterprise's future.

Enterprise Risk Management

Enterprise Risk Management (ERM) is the process through which a corporation's Board of Directors (BOD) and management team identify risks the company faces, quantify and prioritize those risks, and proactively take steps to mitigate or manage them. Organizations should pursue a variety of risk-mitigation strategies depending on size, type and potential impact of various risks. As in any organization, the risks – financial and operational – associated with decisions and the options for managing those risks should be a clear part of corporate decision-making.

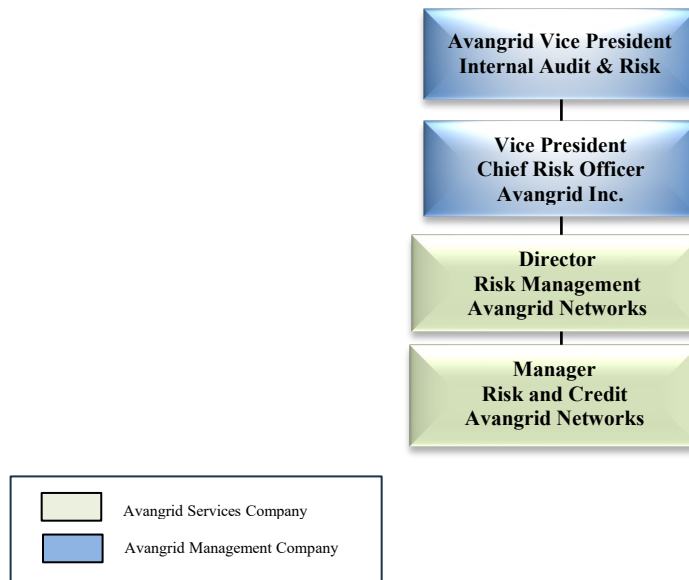
Avangrid's 2023 Annual Report categorized the organization's risk into the following six factors:⁶

- Strategic
- Regulatory and Legislative
- Operational, Environmental, Social and Legal
- Business and Market
- Common Stock Ownership
- General

ERM activities for Avangrid Networks are performed by personnel in Avangrid Services Company. Two risk management team members are dedicated to Avangrid Networks – Director of Risk Management and Manager of Risk and Credit. These resources report to the Avangrid Vice President & Chief Risk Officer who reports to the Avangrid Vice President – Internal Audit & Risk as shown in **Exhibit III-3**.

⁶ Avangrid Inc. 2023 Annual Report 10-k

Exhibit III-3 Avangrid Risk Management Organization Structure



Source: DR 1 Attachment 1.

The Avangrid Networks risk committee generally meets monthly and at least quarterly. The Risk Committee membership includes the following:⁷

- Avangrid Networks CEO - Avangrid, Inc. COO - CEO Central Maine Power - CEO NYSEG and RG&E - CEO UIL Holdings Co. - VP Electric Operations - VP Gas Operations - VP Customer Service - VP Human Resources	- VP Control - VP Regulatory Strategy - VP Risk Management - Director Cyber Security - Director Internal Audit - Director Compliance - VP/General Counsel - Director Risk Management - Manager Risk Management

The Avangrid Networks risk committee responsibilities include oversight of ERM, Credit Risk, and Market Risk for all regulated operating utilities (OPCOs). A summary of the Committee's duties includes the following:

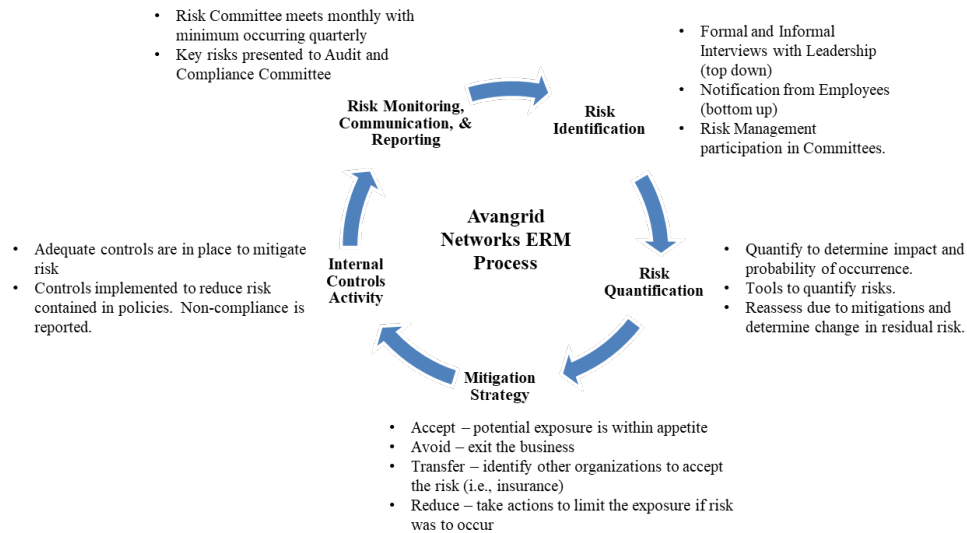
- Review and monitor material risks, including enterprise risks, credit risks and market risk reports.
- Help set the tone and develop an enterprise risk culture.
- Provide input to management regarding Avangrid Network's risk appetite and tolerance.
- Monitor the organization's risk profile, including potential exposure to various risks.

⁷ Inclusion of the Avangrid Networks General Counsel to the Networks Risk Committee complies with the prior audit Recommendation 6.1.

- Oversee the development of the Avangrid Networks' Risk Policy and procedures relating to risk assessment, management and reporting.
- Monitor all risks facing Avangrid Networks' business.
- Review and assess the effectiveness of the risk committee and processes.⁸

The Avangrid Networks ERM process includes five steps, as described in **Exhibit III-4**.

Exhibit III-4 Avangrid Network ERM Process



Source: DR 554 Attachment 1, Supplement 1.

The Avangrid Networks Key Risk Register classifies identified and quantified risks as structural or current.

- Structural risks – risks that are inherent to the business of delivering utility services. Risk characteristics include Risk Factor, Relevance, Evolution, Risk Description, Estimated Long- and Short-Term Impact, Reputation, Probability, Mitigation, and Risk Owner.
- Current Risks – risks that are classified as current and transitory. Risk characteristics are largely the same as discussed for “structural risks”.

Two primary reports produced for executive management and boards of directors include the Key Risks and the Limits and Indicators (i.e., Performance Metrics) reports. These are provided to the Avangrid Networks Risk Committee, Audit and Compliance Committee and Global Risk Committee, along with company leadership on a quarterly basis.

- Limits and Indicators Report– Limits and indicators are defined within the Risk Policies and based on the organization’s risk appetite. Negative trends or changes in

⁸ DR 27.

evolution are discussed between Risk Management and the Business Areas to ensure appropriate mitigations.

- Key Risk Report – Key risks are identified by Risk Management and the Business Areas through a top-down/bottom-up risk-identification process. Key risks are reviewed and updated by Risk Management and the Business Areas. Quarterly Key Risk reports are provided to the Committees and company leadership.⁹

The only significant change from the previous audit is that Risk management is no longer responsible for business continuity plans and exercises.

Strategic Planning

Strategic planning provides a roadmap of a company’s overall direction for the foreseeable future. A company’s strategic planning process should include identifying trends and risks, and the resulting plan should be linked to budgeting and financial processes and tactical/operational plans. The final plan also should be informed by the ERM program and monitored by performance management processes to achieve strategic objectives, as illustrated in **Exhibit III-5**.

Exhibit III-5
Strategic Planning Components

	Overall Direction	Qualitative Factors	Quantitative Factors	Performance Management
Near Term (12-18 months)	Corporate Mission & Vision	• Tactical Plans	• Operating Budgets	• Annual Targets
Mid-Term (2-5 years)		• Likely challenges • Have-to and want-to activities • Multi-year projects	• 5-year capital plan • Net income projections • Financing plans	• Measurable progress towards meeting mid-term objectives
Long-Term (5-10 years)		• Horizon opportunities and threats	• Monitoring possible big needs	• Monitoring
Risk	Risk Assessment and Monitoring			

Source: NorthStar Consulting Group

Avangrid’s stated purpose is “Working together to deliver a more accessible clean energy model that promotes healthier, more sustainable communities every day”. There are three values associated with this purpose statement:

- Sustainable: We seek to be a model of inspiration for creating economic, social and environmental value in our communities, and we act positively to affect local development, generate employment and give back to the community.
- Agile: We act efficiently and with passion to drive innovation and continuous improvement at both the local and global level.

⁹ DR 554 Attachment 1, Supplement 1.

- Collaborative: We work together toward a common purpose and mutual benefit while valuing each other and our differences.¹⁰

B. AUDIT SCOPE ITEMS

- Determine if the corporate governance structure and executive management approach appropriately demonstrate commitment to regulatory objectives and the CLCPA goals.
- Assess how the Companies have incorporated CLCPA objectives into the strategic planning process.
- Examine how the Companies monitor and allocate capital spending to Disadvantaged Communities.
- Assess how executive management and the Boards of Directors make resource allocation decisions.
- Determine the extent to which ERM programs and internal controls regarding financial and non-financial risk areas provide adequate ratepayer protection and ensure adequate oversight.
- Assess the Companies succession planning efforts.

C. FINDINGS AND CONCLUSIONS

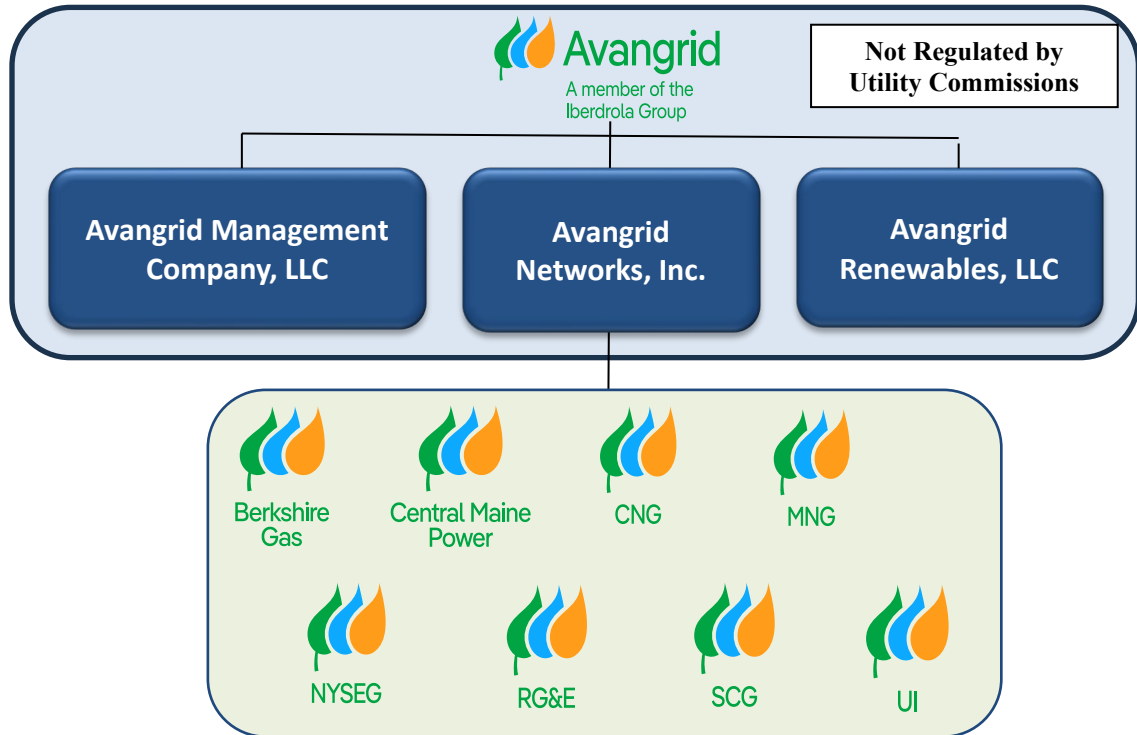
1. **The presentation of NYSEG and RG&E corporate governance is misleading. Stated simply, RG&E and NYSEG do not govern or manage the finance, planning, engineering, customer service, operation, maintenance or resource allocation of the New York utilities. Those functions are performed by the two Avangrid service companies.**
 - The presentation of corporate governance states that “The AVANGRID system of corporate governance establishes a framework of strengthened autonomy that ensures that the interest of minority shareholders of AVANGRID are properly protected.”¹¹
 - While it is unclear where the framework of strengthened autonomy exists, Avangrid, Inc. does not address the existence of its wholly owned service company – Avangrid Management Company, LLC – and the many corporate governance functions that it performs in its Form 10-K Business Section. The Avangrid corporate structure is highlighted in **Exhibit III-6**.¹²

¹⁰ DR 24

¹¹ DR 26, and Supplement 1

¹² Avangrid 10-K for the fiscal year ended December 31, 2023. Part IV – Employment Agreements and DR 26.

Exhibit III-6 Avangrid Corporate Structure



- Avangrid presents RG&E and NYSEG as state regulated corporate entities, as shown in **Exhibit III-6**.¹³ However, as noted earlier, these utilities are operated by two unregulated Avangrid service companies: Avangrid Networks' subsidiary, Avangrid Service Company, and Avangrid Management Company.
- Iberdrola, S.A., Avangrid, Inc., Avangrid Management Company, Avangrid Networks, Avangrid Service Company and RGS Energy Group, Inc. (the holding company of NYSEG/RG&E), are unregulated entities.
- Iberdrola, S.A., Avangrid, Inc., Avangrid Management Company and Avangrid Network's Boards of Directors do not include RG&E or NYSEG – or any other U.S. utility entities.
- Avangrid, Inc. common stock is listed on the New York Stock Exchange. Iberdrola, S.A. presently owns 81.5 percent of the issued and outstanding shares of Avangrid, Inc. common stock.¹⁴

¹³ DR 26 Orientation Presentation Final, slide 6

¹⁴ On May 17, 2024, Iberdrola, a Spanish energy conglomerate, announced a deal to acquire the remaining 18.4% of its US subsidiary, Avangrid, for \$35.75 per share. This is an increase from the original offer of \$34.25 per share made in March 2024. The deal is expected to close in the fourth quarter of 2024, pending shareholder and regulatory approval.

- NYSEG and RG&E's Board of Directors includes three Avangrid Networks resources and the NYSEG and RG&E CEO.
- The NYSEG and RG&E's Board of Directors is placed at the fifth tier of the Iberdrola corporate governance hierarchy: Iberdrola/Avangrid, Inc./Avangrid Networks/RGS Energy Group, Inc. and then NYSEG and RG&E.
 - The NYSEG and RG&E Boards meet jointly three times per year.¹⁵
 - Meeting minutes are less than two pages. Presentations for the meetings are distributed one or two weeks prior to the meeting.
 - Avangrid Service Company officers present status of projects, finance, regulatory matters, Networks business performance and analysis, etc.
 - Officers elected by the Board of Directors are, in many cases, Avangrid resources.
- Avangrid, Inc. has six Board Committees, as noted below, and Avangrid Networks' BOD includes one Committee. The NYSEG and RG&E Boards of Directors do not have committees.¹⁶
 - The Audit Committee is a standing committee of the Avangrid, Inc. Board of Directors.
 - The Compensation and Nominating Committee is a standing committee of the Avangrid, Inc. Board of Directors.
 - The Executive Committee is a standing committee.
 - The Governance and Sustainability Committee is a standing committee of the Avangrid, Inc. Board of Directors.
 - The Unaffiliated Committee is a standing committee of the Avangrid, Inc. Board of Directors.
 - The Special Committee is a committee of the Avangrid, Inc. Board of Directors relating to oversight of the New England Clean Energy Connect Project (the NECEC Project).
- Avangrid Networks has only one BOD Committee: Audit and Compliance Committee.
- A review of NYSEG and RG&E Board minutes suggests that there are no operating or financial decisions made during board meetings – merely discussion.¹⁷
- NorthStar's requests for NYSEG and RG&E strategic/corporate/business plans, including implementation and monitoring documents over the past five years, produced only an Avangrid Networks Business Strategic Plan.¹⁸ The Networks Strategic Plan is reviewed by the Networks Leadership Team with status updates regarding current year objectives periodically discussed at Avangrid Networks Leadership Meetings. There is no reference to any RG&E or NYSEG discussions.

¹⁵ DR 5

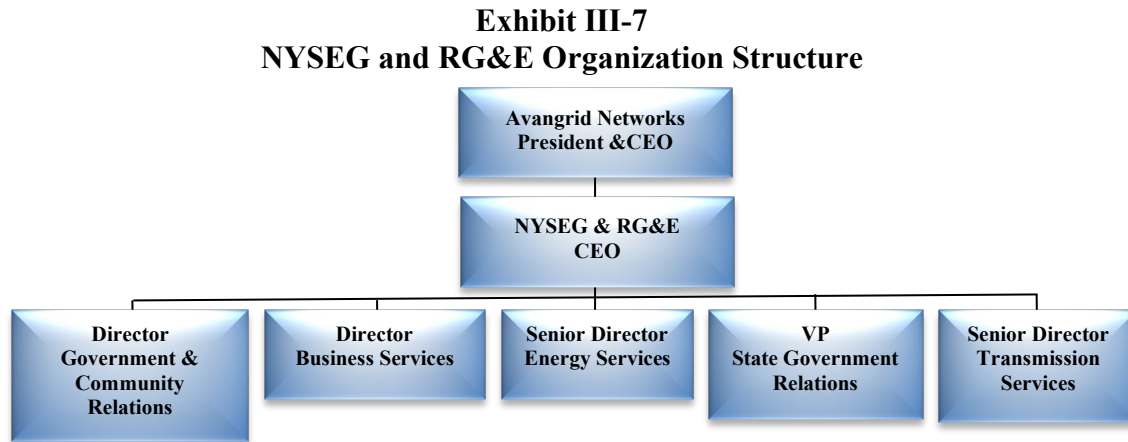
¹⁶ DR 3 and 6

¹⁷ DR 5

¹⁸ DR 13

2. The NYSEG and RG&E CEO reports directly to the Avangrid Networks CEO.

- NYSEG and RG&E direct reporting organizations are minimal, as shown in **Exhibit III-7**.¹⁹



Source: DR 1 and DR 26.

3. Resources and reporting relationships that were presented to the DPS and NorthStar can be misleading.

- Numerous positions presented as NYSEG and/or RG&E are Avangrid resources or report to Avangrid management.²⁰
 - Patricia Nilsen serves as President and Chief Executive Officer for NYSEG and RG&E and is a member of the board of directors of NYSEG and RG&E. She also serves as the Chief Executive Officer, President, and Controller of RGS Energy Group, Inc.
 - Noelle Kinsch serves as Vice President, General Counsel and Corporate Secretary of Avangrid Networks, Inc. She is also a member of the Avangrid Networks Senior Management Team. Serving as General Counsel of Avangrid Networks since April 2016, Ms. Kinsch manages the Avangrid Networks legal department and oversees all legal matters for Avangrid Networks and its operating companies.
 - Joseph Purington serves as the President and Chief Executive Officer of Central Maine Power Company (CMP) and is also a member of the CMP Board of Directors. He also serves as the President of Avangrid Service Company (ASC) and is a member of the ASC Board of Directors.
 - Andrea VanLuling serves as Vice President, Controller and Treasurer of Avangrid Networks, Inc. and Avangrid Service Company. She is also the Controller and Treasurer of NYSEG, RG&E, and Central Maine Power Company (CMP). In addition, Ms. VanLuling serves on many boards of directors of Avangrid Networks subsidiary companies, including NYSEG and RG&E.

¹⁹ DR 1

²⁰ DR 26, 336 and 1226

- Jeffery Rosenbloom, New York VP, General Counsel and Secretary, is an Avangrid, Deputy General Counsel.
 - All Controller and Deputy Controller positions listed are AMC or ASC resources.²¹
 - NYSEG and RG&E Officers are Avangrid resources.²² All positions titled General or Deputy Counsel, Controller, Deputy Counsel, senior Gas and senior Electric positions are Avangrid Networks or Avangrid Management Company resources.
 - Avangrid documents state that corporate function employee assignments are based on the 80/20 assignment principle:²³
 - If an employee works 80 percent or more of the time for a single company, then this employee is assigned to that company.
 - If an employee works more than 20 percent for several companies, then this employee is assigned to the Service Company.
 - However, NorthStar observed that time charged by NYSEG/RG&E appointed resources shows that single-company time rarely exceeded 80 percent. And yet, for the same position roles/responsibilities that were equally shared across the Avangrid corporate family, their time charged to affiliated utilities was not proportionate with multi-utility roles/responsibilities.²⁴
- 4. The Avangrid, NYSEG and RG&E organization and governance do not comply with NYSPPSC Order Adopting Staff Report and Approving Reorganization – Case 12-M-0066, et al.**
- Appendix I of the Order – Financial and Corporate Protection Conditions §7. Governance Provisions (d) states: A majority of the Utility Board of Directors shall be Eligible Directors. An Eligible Director is any individual who is not: (i) an officer or director of HoldCo (other than Networks only); or (ii) an officer or director of any of Iberdrola’s non-utility Affiliates; or (iii) an officer or director of any Competitive Energy Affiliate or Unregulated Affiliate.²⁵
 - §7. Governance Provisions (h) states: NYSEG, RG&E and Networks shall prohibit the members of their Boards of Directors from having interests, financial or otherwise, in competitors to NYSEG, RG&E or Networks, or in Iberdrola affiliates or subsidiaries that are not subject to ratemaking regulation.
 - All four members of the NYSEG and RG&E Board of Directors are officers/directors of other Avangrid unregulated affiliates as described in Conclusion 3 above. **Exhibits**

²¹ DR 336

²² DR 336

²³ DR 593 Attachment 2, Appendix C – One Corporate Model

²⁴ DRs 1139, 1141, 1227, and 1228

²⁵ NYSPPSC Order, Case 12-M-0066, Issued and Effective November 5, 2013.

III-1 and III-6 illustrate the Avangrid corporate structure and highlight these unregulated entities.

5. NYSEG and RG&E do not perform traditional utility functions. An extraordinary portfolio of services is provided by the two unregulated Avangrid, Inc. service companies: Avangrid Management Company, LLC (AMC) and Avangrid Networks' subsidiary company – Avangrid Service Company (ASC).²⁶

- AMC provides “corporate” services including:
 - Physical and Cyber Security
 - Legal Services
 - People and Organization (HR)
 - Information Technology
 - General Services
 - Control Services
 - Risk Management
 - Corporate Communications
 - Internal and External Audit
 - Purchasing
 - Office Services
 - SAP Platform
 - Insurance Services
 - Fleet Management
 - General Administration
- ASC provides “technical” services including:
 - Gas Operations and Engineering
 - Electric Planning and Operations
 - Asset Management
 - Finance and Operations Performance
 - Emergency Preparation/Management
 - Projects (Project Management)
 - Process and Technology
 - Digital Planning
 - Regulatory and Investment Planning
 - Customer Service
 - CLCPA and Smart Grid Innovation
- Prior to the 2018 New York Management Audit, two separate contracts existed: one for corporate services and one for technical services.²⁷ Based on audit recommendation #8.2 in Chapter 8, “Affiliate Relationships and Transactions,” Service Level Agreements (SLAs) were established for AMC, ASC and each utility, each utility and AMC, ASC, and among all operating utilities. However, it is important to note that all of these SLAs are practically the same documents (nine agreements just for RG&E and NYSEG) for the same services, regardless of provider or client entity.²⁸
- Furthermore, the multiple SLAs implemented by Avangrid do not address all the elements contained in recommendation #8.2:

Avangrid should develop affiliate-specific service agreements covering the individual relationships between the New York utilities and their affiliates, rather than having one generic agreement covering all U.S. service companies and client companies. Avangrid should also develop service level agreements (SLAs) to support and

²⁶ DR 26 page 19

²⁷ *Comprehensive Management and Operations Audit of New York State Electric & Gas Corporations and Rochester Gas and Electric Corporation*, Case 16-M-0610, November 2018.

²⁸ DR 593 and 594

document the services to be provided under the terms of each agreement. SLAs should list and fully describe the services to be provided during the upcoming budget year, anticipated service volumes, the basis for pricing and allocation methods when applicable. When feasible, service agreements and accompanying SLAs should provide for client companies to have control over the volume of service they must purchase, and evidence of client company acceptance of service volumes and prices should be established and documented during the intercompany services budgeting process. Both the affiliate providing services and the affiliate receiving the services should approve and sign the overall agreement covering the general terms of the affiliate relationship as well as each SLA.

6. SLA charges from AMC/ASC to NYSEG and RG&E are determined solely by the service provider and invoiced without the client utility's detailed review, adjustment and approval.

- Services (AMC and ASC) are charged using an allocation methodology.²⁹ Highlights include the following:
 - Appendix A is a high-level description of ASC and AMC functions and services.
 - Appendix B is a summary of affiliate charges.
 - Appendix C of the SLAs contains the Cost Allocation Manual (CAM) – the billing model – which includes cost drivers for services cost allocation.
 - Each year, the Service Company notifies the utility client company of the estimated price of the contracted services for the following year. The Service Company then issues an invoice for payment to its corporate account.
 - Within 15 days of receiving the invoice, the Client Company may make comments or inquiries to the invoice.
 - The parties agree that the Client Company shall be entitled to conduct an independent audit of the cost of the Services and the criteria applied.
- While SLAs state that Client Companies can make comments or inquiries to service company budgets, Avangrid stated that:

“There were no changes from the budgeted amounts requested by RG&E and NYSEG for 2022 and 2023. Budgeted amounts are based on Service Company budgets which are reviewed and approved at a corporate level. Budgeted amounts are provided to the business for planning purposes and as an informational reference.”³⁰
- Avangrid Internal Audit performed two audits of affiliate transactions during 2022.³¹ Both audits were for the exclusive use of Avangrid executives and there was no indication in the audit reports that the scope specifically included NYSEG and RG&E.

²⁹ DR 28, 593, 594

³⁰ DR 893

³¹ DR 14 Supplement 1 and Supplement 2

- One audit evaluated the process of submitting financial data sent to Maine and differences in reporting within Networks for 2018 through 2021. The audit concluded that controls are satisfactory and in place but needed updates.
 - The second audit concluded that service agreement cost allocations were properly configured, Cost Allocation Model compliance was confirmed, and service contracts were consistent with prior years. Avangrid stated that NYSEG and RG&E SLAs were included in workpapers.
- There have been no internal audits of AMC or ASC products and services charges specific to NYSEG or RG&E over the last five years, and no documented audits are planned for 2024.³² One affiliate transactions audit in 2022 covered all operating companies.

“There have been no independent audits of Service Company products requested by client companies.”³³

“Budgeted amounts are based on Service Company budgets which are reviewed and approved by multiple stakeholders including Networks leadership. Budgeted amounts are provided to the business for review and planning purposes. Invoicing at year end is based on actual expenses incurred by the service companies and not on budgeted amounts.”³⁴

“Variances between budgeted expense and actual expense is driven by changes in staffing levels that weren’t anticipated in the planning process, projects that were either delayed, deferred, or accelerated based on need. There is also an annual refresh of the cost causative drivers between the budgeting process and actual invoicing. This refresh involves updating the cost drivers for the previous year’s actual driver amounts (i.e., number of employees at each Client Company, number of vehicles at each client company). The refresh will change the allocation %s change for some services as the cost drivers change from year to year.”³⁵

- Avangrid claims that its SLA model strengths include the following:³⁶
 - The model has been implemented in all Iberdrola Group corporate services companies.
 - In line with Organization for Economic Co-operation and Development guidelines on Transfer Pricing between companies of the same group and new developments for multinationals.
 - Respecting arm’s length principle and local regulation.

³² DR 14 Supplement 1

³³ DR 597

³⁴ DR 894

³⁵ DR 894

³⁶ DR 28 Attachment 1

- Audited and validated by three of the “Big Four” Public Accounting firms. [not true 2018-present]³⁷
- Not challenged by Tax Authorities where the Group operates.
- Model reviewed during the New York Management Audit (NYMA), with no major challenges. [not true – see prior audit recommendation 8.2]³⁸
- Audited and validated by Avangrid Internal Audit. [not true specific to NYSEG and RG&E 2017-present, one 2022 audit included all operating companies SLAs]³⁹
- Global SAP intercompany model ensures traceability and homogeneous information treatment.
- Global SAP guarantees a fair allocation of costs based on drivers. [fair allocation is not guaranteed]⁴⁰

7. Avangrid’s use of the budgeting process (the Model) to execute the SLAs presents a number of deficiencies.⁴¹ Without improved SLAs governing the services AMC and ASC provide to their utility clients, charges are imprecise for the sake of accounting labor efficiencies. Cost allocations fail to charge clients for all services provided, irrespective of actual products/services volumes, or providing some clients with a higher level of service/quality than other affiliates.

- The SLAs include general descriptions of services to be provided to clients such as NYSEG and RG&E. The CAM provides a high-level list of functions and allocation cost drivers but does not provide charges based on the level of service descriptions.
- SLAs do not provide units of measure or volumes to be provided over specified time periods. Units of measure and volumes are necessary to reconcile levels of products and services provided – whether they are directly charged or allocated.
- SLAs do not provide any basis or comparisons of cost competitiveness. There is no information to determine whether Avangrid services charged are greater or less than other commercially available services.
- SLAs do not provide key performance metrics that pertain to provided services.
- SLAs do not provide measures of quality.
- SLA budget and invoice amounts do not true up volume of services, quality or cost at year-end.
- SLAs do not contain a review of agreed-upon service level expectations from the previous year, and expectations for the upcoming year. They also fail to provide a

³⁷ DR 12 Attachment 1. Only one audit firm provided external audit services to Avangrid Networks, Inc. from 2018 to 2023. Services included annual audits of consolidated financial statements including internal control and financial reporting. No specific identification of affiliate transactions, SLAs, NYSEG or RG&E.

³⁸ *Comprehensive Management and Operations Audit of New York State Electric & Gas Corporations and Rochester Gas and Electric Corporation*, Case 16-M-0610, November 2018.

³⁹ DR 14 Supplement 1 and Supplement 2

⁴⁰ DRs 28, 593, 594 and 893

⁴¹ DRs 593, and 892 through 895

detailed comparison of actual versus budgeted services/expenditures and merely invoice an amount at year-end without supporting information.

8. NYSEG and RG&E do not have ERM programs. Risk Management, including Credit and Market risk functions, currently are performed by Avangrid Networks. Avangrid Networks does not have a robust ERM program.

- Avangrid stated that its ERM program is structured under the General Risk Control and Management Policy. The program utilizes both a top-down and bottom-up approach to risk identification. The process includes utilizing multiple avenues, both internal and external, to identify risks that may impact Avangrid Networks, NYSEG and RG&E. These avenues include participation in multiple committees and cross-functional meetings, individual conversations at all levels of the organization, interviews with leadership, horizon-scanning and situational awareness of external events, and participation in utility-focused risk conferences.⁴²
- There are only two resources dedicated to the Avangrid Networks ERM program. Avangrid Networks is composed of multiple holding companies, eight regulated utilities, two transmission companies and ASC.
- The Avangrid Networks Risk Committee is supposed to provide input to management regarding risk appetite and tolerance.⁴³
 - According to COSO, risk appetite is the amount of risk an organization is prepared to take to achieve its goals. Risk tolerance is the amount of risk an organization is willing to take to meet aspirations.⁴⁴
 - Avangrid does not have a formal corporate risk appetite statement that defines the types and amount of risk the organization or its affiliates should be willing to accept in pursuit of value, nor does it clearly define risk tolerances that apply risk appetite to specific objectives, setting boundaries of acceptable performance variations.⁴⁵
- Risk identification is an informal “top-down/bottom-up” process.
 - The risk management team holds quarterly meetings with OPCO CEOs and Avangrid Networks’ executive leadership on an individual basis to identify risks for the Key Risk Register. These meetings are characterized as an “open dialogue” with executives.⁴⁶ No formal meeting minutes exist.⁴⁷
 - Risks are also identified as part of Risk Management’s participation in various committees.⁴⁸ As part of regular risk committee discussions, Committee members

⁴² DR 16

⁴³ DR 27 Attachment 1.

⁴⁴ The Committee of Sponsoring Organizations of the Treadway Commission (COSO) is an organization that develops guidelines for businesses to evaluate internal controls, risk management, and fraud deterrence. COSO, “Risk Appetite — Critical to Success: Using Risk Appetite to Thrive in a Changing Word,” May 2020.

⁴⁵ IR 29

⁴⁶ IR 29.

⁴⁷ DR 812.

⁴⁸ DR 554 Attachment 1.

address current issues, along with those that are new or emerging.⁴⁹ However, no meeting minutes are captured during these meetings.⁵⁰

- Risk-identification sources often are employees and considered “bottom-up.” There are no records of inputs from employees to the ERM risk-identification process.

“Each risk contained on the Key Risk Register is a result of detailed conversations regarding the risk exposure, likelihood, and the appetite / tolerance of the business as it relates to that risk. Separate documents are not maintained regarding these conversations.”⁵¹

- Risk-quantification is conducted through informal, scenario-based quantification and, depending on the risk, Monte Carlo simulation.
 - Based on input from executive leadership, Risk Management seeks details to qualify and quantify risk for the Key Risk Register from subject matter experts to identify scenarios and gauge risk impact.⁵² There are no formal minutes of these meetings.⁵³
 - Monte Carlo simulation is used to predict potential outcome scenarios for reliability metrics, estimated meter reads, rate case metrics (i.e., ROE, Equity Ratio, etc.), and other metrics.
- Risks included in Avangrid Networks’ Key Risk Register largely comprise unmet regulatory obligations.⁵⁴
- Avangrid Networks’ Key Risk Register includes updates of mitigation activities.⁵⁵
- Risk-mitigation analysis using “bowtie” or other means is not consistently performed. There are limited resources to perform root cause analysis and develop effective mitigation treatments through the risk life cycle.
 - Avangrid performs risk-mitigation analysis on an ad-hoc basis.
 - When substantive risk mitigations are developed, they follow a one-size-fits-all approach. Mitigations are not designed to be applied as variations in the risk profile are identified.
 - Avangrid has stated that it aspires to implement a consistent and formal analysis of risk and risk mitigation.⁵⁶
- Avangrid does not use Key Risk Indicators (KRI) to report on enterprise risks or apply corrective actions throughout the risk life cycle. Many KRI examples provided by

⁴⁹ DR 555.

⁵⁰ DR 811.

⁵¹ DR 899.

⁵² IR 29.

⁵³ DR 812.

⁵⁴ DR 855 Attachments 1 to 30. Due to Avangrid confidentiality concerns, detailed information was removed.

⁵⁵ DR 855 1 to 30. Due to Avangrid confidentiality concerns, detailed information was removed.

⁵⁶ DR 810 Attachments 1 and 2. IR 29.

Avangrid were, in fact, Key Performance Indicators (KPI) that are lagging metrics.⁵⁷ KRIs are metrics that organizations use to provide an early signal of changing risk exposures within the enterprise, while KPIs are concerned with measuring performance.⁵⁸

- NorthStar requested all corporate and department risk registers. Avangrid responded that it generates a single Key Risk Register that encompasses all Avangrid Networks' subsidiaries, including any risks specific to NYSEG and RG&E.⁵⁹ This response was misleading.
 - Further discussion revealed that the Operational Technology / Operational Smart Grids (OT/OSG) group recently implemented a departmental risk function that coordinates with Avangrid Networks' Risk Management.⁶⁰ This is the only documented department risk register.
- The ERM group provides input to select planning processes.
 - Avangrid Networks' ERM group provides input to the Audit and Compliance Committee for the annual audit plan development process.
 - ERM does not provide input into Strategic Planning or Capital Planning processes.⁶¹
- The Avangrid Networks ERM program has not been reviewed for effectiveness or maturity.⁶²

9. Risks identified during the ERM process are not clearly linked to internal controls for ongoing monitoring.

- Avangrid noted that major risk exposure is reviewed with management, the internal auditor and the independent auditor, along with steps management has taken to monitor and control such exposures.⁶³ However, there is no clear process to link enterprise risks to controls, such as the following:
 - Mapping enterprise risk to existing controls and performing a gap analysis of risk without corresponding controls.
 - Monitoring the effectiveness of controls related to enterprise risk.
 - Evaluating control testing and findings to determine if any findings impact enterprise risk.

⁵⁷ DR 856.

⁵⁸ Committee of Sponsoring Organizations of the Treadway Commission, Developing Key Risk Indicators to Strengthen Enterprise Risk Management - Thought Leadership in ERM. M. Beasley, B. Branson, and B. Hancock. December 2010.

⁵⁹ DR 32.

⁶⁰ IR 29 and DR 855.

⁶¹ IR 29.

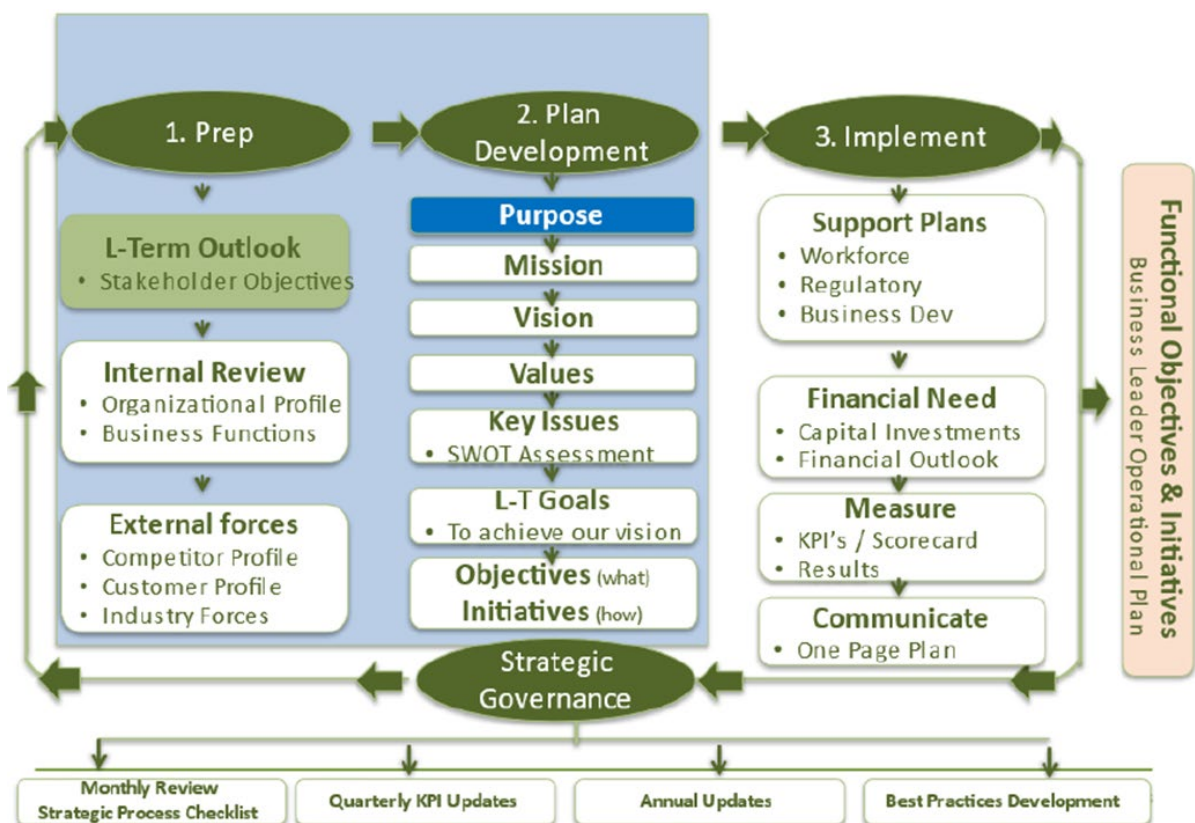
⁶² DR 553.

⁶³ DR 900.

10. Avangrid has a strategic planning process and resulting strategic plans. NYSEG and RG&E do not have strategic planning processes or strategic plans.

- The most recent management audit found that strategic planning was not performed at the utility level.⁶⁴ The strategic planning process and resulting strategic plans are for Avangrid Networks.⁶⁵
- The strategic planning process for Avangrid Networks has not materially changed since the most recent management audit. Avangrid Networks leadership team is responsible for executing the strategic planning process with support from other business leaders.⁶⁶
- Avangrid Networks' strategic planning process is provided in **Exhibit III-8**. The process identifies company direction and includes developing long-range goals and strategic objectives focused on the Avangrid Vision, Purpose and Values. NYSEG and RG&E adopted the Avangrid Inc. purpose and values.⁶⁷

**Exhibit III-8
Avangrid Networks' Strategic Planning Process**



⁶⁴ Comprehensive Management and Operations Audit of New York State Electric & Gas Corporation and Rochester Gas and Electric Corporations, Case 16-M-0610, Overland Consulting, November 2018.

⁶⁵ DR 13

⁶⁶ DR 13, 17, 25, 210, 1213 and 1214

⁶⁷ DRs 17 and 24.

Source: DR 17.

- The Avangrid strategic planning process includes three phases – Preparation, Development, and Implementation.
 - Strategic planning starts at the Avangrid, Inc. level with the update of a Long-term Outlook (LTO). The LTO is Avangrid Inc.’s 10-year financial plan that is updated annually. The LTO establishes Avangrid, Inc.’s commitment to shareholders/investors and forms the basis for strategic and business planning.⁶⁸ The preparation phase also considers industry trends, an external environmental assessment, and unique jurisdictional stakeholder needs.⁶⁹
 - The development phase establishes the organization’s purpose, mission and values, and identifies key issues through a SWOT analysis. Avangrid Networks has adopted the purpose and values of Avangrid, Inc., while leadership has developed a separate mission and vision.⁷⁰
 - The implementation phase involves development of resource plans, financial budgets, KPIs and performance scorecards.
- The Avangrid LTO sets earnings and growth targets that Avangrid Networks uses to develop its strategic plan.⁷¹ These targets are then shared with the regulated utilities, including NYSEG and RG&E.⁷² Growth in the rate base at Avangrid Networks’ regulated utilities is a significant earnings driver for Avangrid, Inc.
 - Since 2015, rate base at Avangrid Networks’ regulated utilities has grown over 60 percent (7 percent Compound Annual Growth Rate (CAGR)), while adjusted net income has grown over 70 percent (6 percent CAGR).⁷³
 - Avangrid, Inc.’s LTO kickoff meeting includes a prioritization and coordination phase that occurs among business areas with input and oversight from the regulatory team, business and investment planning teams, and others – before ultimately being reviewed and prioritized by the operating company presidents.⁷⁴ No changes were made by the NYSEG and RG&E President during the audit period.⁷⁵
 - Avangrid, Inc.’s LTO is not approved by the Avangrid Networks Board of Directors or the NYSEG and RG&E Boards of Directors.⁷⁶
- Avangrid Networks’ latest strategic plan is dated January 2022. The 2022-plus Strategic Plan identifies four strategic objectives with specific outcomes the company

⁶⁸ DRs 13 Attachment 1, 17, 214, 1239 Attachments 1 through 4, and 1240.

⁶⁹ DR 13 Attachment 1.

⁷⁰ DRs 13 Attachment 1 and 24.

⁷¹ DRs 13 Attachment 1, 17, 1239 Attachments 1-4, 1241.

⁷² DR 1242

⁷³ Avangrid April 2024 Fact Book. For more information, see Chapter IV – Budget and Finance.

⁷⁴ DR 214.

⁷⁵ DR 1242.

⁷⁶ DR 1254, 1255 and 1256.

intends to accomplish over the next 5-plus years. New York objectives and outcomes are summarized in **Exhibit III-9**.⁷⁷

Exhibit III-9 Avangrid Networks 2022-Plus Strategic Plan - New York Strategic Themes, Objectives and Outcomes.



Source: DR 13 Attachment 1.

- Avangrid stated that NYSEG and RG&E objectives are defined and approved by the Board of Directors.⁷⁸ A review of NYSEG and RG&E Boards of Directors meeting minutes in 2021 and 2022 do not indicate the New York objectives in **Exhibit III-9** were defined, approved, or discussed.⁷⁹
- Avangrid Networks’ 2022-plus strategic plan characterizes NYSEG and RG&E as a “regional utility,” without unique characteristics such as geography, environment, infrastructure or operating characteristics.
- Avangrid Networks’ 2022-plus strategic plan was not reviewed or approved by the Avangrid Networks Board of Directors, or the NYSEG and RG&E Boards of Directors.⁸⁰

⁷⁷ DR 13 Attachment 1.

⁷⁸ DR 259 Supplement 1 Attachment 1.

⁷⁹ DR 5 Attachment 2.

⁸⁰ DRs 5 Attachments 1 and 2 and 1257.

11. The Avangrid, AMC and ASC governance structure and executive management approach do not formally demonstrate commitment to New York regulatory objectives including CLCPA goals of the regulated utility subsidiaries such as NYSEG and RG&E.

- As described previously, NYSEG and RG&E provide minimal corporate governance.
- A presentation and discussion of the 2022 regulatory matters, including CLCPA, was included in the November 1, 2022, NYSEG and RG&E Boards of Directors meeting.⁸¹
- The corporation's key initiatives related to environmental, health and safety, quality of service reliability metrics and an update on the CLCPA were provided to the Avangrid Networks Board of Directors on April 11, 2023.⁸² No additional details are available.
- Avangrid Networks' strategic plan was issued in January 2022 and identifies strategic objectives for the next five years. Avangrid Networks has stated that strategic plans are reviewed annually and adjusted as needed to recognize pertinent changes.⁸³ There were no updates to the 2022-plus Avangrid Networks strategic plan during the audit period.⁸⁴
 - Avangrid Networks' 2022-plus strategic plan references the state's CLCPA goals and objectives for Greenhouse Gas Emissions and Renewables. Avangrid, Inc. has stated that while Avangrid Networks strategic plans do not highlight specific elements reflecting relationships to regulatory compliance, this particular strategic plan is designed with the understanding that capturing regulatory compliance is within its framework.
 - The CLCPA sets a statewide goal of 185 trillion British thermal units (TBtu) of cumulative energy efficiency savings through 2025. NYPSC orders in Case 18-M-0084 set utility-specific energy efficiency savings targets which, collectively, amount to the state utilities' 31 TBtu share of the statewide goal, as proposed in the New Efficiency: New York whitepaper from April 2018.⁸⁵ CLCPA also sets 35 percent minimum investment in Disadvantaged Communities (DAC). Avangrid Networks' 2022-plus strategic plan does not address NYSEG's and RG&E's proportional energy efficiency savings or DAC investment goals and lacks specific, measurable targets.⁸⁶ In August 2024, Avangrid filed two reports related to CLCPA on behalf of NYSEG and RG&E. The first report was a supplemental information request providing data on emission reductions associated with certain programs (e.g., VDER, EV, EE and Heatpumps, etc). A second report was filed

⁸¹ DR 5 Attachments 2

⁸² DR 5 Attachment 1.

⁸³ DR 17.

⁸⁴ DR 360.

⁸⁵ See Case 18-M-0084, In the Matter of a Comprehensive Energy Efficiency Initiative, Orders December 13, 2018 and January 16, 2020. Also see, New Efficiency: New York, April 2018, NYSERDA.

⁸⁶ DR 13 Attachment 1.

pursuant to the 2023 Joint Settlement demonstrating NYSEG and RG&E progress to meet CLCPA investments in DAC.⁸⁷

- Non-Wires Alternatives (including energy storage) and EV Programs for New York are discussed in the 2022-plus strategic plan.⁸⁸ NYSEG and RG&E Heating and Electrification Programs are assigned budgets from 2021 to 2023 only, not the entire strategic planning period.⁸⁹
- Avangrid Networks has stated that New York regulatory matters are discussed in separate Regulatory, Planning, Operations and Customer Council meetings.

“For NY, planning matters are discussed by NYSEG/RGE President via the monthly Regulatory, Planning, Operations and Customer Council meetings for NY (RPOCC).”⁹⁰
- NorthStar found that the RPOCC does not exist for New York; instead, there is a forum called the New York President’s Leadership Meeting.⁹¹
- The New York President’s Leadership Meetings have agendas but do not record meeting minutes and, for the most part, do not produce meeting materials. Meeting agendas from 2022 to 2024 highlight New York rate cases and New York financials/negative revenue adjustments. They do not include specific NYSEG or RG&E goals, objectives or specifics related to CLCPA.⁹²
- Avangrid stated that it has developed a plan for CLCPA and assigns specific objectives by business area within NYSEG and RG&E.⁹³ This statement is misleading, due to the corporate structure. **Exhibit III-10** provides the list of Climate Action Council (CAC) Scoping Plan topics, topic area leads, and company affiliation. Most topic area leads are affiliated with ASC or AMC – only two leads represent NYSEG, and none from RG&E.

⁸⁷ DR 1212 Supplement Attachments 1-3 and Fact Verification.

⁸⁸ NWAs are discussed in Chapter V – Electric Operations.

⁸⁹ DR 13 Attachment 1.

⁹⁰ DR 13.

⁹¹ DR 1204.

⁹² DR 1204 Attachments 1 to 20.

⁹³ DR 21.

Exhibit III-10
CAC Scoping Plan Topic, Avangrid Resource Leader, and
Company Affiliation

Scope Topic	Topic Area Lead	Company Affiliation
Transportation	Program Director Smart Grids	Avangrid Service Company
Buildings	Director Customer Programs & Projects	Avangrid Service Company
Electricity	Senior Vice President - Operations	Avangrid Service Company
Industry	Director Customer Programs & Projects	Avangrid Service Company
Waste	Vice President – Sustainability	Avangrid Management Company
Economywide Strategies	Senior Director – Energy Services	NYSEG
Gas System Transition	VP- Gas Engineering and Operations	Avangrid Service Company
Local Government	Director - Govt & Community Relations	NYSEG
Adaption and Resilience	Vice President - Planning & Coordination	Avangrid Service Company

Source: DR 1 and 26.

Note: Resource Leader for Agriculture and Forestry was not included in the Avangrid organization chart. Land Use was not assigned at the time of the November 2023 audit orientation presentation.

- Avangrid’s method of tracking and monitoring DAC spending is based on previous projects where existing assets are located. Avangrid then claims these investments as a benefit to DACs. The result is not part of a programmatic approach but is a retrospective review of what can be claimed.
 - Avangrid states that its Climate Change Resiliency Program (CCRP) outlines efforts that have been taken and will be taken to safeguard infrastructure from climate change and provide uninterrupted service to customers.

“Many of these assets are located in disadvantaged communities and thus support the CLCPA’s Disadvantaged Community requirements.”⁹⁴
 - The same method is used to claim DAC investments related to Gas Transition.

“The Companies are also undertaking Utility Thermal Networks pilots (UTNs) to provide an opportunity to demonstrate the potential to transition from gas to clean energy alternatives. Some of the UTNs are located in Disadvantaged Communities and thus support the CLCPA’s Disadvantaged Communities requirement.”⁹⁵
- Avangrid claims to identify capital projects within disadvantaged communities as part of its capital planning processes and includes listings of these projects in its annual five-year plan.⁹⁶ However, Avangrid also stated that it is still working on ways to incorporate relevant components of the CLCPA into its capital project prioritization process.⁹⁷

⁹⁴ DR 21.

⁹⁵ DR 21.

⁹⁶ DR 595.

⁹⁷ DR 238

12. Avangrid makes budget decisions prioritizing corporate earnings targets. NYSEG and RG&E executive management and Boards of Directors do not make resource allocation decisions.

- NorthStar’s review of NYSEG’s and RG&E’s Boards of Directors meeting minutes indicates that the Boards are typically in listening mode, not decision-making mode.⁹⁸
- As noted above in Conclusion 6, NYSEG and RG&E do not approve Service Company budgets. NYSEG and RG&E budget amounts are based on Service Company budgets, which are reviewed and approved at a corporate level. Budgeted amounts are provided to the business for planning purposes and as an informational reference. Furthermore, there were no changes from the budgeted amounts requested by RG&E and NYSEG for 2022 and 2023.
- NYSEG and RG&E Boards of Directors do not review and approve the Avangrid, Inc. LTO. NYSEG and RG&E executives do not make adjustments to the Avangrid, Inc. LTO. Rather, Avangrid stated that NYSEG and RG&E leadership have a “strong presence” in investment planning process, regulatory rate case assumptions, and other initiatives⁹⁹
- During the capital budget process, NYSEG and RG&E personnel serve as part of the Investment Review Group (IRG). The role of the IRG is to review and approve investments for inclusion in the capital plan and to provide executive visibility, collaboration and input into significant investment plan proposals and changes. The IRG does not change or adjust capital program/project scope or costs. For more information, see **Chapter VII – Project Management**.
- The annual Investment Planning project prioritization process concludes with a “President’s Review” stage. While NYSEG and RG&E leadership reserve the right to make adjustments at this point, NorthStar did not observe any documented adjustments from the President’s review. For more information, see **Chapter VII – Project Management**.
- NYSEG and RG&E do not make resource decisions during the IT organization’s Annual Demand Portfolio process. Avangrid’s IT project assessments and prioritizations for the Annual IT Plan are performed by IT leadership, SMEs and the Business. For more information, see **Chapter XI – Information Systems**.
- For more information on budgeting and earnings estimates, see **Chapter IV – Budget and Finance**.

⁹⁸ DR 5 Attachment 2.

⁹⁹ DRs 1254, 1255 and 1256.

13. NYSEG and RG&E do not have comprehensive succession strategies or plans. Succession planning candidates are noted only for select positions in the NYSEG and RG&E Office of the President.

- NYSEG and RG&E state in recent rate case testimony that:

“We view our talent needs strategically to ensure that we can put the right people in the right roles quickly and without creating gaps in business continuity. In addition, our succession planning process helps us to manage recruiting costs and time to fill important positions, giving us insight necessary to develop talent, increase employee readiness, and engage employees.”¹⁰⁰

- NYSEG’s and RG&E’s succession plan “strategy” is solely composed of two programs: an Apprenticeship Program for entry level employees looking to join a trade, and the Engineering Development Program, a rotational program to develop an engineering talent pipeline.
- Management roles and responsibilities are organized and performed by the unregulated affiliates – AMC and ASC – as NYSEG and RG&E management positions are minimal. Avangrid does not maintain specific NYSEG and RG&E succession data for management positions within the New York companies.¹⁰¹ Succession plans are kept for only select positions in the NYSEG and RG&E Office of the President, such as the NYSEG and RG&E Chief Executive Officer, Director of Government and Community Relations, Senior Director of Energy Services, VP State Government Relations, and Senior Director of Transmission Services. No succession plan exists for the Director of Business Services.
- Avangrid filed a Form 8K with the US. Securities and Exchange Commission on May 1, 2024, noting that the Avangrid Networks’ President and CEO would leave the company on July 5, 2024.¹⁰²
- Patricia Nilsen, NYSEG and RG&E President and CEO, currently holds the following roles within the Avangrid corporate family.¹⁰³ All of these positions and responsibilities are considered permanent.
 - RGS Energy Group President, Chief Executive Officer and Controller
 - Avangrid Service Company: President – New York¹⁰⁴
 - New York State Electric & Gas: Member, Board of Directors
 - New York State Electric & Gas: President and Chief Executive Officer

¹⁰⁰ Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Case 22-E-0317 New York State Electric & Gas Corporation for Electric Service, Workforce, Compensation, and Benefits Panel. Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Case 22-E-0319 Rochester Gas & Electric Corporation for Electric Service, Workforce, Compensation, and Benefits Panel.

¹⁰¹ DR 19.

¹⁰² DR 1227 Attachment 4

¹⁰³ DR 1227

¹⁰⁴ Avangrid’s DR response #1227, is contradicted by DR responses #1226 and #1224: Mr. Joseph A. Purington serves as the President of Avangrid Service Company (ASC) and a member of the ASC Board of Directors.

- Rochester Gas and Electric: Member of the Board of Directors
- Rochester Gas and Electric: President and Chief Executive Officer

D. RECOMMENDATIONS

1. Revise the Avangrid, NYSEG and RG&E organization and governance to comply with each element of the NYSPSC Order Adopting Staff Report and Approving Reorganization – Case 12-M-0066, et al. Provide a report to DPS demonstrating how each element has been satisfied.
2. Develop SLAs that include detailed descriptions of services to be provided to clients such as NYSEG and RG&E.
3. Revise and update the CAM to provide a detailed list of functions and charges based on the level of products and services descriptions.
4. Develop SLAs that define units of measure and volumes of products and services to be provided over specified time periods. Units of measure and volumes are necessary to reconcile levels of services provided – whether they are directly charged or allocated.
5. Provide comparisons of cost competitiveness between SLA products and services versus third-party providers to demonstrate whether Avangrid services charged are greater or less than other commercially available services. Report this information in SLAs and implementation plans. Provide updates to the extent information changes.
6. Report SLA cost competitiveness to DPS on an annual basis.
7. Develop and include comprehensive SLA key performance metrics that pertain to all products and services provided. Report this information in SLAs and implementation plans. Provide updates to the extent information changes.
8. Provide measures of quality for SLA products and services.
9. Establish SLA economic performance premiums and penalties for all products and services provided.
10. Develop and report SLA true-up for budget amounts and invoice amounts based on actual volume of services, quality and cost at year-end.
11. Provide a review of SLA agreed-upon service level expectations from the previous year, plus expectations for the upcoming year.
12. Provide a detailed comparison of actual versus budgeted services/expenditures and invoice an amount at year-end with supporting variance information.
13. Develop strategic planning processes and strategic plans for NYSEG and RG&E, respectively. The resulting plans must focus on the unique issues impacting each utility, with specific goals, objectives, and performance metrics that represent the strategic,

operating, and regulatory environment of each utility. See **Chapter XIII- Performance Management.**

14. Have an independent, third-party firm specializing in ERM maturity assessments conduct a comprehensive study of Avangrid's ERM program using industry accepted standards. Review ERM Maturity Assessment RFP with DPS prior to issuance to obtain feedback. Review vendor selection with DPS. Upon completion of the study, provide a full copy of results and plans to implement recommendations with DPS.
15. Develop a comprehensive and fully resourced ERM program for Avangrid Networks, NYSEG, and RG&E incorporating all recommendations from the third-party maturity assessment. Furthermore, the ERM program should be aligned with internal controls such that risks can be monitored on a continuous basis. Internal audits of ERM programs, processes, and risk registers must be performed at least on a biennial basis and documented and maintained for future evaluation.

IV. BUDGET AND FINANCE

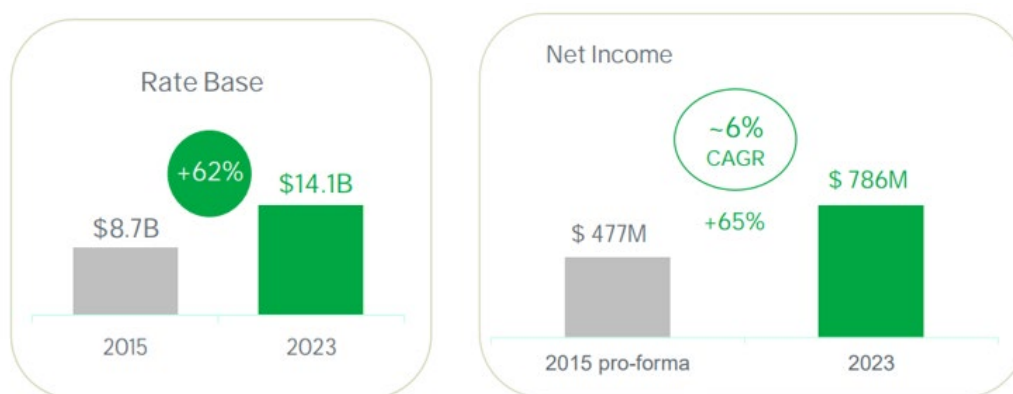
In the following review of Avangrid’s budgeting and finance processes, NorthStar evaluated the capital budgeting process, pension and other post-employment benefits (OPEBs), and debt-management practices.

A. BACKGROUND

An important part of Avangrid’s business strategy involves capital projects. Networks plans to invest approximately \$13 billion from 2024 to 2028 to upgrade and expand electricity and natural gas transmission and distribution infrastructure through its portfolio of regulated utilities. NYSEG’s portion of this investment is approximately \$1 billion on projects including the Advanced Meter Infrastructure Project, the BES Program, the Distribution Line Inspection Repairs Program, the Grid Automation Program, the Transmission Line Asset Condition Replacements Program, CLCPA transmission projects, the Storm Resiliency Program, Make Ready, the Pole Replacement Program and gas distribution mains and leak-prone main replacements. In addition, RG&E’s portion of this investment is \$422 million over the next 12 months on programs including the Advanced Meter Infrastructure Project, the BES Program, the Webster Area Reliability Program, the Pole Replacement Program, the Grid Automation Program, the Storm Resiliency Program, and gas distribution mains and leak-prone main replacements.¹

As shown in **Exhibit IV-1**, Avangrid has substantially grown its rate base and earnings since 2015. A comprehensive and thorough capital budgeting process is imperative to ensure that this growth remains prudent and in the best interest of ratepayers.

Exhibit IV-1
Rate Base and Earnings Growth



Source: Avangrid April 2024 Factbook. https://s24.q4cdn.com/489945429/files/doc_financials/2024/q1/FINAL-April-2024-FactBook.pdf. Accessed September 12, 2024.

¹ Avangrid 2023 10K. Reference to the time period of “the next 12 months” is starting as of the 10K issuance date of 2/22/2024.

Avangrid expects to meet its long-term capital requirements through the use of cash balances, credit facilities, cash from operations, long-term borrowings and new equity capital. As of December 31, 2023, Avangrid Networks held \$7,791 million in debt, including the current portion thereof, consisting of first mortgage bonds, senior unsecured notes, tax-exempt bonds and other forms of debt. Networks' regulated utilities are required by regulatory order to maintain a minimum ratio of common equity to total capital that is tied to the capital structure used in the establishment of revenue requirements. Pursuant to these requirements, NYSEG and RG&E must maintain a minimum equity ratio equal to the ratio in its currently effective rate plan or decision measured using a trailing 13-month average.² NYSEG and RG&E's capital structure is forecasted to be 52 percent for rate years one through three (revenue requirement for forecast years ending April 30, 2024, 2025, 2026).³ As a result, whether the companies use the most cost-effective means to issue securities can have a significant impact on customer rates. NYSEG and RG&E's outstanding debt balances are illustrated in **Exhibit IV-2**.

Exhibit IV-2
Long-Term Debt as of March 31, 2024

Entity	Total Debt (\$thousands)
NYSEG	\$2,885,469
RG&E	\$1,736,509

Source: Avangrid April 2024 Factbook. https://s24.q4cdn.com/489945429/files/doc_financials/2024/q1/FINAL-April-2024-FactBook.pdf. Accessed September 12, 2024.

NYSEG and RG&E sponsor defined benefit pension plans that cover the majority of employees as shown in **Exhibit IV-3**. The companies also provide health care and life insurance benefits through various post-retirement plans for eligible retirees.⁴ In accounting for pension and other post-retirement benefit plans, or the Avangrid plans, Avangrid has made certain assumptions regarding the valuation of benefit obligations and plan asset performance. Primary assumptions include the discount rate, the expected long-term return on plan assets, health care cost trend rates, mortality assumptions, demographic assumptions and other factors.⁵

² Avangrid 2023 10K

³ 2023 NYSEG/RG&E Order Approving Electric & Gas Rate Plans in Accordance with Joint Proposal. https://s24.q4cdn.com/489945429/files/doc_downloads/2023/10/final-joint-proposal-10-12-23.pdf

⁴ 2023 YE Financials – All Companies. https://s24.q4cdn.com/489945429/files/doc_downloads/2024/04/ye-23-combined-subsiary-financials.pdf

⁵ Avangrid 2023 10K

Exhibit IV-3
Obligation and Funded Stats as of December 31, 2023

Entity	Topic	Pension Benefits (\$000)	Postretirement Benefits
NYSEG	Benefit Obligation	\$1,159,963	\$94,493
	Fair Value of Plan Assets	\$1,114,333	\$20,238
	Funded Status	\$(45,630)	\$(74,255)
RG&E	Benefit Obligation	\$243,974	\$43,362
	Fair Value of Plan Assets	\$184,499	\$0
	Funded Status	\$(59,475)	\$(43,362)

Source: 2023 YE Financials – All Companies.

https://s24.q4cdn.com/489945429/files/doc_downloads/2024/04/ye-23-combined-subsiary-financials.pdf

Accessed September 12, 2024.

B. AUDIT SCOPE ITEMS

- Evaluate modifications to capital budgeting and operations and maintenance budgeting processes since previous management audit.
- Assess Pension & Other Post-Employment Benefits plan asset investment strategies, considering risk, ability to meet obligations, and diversification of assets.
- Determine whether the Companies are using the most cost-effective means to issue securities.

C. FINDINGS AND CONCLUSIONS

1. Budgeting processes have not meaningfully changed since the prior audit, Avangrid still follows bottom-up budgeting processes with input from Avangrid department heads and functional areas. Input from senior management and the board of directors largely relates to total capital project spending, that prioritizes corporate earnings.

- Avangrid has stated that it develops budgets at the business unit/program level. Capital needs are gathered as part of the capital planning governance process and ultimately are presented holistically to operating company presidents for prioritization based on five categories: customer focus, safety, reliability, asset condition, and strategic and efficiency (for more information, see **Chapter VII – Project Management**). Total available capital investment funds are informed by the level allowed in rates. Avangrid’s annual budgets are developed via a “bottom up” process.⁶

- The Avangrid budgeting process focuses on earnings. The company has stated that:

“Based on its initial budget, Avangrid establishes annual earnings estimates, which are ranges of forecasted net income and earnings per share for the year. In addition, the budget is reviewed three times per year through the specific revisions or “REV” process. Each subsequent quarter, based on updates to the Avangrid budget through the

⁶ DR 209

REV process, Avangrid will either affirm or revise this range. Avangrid’s objective is to provide a range where it expects its final earnings results for the year to land, based on its best estimates, including potential cost savings and other risks and opportunities that could drive where the results will end up in this range.”⁷

- Avangrid provides periodic reporting to senior management on capital project budgets compared to actuals. This reporting contains variance explanation for business units/projects that are operating under or over projected budgets.⁸ **Exhibit IV-4** provides a summary of such reporting:

Exhibit IV-4
Capital Investment Governance Report (\$millions)

Entity	YTD Actuals	YTD Plan	Variance
NYSEG (June 2023)	\$893.5	\$780.5	\$113.0
RG&E (June 2023)	\$427.5	\$375.9	\$51.6
NYSEG (December 2022)	\$723.0	\$776.2	\$(53.2)
RG&E (December 2022)	\$358.7	\$379.0	\$(20.3)
NYSEG (December 2021)	\$743.3	\$705.6	\$37.7
RG&E (December 2021)	\$397.8	\$382.0	\$15.8
NYSEG (December 2020)	\$696.9	\$653.0	\$43.9
RG&E (December 2020)	\$388.3	\$436.7	\$(48.4)
Total	\$4,629.0	\$4,488.9	\$140.1
		Variance	3%

Source: DR 211. (Amounts are for trailing 12 months from the bracketed dates).

- The budgeting process is tracked at the business unit/program level, with totals and variances reported to senior management. As shown in the table above, Avangrid has monitored and managed total capital within a moderate variance of 3 percent.
- The fundamentals of the O&M budgeting process has not changed meaningfully from the last management audit. O&M budgets are compiled based on the business needs and assumptions of the business leads for the various functions within the Companies. Additional oversight has been implemented through the “REV” process. the budget is reviewed three times per year through the specific revisions or “REV” process. Each subsequent quarter, based on updates to the Avangrid budget through the REV process, Avangrid will either affirm or revise this range.⁹
- Although Avangrid follows a bottom-up budgeting process, the business leads compile the budget needs and key assumptions. These inputs are then consolidated into a comprehensive budget. The budgeting process allows flexibility and discretion for the

⁷ DR 209

⁸ DR 211

⁹ DR 209

business leads to compile their budgets. As a result, the budgeting process is not consistently zero based.¹⁰

2. Avangrid does not budget for individual projects within mass asset categories, nor does a process exist to evaluate reasonableness and consistency of individual project costs.

- As described above, Avangrid budgets are managed at the business unit/program level. These units/projects may relate to large programs to construct or replace individual mass assets. Individual projects within the larger program are not budgeted for or tracked. Instead, the companies monitor total spending of a program, as described above.¹¹
- Although monitoring costs at the business unit/program level is important, NorthStar did not find any evidence that Avangrid budgets for individual projects or monitors prudence and/or reasonableness of costs for individual mass asset projects.

3. Plant accounting records contain inaccurate unit cost information. As a result, historic unit costs are not a reliable metric to monitor whether current projects are delivered at reasonable and consistent costs.

- Understanding historical unit costs is an important metric to determine if individual capital projects are being managed prudently and consistently. The companies' plant accounting data lack granular detail to allow for calculating a precise unit-cost metric by asset type.
- **Exhibit IV-5** below summarizes total quantity and dollar value of 13 – 20kV overhead lines:

Exhibit IV-5
FERC Account 364 - Summary Data

Entity	FERC Acct	Class Description	Quantity	Value	Unit Cost
NYSEG	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	499,832	\$826,081,515	\$1,653
RG&E	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	102,577	\$239,612,969	\$2,336

Source: DR 128

- Anomalous data appear within plant records that impact unit costs outlined above. For example, both companies show significant assets with a quantity of zero. See **Exhibit IV-6** below for a summary of plant assets with zero quantities:

¹⁰ DR 209

¹¹ DR 658

Exhibit IV-6
FERC Account 364 - Summary Data

Entity	FERC Acct	Class Description	Quantity	Value	Unit Cost
NYSEG	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	0	\$47,889,729	N/A
RG&E	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	0	\$62,189,444	N/A

Source: DR 128

- Furthermore, many assets within the plant accounting data have unusually high or low unit costs. An example of these assets is demonstrated in **Exhibit IV-7** below:

Exhibit IV-7
FERC Account 364 - Summary Data

Entity	FERC Acct	Class Description	Quantity	Value	Unit Cost
NYSEG	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	5	\$ 0.37	\$0.07
NYSEG	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	1	\$2.30	\$2.30
NYSEG	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	2	\$7.51	\$3.76
NYSEG	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	1	\$0.58	\$0.58
NYSEG	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	1	\$4.75	\$4.75
NYSEG	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	5	\$398,282	\$79,656
NYSEG	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	1	\$220,206	\$220,206
NYSEG	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	1	\$223,424	\$223,424
NYSEG	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	1	\$250,477	\$250,477
NYSEG	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	9	\$4,364,949	\$484,994
RG&E	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	1	\$0.28	\$0.28
RG&E	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	2	\$7.05	\$3.53
RG&E	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	4	\$8.32	\$2.08
RG&E	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	1	\$1.06	\$1.06
RG&E	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	2	\$3.18	\$1.59
RG&E	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	1	\$394,463	\$394,463
RG&E	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	1	\$736,563	\$736,563
RG&E	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	1	\$1,362,591	\$1,362,591

RG&E	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	1	\$193,639	\$193,640
RG&E	(364) Poles, Towers, and Fixtures	OVERHEAD LINES 13-20KV	3	\$473,479	\$157,826

Source: DR 128

- The tables above are examples based on a selection of line items within the FERC account 364 (poles, towers, and fixtures). However, a review of plant accounting data suggests there are similar inaccuracies and anomalies within other FERC accounts.

- Reliable unit costs would provide sound metrics for capital budgeting. Without reliable historic unit costs, the budgeting process is constrained in evaluating the reasonableness and consistency of capital costs.

4. Avangrid service companies' complexity prohibits transparency of allocated costs. Therefore, it is difficult to determine if allocated charges to the New York utilities are based on cost causation.

- Avangrid operating companies reporting of affiliate transactions within the FERC Form 1 is specific to each entity based on the corporate structure and regulatory rules of that entity and jurisdiction¹², as illustrated in **Exhibit IV-8** below:

Exhibit IV-8
Transactions with Associated (Affiliated) Companies

Year	NYSEG	RG&E	CMP	UI & UIL Holdings ¹³
2022	\$106,704,683	\$53,605,911	\$38,443,906	\$67,039,719
2021	\$96,837,805	\$46,919,224	\$36,942,513	64,933,324
2020	\$87,214,930	\$42,766,321	\$37,794,510	Note 1
2019	\$80,535,489	\$39,796,399	\$36,046,730	Note 1
2018	\$79,685,062	\$40,148,047	\$34,572,475	Note 1
% Increase 2018- 2022	34%	34%	11%	Note 1
% Increase 2021 – 2022	10%	14%	4%	3%

Source: FERC Form 1 page 429 for each respective utility and year

Note 1: UI's Transactions with Associated (Affiliated) Companies was blank for years 2018 – 2019.

- The complexity of Avangrid's corporate structure inhibits transparency of allocated costs from various affiliates. As demonstrated in **Exhibit IV-9** below, two entities are positioned above the New York utilities (Avangrid, Inc and Avangrid Networks Inc.) – these entities charge NYSEG and RG&E for services. In addition, another holding company sits above the Connecticut operating companies (UIL Holdings). As a result of this structure NYSEG and RG&E are receiving goods or services from 13 different

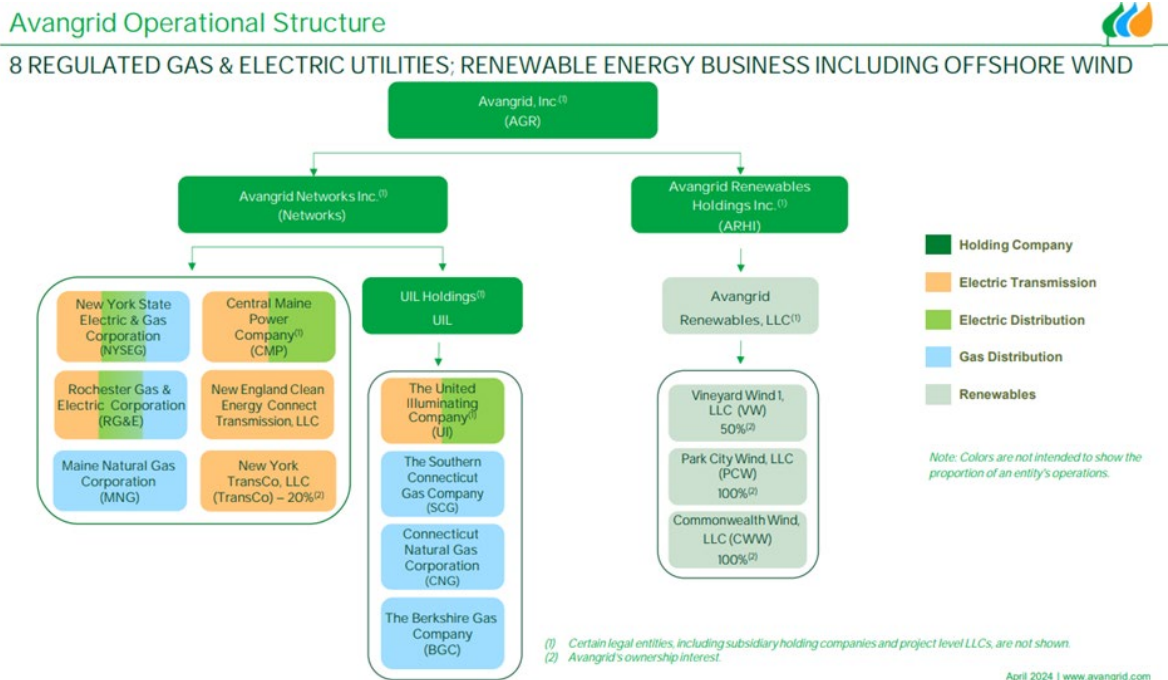
¹² Electric customer count provided for comparable size: NYSEG – 919,650; RG&E 391,634; CMP – 664,260; UI – 344,976. Electric customers from 2023 10K.

¹³ As noted below, UI has a holding company in between the operating utility and Avangrid Networks. For presentation purposes, charges from both Avangrid Service Company and UIL Holdings was included in this table to demonstrate costs charged to UI from affiliates.

affiliates, as illustrated in **Exhibit IV-10**. The complexity of this structure makes it difficult to evaluate if the New York utilities are receiving appropriate allocated costs based on cost-causation principles. Furthermore, there is an annual dollar limit for support services that can be charged to Central Maine Power from the Avangrid service companies.¹⁴

- As a result, affiliate charges reported in the FERC Form 1 for each operating company are not comparable. This makes it challenging for New York stakeholders to evaluate if NYSEG and RG&E are being charged equitably for service company costs based on cost causation. As a result, reliance is largely placed on the cost allocation manuals are in place to prevent unequitable costs sharing.

Exhibit IV-9 Avangrid Operational Structure



Source: Avangrid April 2024 Factbook. https://s24.q4cdn.com/489945429/files/doc_financials/2024/q1/FINAL-April-2024-FactBook.pdf. Accessed September 12, 2024.

¹⁴ State of Maine Public Utilities Commission Docket No. 2012-00530. Amounts above the cap for CMP remain at the service company and are not allocated as affiliate transactions per the FERC Form 1.

Exhibit IV-10 Associated/Affiliated Companies

Name of Associated/Affiliated Company (b)
Iberdrola Financiacion SA
IB. Distrib. Electrica SA
AVANGRID, Inc.
AVANGRID Service Company
New York State Electric & Gas Corporation
Central Maine Power Company
AVANGRID Management Company
UIL Holdings Corporation
The United Illuminating Company
Connecticut Natural Gas Corporation
The Southern Connecticut Gas Company
Berkshire Gas Corporation

Source: NYSEG and RG&E 2022 FERC Form 1

5. NYSEG and RG&E have appropriate debt management policies.

- Avangrid issues bonds in the public market, bank market or through intercompany financing agreements with its parent, Iberdrola. Avangrid evaluates options based on current market conditions which drive the cost differentials between the product offerings.¹⁵
- NYSEG and RG&E issue debt in the capital markets or bank market. Capital market issuances are either in the private placement or 144A format depending on the size of the issuance. To issue in the 144A market, the transaction typically has to be what is called benchmark size, or at least \$300 million. The private placement market has a liquidity premium of 10 to 50 basis points (bps) relative to the public market depending on overall market volatility, but allows for flexibility in transaction terms and smaller issuance sizes. Similar to Avangrid, NYSEG and RG&E may issue term loans and have done so in the past to serve as a bridge to a long-term bond issuance.¹⁶
- Fees are standard for bond issuances. Underwriter fees and legal fees are the most prevalent and change based on the nature of the issuance, specifically the principal or size of the offering. Issuance costs can be amortized over the life of the bond.¹⁷
- As outlined below in **Exhibit IV-11**, NYSEG and RG&E have credit ratings that are relatively consistent with the other Avangrid operating companies as well as the Avangrid parent company:

¹⁵ DR 225

¹⁶ DR 225

¹⁷ DR 225

Exhibit IV-11 Avangrid Companies' Credit Ratings

LT Issuer/Default Rating (Outlook)	S&P	Moody's	Fitch
AVANGRID	BBB+ (Stable) A-2 CP BBB Sr. Unsecured	Baa2 (Stable) P-2 CP Baa2 Sr. Unsecured	BBB+ (Stable) F-2 CP BBB+ Sr. Unsecured
<i>AVANGRID Downgrade Thresholds</i>	<i>FFO/Debt < 17%⁽¹⁾</i>	<i>CFO pre-WC/Debt < 13%</i>	<i>FFO Leverage > 5.5x</i>
NYSEG	A- (Stable) A- Sr. Unsecured	Baa1 (Stable) Baa1 Sr. Unsecured	BBB+ (Stable) A- Sr. Unsecured
RG&E	A- (Stable) A Secured A- Sr. Unsecured	Baa1 (Stable) A2 Secured	BBB+ (Stable) A Secured A- Sr. Unsecured
CMP	A (Stable) A Sr. Unsecured	A2 (Stable) A2 Sr. Unsecured	BBB+ (Stable) A Secured A- Sr. Unsecured
UI	A- (Negative) A- Sr. Unsecured	Baa1 (Stable)	A- (Stable) A Sr. Unsecured
CNG	A (Negative) A Sr. Unsecured	A2 (Stable) A2 Sr. Unsecured	A- (Stable) A Sr. Unsecured
SCG	A- (Developing) A Secured	A3 (Stable) A1 Secured	A- (Stable) A+ Secured
BGC	BBB+ (Stable)	A3 (Stable)	A- (Stable) A Sr. Unsecured

(1) Pertains to Iberdrola's leverage ratio as Avangrid's rating is linked to the group credit profile of Iberdrola.

Source: Avangrid April 2024 Factbook. https://s24.q4cdn.com/489945429/files/doc_financials/2024/q1/FINAL-April-2024-FactBook.pdf. Accessed September 12, 2024.

- As shown in **Exhibit IV-12**, NYSEG and RG&E have interest rates and debt costs that are relatively consistent with other Avangrid operating companies, as well as the Avangrid parent company:

Exhibit IV-12 2023 Debt Issuances (\$millions)

Entity	Principal	Weighted Average Interest Rate
NYSEG	\$850	5.55%
RG&E	\$250	5.90%
UI	\$254	5.72%
CMP	\$125	5.87%

Source: Avangrid 2023 10K

- Based on NorthStar's review of information provided, along with publicly available information, Avangrid appears to follow appropriate and prudent processes to issue debt. There is no indication that NYSEG and RG&E debt is not priced competitively within the market.

6. Avangrid has an appropriate pension and OPEB asset management strategy, appears able to meet its obligations based on current market conditions, and is following a reasonable asset allocation strategy.

- Avangrid maintains an Investment Policy Statement for Defined Benefits Plans (Plans). The purpose of this policy is as follows:¹⁸
 - State the plans' investment objectives and policy guidelines.
 - Outline roles and responsibilities of various parties involved with the plans.
 - Outline asset allocation ranges that the plan will use to achieve investment objectives.
- The Investment Policy Statement also outlines permissible asset classes and portfolio restrictions. Specifically, the policy states that plan assets may be invested in the following types of investments:¹⁹
 - Equity investments.
 - Domestic fixed-income investments. Not more than 10 percent of the portfolio should be invested in below-investment-grade bonds.
 - Treasury bonds.
 - Securities of an individual issuer not to exceed 10 percent of an investment manager's portfolio at any time.
 - Investment managers may maintain reserve and cash equivalent investments.
 - There is no specific limitation to turnover; however, modest turnover is preferred.
 - Derivative securities for speculative purposes are strictly prohibited.
- As shown in **Exhibit IV-13** below, Avangrid appears to follow criteria regarding investment types as described in its Investment Policy Statement.

Exhibit IV-13
2023 Debt Issuances (\$millions)

As of December 31, 2023	
(Millions)	Total
Asset Category	
Cash and cash equivalents	\$ 63
U.S. government securities	295
Common stocks	58
Registered investment companies	106
Corporate bonds	746
Common collective trusts	708
Other, principally annuity, fixed income	6
	\$ 1,982
Other investments measured at net asset value	177
Total	\$ 2,159

Source: Avangrid 2023 10K.

¹⁸ DR 219

¹⁹ DR 219

- NYSEG and RG&E froze the pension plans and enhanced an existing 401K match in exchange for the freeze. NYSEG and RG&E began modifying the pension plans in 2002 to derisk from the financial obligations associated with traditional defined benefit pension programs.²⁰ As demonstrated in **Exhibit IV-14** and **Exhibit IV-15**, NYSEG and RG&E have improved the funded status of pension benefits.^{21 22} The improved funding status is attributable to strategic and tactical decisions the Companies made (i.e. diverse asset allocation, glide path approach, refined interest rate hedging, adding active management, etc.), it was also attributed to external factors beyond the Companies' control (i.e. discount rates, asset performance, lump-sum utilization, etc.).

Exhibit IV-14
NYSEG Pension Obligation and Funded Status (\$thousands)

	2023	2022	2021	2020	2019
Benefit Obligation at December 31	1,159,963	1,136,121	1,592,830	1,730,911	1,649,246
Fair Value of Plan Assets at December 31	1,114,333	1,115,006	1,543,061	1,550,984	1,450,765
Funded Status	(45,630)	(21,115)	(49,769)	(179,927)	(198,481)

Source: NYSEG Subsidiary Financial Statements for each respective year

Exhibit IV-15
RG&E Pension Obligation and Funded Status (\$thousands)

	2023	2022	2021	2020	2019
Benefit Obligation at December 31	243,974	252,879	345,135	392,826	378,559
Fair Value of Plan Assets at December 31	184,499	201,556	291,097	300,919	286,899
Funded Status	(59,475)	(51,323)	(54,038)	(91,907)	(91,660)

Source: RG&E Subsidiary Financial Statements for each respective year

D. RECOMMENDATIONS

1. Simplify the service company cost-allocation process. Increase the illustration and support documentation so the user can easily understand and verify the allocations to the FERC Form 1. Also, prepare an annual report that summarizes and supports the amounts charged to NYSEG and RG&E. Reporting should be provided to DPS during interim periods between rate cases to support affiliate charges.
2. Improve unitization process. Going forward, Avangrid must ensure that unitized fixed-asset data are accurate and consistent for NYSEG and RG&E. Future plant in-service additions must accurately reflect cost, units, vintage and material.

²⁰ 2022 FERC Form 1 for NYSEG and RG&E

²¹ OPEB balances not show. OPEB funding status follows a similar trend for both companies.

²² As disclosed in the respective subsidiary financial statements for 2023, the pension benefit obligation had an actuarial loss primarily driven from decreases in discount rates. As a result, the funding status for both NYSEG and RG&E worsened in 2023. Based on June 30, 2024 subsidiary financial statements, the funding status has continued to improve in the first six months of 2024 for both NYSEG and RG&E.

V. ELECTRIC OPERATIONS

This chapter addresses load forecasting, reliability, system planning and other services Avangrid performs on behalf of NYSEG and RG&E for electric operations. The audit scope includes five main areas, addressed in the following order:

- Load Forecasting
- System planning
- Distributed Energy Resources (DER)
- Electric system reliability and vegetation management
- Street Lighting

A. BACKGROUND

This section provides background information on five main areas identified in the New York Department of Public Service (DPS) Solicitation. Service area maps for NYSEG and RG&E are provided in **Chapter II - Background**.

Load Forecasting

Utility load forecasting predicts future energy and demand requirements. These predictions can be completed both on a system and sub-system level, such as a network or substation. Avangrid provides forecasting services for NYSEG and RG&E. Work products include the following:

- Annual and monthly energy consumption forecasts – system-wide and for each customer segment.
- Summer and winter system coincident peak demand¹ for the system and each operational area.
- Weather-adjusted electric coincident peak demand (WAP).
- Annual and monthly weather-adjusted actual electricity sales.²

Load forecasts serve as fundamental inputs for the following:

- Financial forecasting and budgeting.
- Supply-procurement planning.
- Transmission-system reliability and infrastructure planning.
- Distribution-system reliability and infrastructure planning.
- Environmental and regulatory planning.

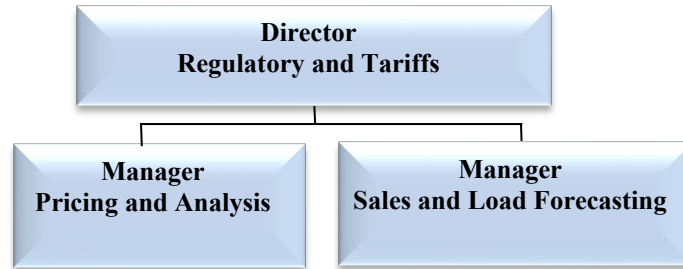
¹ Coincident peak demand is the demand of a customer or group of customers at the time of the entire electric system's peak demand. The importance of coincident peak demand is that it measures how each customer or group of customers contribute to the overall peak demand of a system.

² DR 102 all attachments and supplements, DR 132 Attachments 1 and 2, DR 419 Attachment 1 DR 423 Attachment 1, and DR 647 Attachments 1 and 2

Numerous factors contribute to load forecasting, including economic drivers, weather considerations, model development, load shapes, appliance saturation surveys and load modifications.

Avangrid's Sales and Load Forecasting group develops electricity sales and electric coincident peak demand forecasts. Avangrid's Sales and Load Forecasting organization is led by a manager who reports to the Director of Regulatory and Tariffs as shown in **Exhibit V-1**.

Exhibit V-1
Avangrid's Regulatory and Tariffs Organization Chart



Source: DR 1 Attachment 1, DR 26 Attachment 1

Exhibit V-2 provides a snapshot of electric sales and demand by utility.

Exhibit V-2
Electric Sales and Peak Demand from 2019 to 2023

Percent Change from 2019 to 2023		
	Electricity Sales	Peak Demand
NYSEG	0.1%	-6.8%
RG&E	-0.5%	-6.3%

Source: DRs 132 Attachments 1 and 2 and 647 Attachments 1 and 2

- RG&E experienced a decrease in electric sales from 2019 to 2023. The primary driver for this is a 14 percent decrease in Industrial sector electricity sales.³
- NYSEG electricity sales have remained almost flat from 2019 to 2023.
- Electric system coincident peak demand has also decreased from 2019 to 2023. Avangrid believes that this decrease is primarily driven by increases in photovoltaic (PV) generation and incremental energy efficiency. According to Avangrid, electric vehicles and heat pumps are not yet being adopted at a rate that would offset decreases to electric coincident peak demand, due to increased PV and energy efficiency.⁴

System Planning

System planning is the process of determining time, size and location of transmission and distribution upgrades over a defined period to meet targeted economic, reliability and

³ DRs 132 Attachments 1 and 2 and 647 Attachments 1 and 2

⁴ DRs 132 Attachments 1 and 2 647 Attachments 1 and 2, and 1059

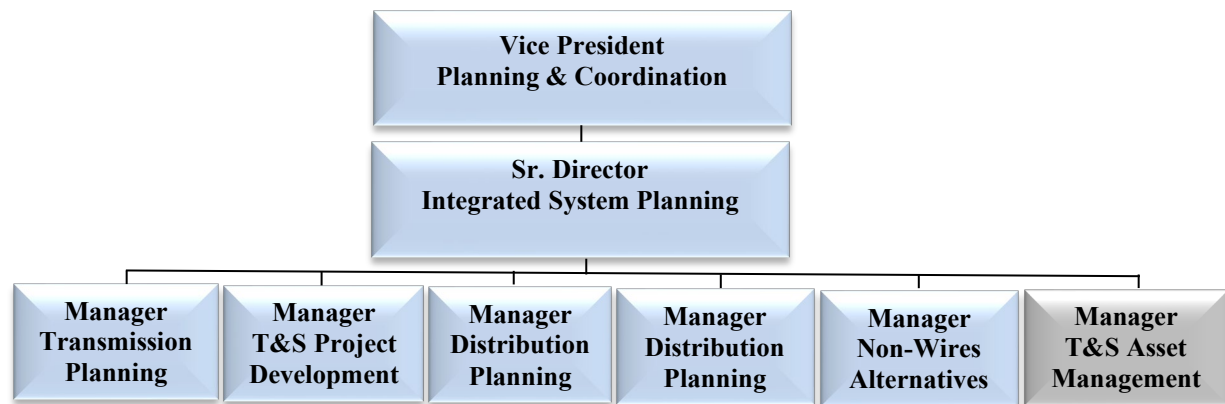
environmental objectives. System planning is traditionally composed of demand-forecasting and transmission/distribution expansion.

With the interconnection of renewable resources on the transmission system and the interconnection of both demand-side and utility-side distributed energy resources, system planning has become far more complex. System planning requires a complete understanding of a system's current design and capabilities.

System planning has become more challenging as the traditional flow of energy from generation supply, through the transmission and distribution systems, to the customer load has changed. The addition of DER modifies traditional power flow, requiring special studies and analyses. On the other hand, interconnection of new types of loads, such as electric vehicles, battery storage and heat pumps, poses new challenges in planning due to changed load profiles, shifted peak hours, and creation of new load centers. To respond to these challenges, technologically advanced solutions need to be developed and applied in conjunction with traditional network reinforcements and component replacements.

System planning for NYSEG and RG&E is performed by Avangrid's Integrated System Planning group within the Planning and Coordination organization as shown in **Exhibit V-3**.

Exhibit V-3
Planning and Coordination Organization Chart⁵



Source: DR 1 Attachment 1.

Integrated System Planning group has five teams responsible for system planning, planning studies, and Transmission & Distribution (T&D) project development. These teams are:

- **Transmission Planning** – Transmission Planning is responsible for comprehensive capacity, reliability and compliance planning studies in support of current operations and future grid-planning initiatives. These studies are used to identify locations where upgrades are required to support existing and future capacity and reliability needs – they typically focus on system areas where there is N-1 loss-of-load exposure. In addition to conducting studies, Transmission Planning supports the System Operations Team to solve near-term needs and is tasked with response activities, such as load and

⁵ Integrated System Planning also has a team focused on Asset Management to be described later in this chapter.

generator interconnection studies, which are used to identify adverse impacts and necessary upgrades to connect new facilities to transmission system.⁶

- Transmission and Substation Project Development – Transmission and Substation Project Development is responsible for centralized analysis of disparate system needs and development of holistic, comprehensive, integrated and justified projects/programs. Typical work products are in the form of IP1/IP2 Needs and Solutions Assessment Reports, which are considered a prerequisite for project inclusion in the capital plan.⁷
- Distribution Planning – Overall Distribution Planning activities are supervised by two managers. The two teams are responsible for performing comprehensive capacity, reliability and resiliency planning studies to support current operations and future grid-planning initiatives. These studies are used to identify locations where solution upgrades are required to support existing and future capacity needs, such as customer reliability and resiliency. In addition, Distribution Planning supports the System Operations Team to meet near-term needs and is responsible for activities such as load and generator interconnection studies. Solutions identified within Distribution Planning are considered pre-conceptual and subject to refinement as Project Development advances through the Investment Planning Process.⁸
- Non-Wires Alternatives (NWA) – The NWA function is responsible for evaluating all electric capital infrastructure projects for NWA suitability. For viable NWA candidates, the NWA function develops and administers competitive market solicitations to identify technically and economically (as determined by a benefit-cost analysis) feasible NWA solutions. This group subsequently leads project development and implementation, plus ongoing evaluation, measurement and verification (EM&V) activities.⁹

DER

DERs are electricity-producing resources and/or controllable loads that are connected to a local distribution system or connected to a customer facility within a local distribution system. DERs can include solar panels, energy efficiency programs, demand response programs, combined heat and power plants, electricity storage, small natural gas-fueled generators, and controllable loads, such as HVAC systems and electric water heaters.¹⁰

DERs offer an alternative to traditional utility infrastructure solutions. Historically, when a utility identified a load constraint on the system, the utility increased network or substation

⁶ DR 703

⁷ DR 700

⁸ DR 702

⁹ DR 701

¹⁰ <https://www.epa.gov/energy/distributed-generation-electricity-and-its-environmental-impacts>. Accessed September 18, 2024.

capacity by installing additional equipment. DERs offer an opportunity to either reduce load or provide additional resources near the area of load constraint.

Non-Wires Alternatives

An NWA is any utility-sponsored, non-traditional solution to meet an infrastructure need. It includes a portfolio of technologies with the intention of deferring or removing the need for a traditional “wires investment,” such as constructing or upgrading components of a distribution and/or transmission system. An example of an NWA would be an energy storage solution that reduces demand on the distribution system in areas that would otherwise require infrastructure investment to maintain reliability.

Avangrid uses a four-tier initial screening framework to determine suitability of an NWA to alleviate system reliability and load limitations. **Exhibit V-4** outlines the NWA suitability criteria.

Exhibit V-4
NWA Suitability Screening Criteria

NWA Suitability Criteria	Project Type Suitability	• Load-relief projects that do not involve a customer contribution or have a specific customer in-service date sooner than 36 months. • Reliability projects and/or a combination of reliability and load relief projects.
	Project Timeline Suitability	• Minimum of 36 months to time of need.
	Project Cost Suitability	• Projects with construction costs greater than \$1 million.
Asset Conditions	Asset Condition	• Consider if existing substation equipment is in poor or very poor health.

Source: DRs 114 and 1116 Attachment 1

Value of Distributed Energy Resources

On March 9, 2017, the NYSPSC issued the Value of Distributed Energy Resources (VDER) Order in Case 15-E-0751.¹¹ VDER is the mechanism the NYSPSC has adopted to compensate energy produced and sold to utilities by developers/owners of DERs. A developer/owner (i.e., the host or Community Distributed Generator (CDG)) creates and interconnects a DER to inject electricity into the grid. The utility determines the value of that energy using a Value Stack methodology and allocates value of energy produced to a customer (i.e., subscriber). Value-Stack compensation takes the form of bill credits and considers the following elements:

- Energy Value (LBMP)
- Capacity Value (ICAP)
- Environmental Value Component (EC)
- Demand Reduction Value (DRV)

¹¹ <https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=15-E-0751>. Accessed September 26, 2024.

- Locational System Relief Value (LSRV)
- Market Transition Credit
- Community Credit¹²

NYSEG and RG&E serve as billing agents for a contractual relationship between the CDG and its subscribers. Credits and costs associated with CDG appear on the customer's utility bill. NYSEG provides details of the CDG program in tariff leaf 117.46.20 and RG&E provides details in its tariff leaf 160.39.5.¹³

Demand Response

Demand Response (DR) is one type of DER that is designed to reduce customer load during peak periods or emergencies. NYSEG and RG&E have developed DR programs for reducing network peak electric loads during periods when system constraints are anticipated. Customers have the option to enroll directly or through an aggregator. Direct-enrollment participants must have a curtailable load of 50 kW or more.

Programs include the following:

- Smart Savings Rewards Thermostat Program – This program is directed at residential and small commercial customers. Participants allow NYSEG and RG&E to make brief, limited temperature adjustments from May 1 to September 30 on days when summer electricity demand is at its highest. Participation is voluntary, and customers can opt out of temperature adjustments at any point by manually adjusting their thermostat.¹⁴ This program is considered a direct-load control program, as the utility has direct control of the end user's thermostat.
- Commercial System Relief Program (CSRP) – CSRP is an annual program that runs from May 1 to September 30, incentivizing customers to shift electricity use during peak periods. Customers are notified of a peak demand event and are encouraged to reduce electricity use – which is called a “CSRP event.” CSRP events are activated by utilities when the day-ahead forecast is at least 92 percent of the forecast summer coincident peak demand. Customers may choose to participate in the program via two different methods, as outlined below:
 - The Reservation Payment Option specifies that customers commit to and provide load relief at a specified level of kW. Customers are compensated based on kW pledged and actual performance during events.

¹² <https://www.nyserda.ny.gov/All-Programs/NY-Sun/Contractors/Value-of-Distributed-Energy-Resources>. Accessed September 16, 2024.

¹³ https://www.nyseg.com/documents/40132/5890332/PSC120Section_37_11-2023.pdf/87c1f727-8ebc-5a9a-0019-ae7ed7f8f257?t=1699371661573 and https://www.rge.com/documents/40137/2114698/PSC19Section_23+%281%29.pdf/0acfb6da-2f09-9efc-6d2a-092e0107539a?t=1698866009933. Both sites accessed on September 16, 2024.

¹⁴ <https://www.nyseg.com/smartenergy/rebatesandprograms/smartsavingsrewards> and <https://www.rge.com/en/smartenergy/rebatesandprograms/smartsavingsrewards>– Accessed September 16, 2024.

- The Voluntary Option allows customers to enroll in the program without a pre-planned commitment to a specified level of kW. Customers simply enroll and receive compensation when the load is curtailed.
- The Reservation Option has a higher value than the voluntary in utility rate structures.¹⁵
- Term Dynamic Load Management Program (Term-DLM) – Term-DLM is similar to the CSRP program. Utilities activate events when the day-ahead forecast is at least 90 percent of the forecast summer coincident peak demand. Potential penalties are associated with this program if customers receive reservation payments without curtailing load.¹⁶
- Auto Dynamic Load Management Program (Auto-DLM) – Auto-DLM is an emergency, quick-response program triggered when a network experiences a grid emergency. Participants provide battery power to the grid and/or curtail load after receiving a ten-minute notification of an emergency. Potential penalties are associated with this program if customers receive reservation payments without curtailing load.¹⁷

Electric System Reliability

Electric system reliability is a measure of system health in both good and stormy weather conditions, plus a utility's effectiveness in restoring service after an outage. The NYSPSC oversees system reliability in Part 97 of Title 16 the New York Codes, Rule and Regulations as part of its regulatory oversight of state utilities. Part 97 of Title 16 requires utilities to maintain interruption data for six years that include the following:

- Operating area
- Circuit name and location
- Date and time of outage
- Date and time of restoration
- Number of customers affected
- Cause
- Weather condition
- System component¹⁸

¹⁵<https://www.nyseg.com/documents/40132/5899016/NYSEG%2BDLM%2BProgram%2BGuide.pdf/b0c685d3-0f0c-1e76-2b6e-b3250fd6645a?version=1.0&t=1645136416801> and https://www.rge.com/documents/40137/2123493/RG%26E+DLM+Program+Guide_12.14.23.pdf/559c643b-05ff-3309-e11e-7d88d730b9a1?t=1702585239110 Accessed September 16, 2024.

¹⁶<https://www.nyseg.com/documents/40132/5899016/NYSEG%2BDLM%2BProgram%2BGuide.pdf/b0c685d3-0f0c-1e76-2b6e-b3250fd6645a?version=1.0&t=1645136416801> and https://www.rge.com/documents/40137/2123493/RG%26E+DLM+Program+Guide_12.14.23.pdf/559c643b-05ff-3309-e11e-7d88d730b9a1?t=1702585239110 accessed September 16, 2024.

¹⁷<https://www.nyseg.com/documents/40132/5899016/NYSEG%2BDLM%2BProgram%2BGuide.pdf/b0c685d3-0f0c-1e76-2b6e-b3250fd6645a?version=1.0&t=1645136416801> and https://www.rge.com/documents/40137/2123493/RG%26E+DLM+Program+Guide_12.14.23.pdf/559c643b-05ff-3309-e11e-7d88d730b9a1?t=1702585239110 accessed September 16, 2024.

¹⁸ 16 NYCRR 97.2 and 97.3

Part 97 further requires utilities to file interruption data by the 20th of each month to the DPS. From these data, two reliability metrics are calculated, as follow:

- System Average Interruption Frequency Index (SAIFI) – Measures annual average number of interruptions per customer. The lower the ratio of interruptions to number of customers, the higher the reliability.
- Customer Average Interruption Duration Index (CAIDI) – Measures average length of time from service interruption to service restoration for a customer experiencing an outage. Lower CAIDI indicates fewer minutes/hours of interruption per customer.¹⁹

Part 97 permits exclusion of major storm data in system reliability calculations. A major storm is a period of adverse weather during which service interruptions affect at least ten percent of customers in an operating area and/or result in customers being without electric service for at least 24 hours.²⁰

Outage Management System

A utilities' ability to recognize an outage and to pinpoint the location is critical to public safety. An accurate and reliable outage management system assists in reducing customer outage durations and maintaining public safety.

Avangrid uses the Siemens Spectrum Outage Management System (OMS). The Spectrum OMS was implemented at RG&E in 2017 and at NYSEG in 2018. The software then was updated in February 2024. An Outage Prediction Model was built into the Spectrum OMS when it went live in 2017 at RG&E and 2018 at NYSEG. The Outage Prediction Model ingests electric outage calls coming from the SAP customer information system (which includes Interactive Voice Response/Website outage reporting) and integrates these data with Spectrum OMS information to predict location/scale/equipment outages in near real-time based on a set of rules.

The Supervisory, Control, and Data Acquisition (SCADA) system provides virtual visibility to the system and interfaces with the Spectrum OMS to predict outage locations. As Advanced Metering Infrastructure (AMI) comes online, smart meter data will also be used as part of the Outage Prediction Model.²¹

The Outage Prediction Model serves several purposes, as outlined below:

- Provision of information to customers (estimated time of restoration).
- Better direction of crews to begin restoration and repair.²²
- Improving probability of crews arriving in correct location – eliminating unnecessary driving and diagnostic time. The main driver of outage duration is travel-time for crews

¹⁹ 16 NYCRR 97.4

²⁰ 16 NYCRR 97.1

²¹ DR 1114

²² DR 1114

to arrive at work location and time to carry out physical repairs. In theory, increased efficiency in restoration would show improvement in CAIDI.²³

Two critical components for maintaining or improving reliability are well defined and executed: asset-management and vegetation-management programs.

Asset Management

Asset management uses advanced analytics, tools, and data to improve equipment availability, extend asset lifecycles and operating performance. A mature asset management program can be used across the enterprise to manage different types of assets, schedules, resources, processes, inventories and expenses. Specifically, asset management can help accomplish the following:

- Reduce downtime and costs.
- Improve operational performance.
- Leverage industry expertise.
- Incorporate best-practice industry data.
- Improve work plans.
- Extend asset life cycles.
- Enhance financial performance.
- Optimize maintenance work processes.
- Improve preventive and predictive maintenance.

As previously discussed, and shown in **Exhibit V-3**, within the Integrated Planning group lies the Transmission and Substation Asset Management team. The team is responsible for performing asset class assessments on larger populations of equipment, such as circuit breakers, transmission lines and power transformers. These assessments serve as inputs into comprehensive needs and solutions assessments, and are used to justify projects within the NYSEG and RG&E portfolios.

Vegetation Management

Vegetation management is the process of mitigating undesirable vegetation by mechanical, chemical or biological control methods. Vegetation management includes control of various types of vegetation, from trees and branches to bushes, weeds and vines. Each type of vegetation can become a threat to infrastructure assets, such as power lines, and removing or controlling vegetation is essential to ensuring that customers receive safe and reliable utility services.

Vegetation-management methods vary depending on vegetation to be controlled or removed. For example, to maintain integrity of the electric system, trees routinely need to be pruned or entirely removed. Mechanical methods, such as mowing or hand-cutting brush and overgrown weeds, are most effective when followed up by herbicide applications. Routine

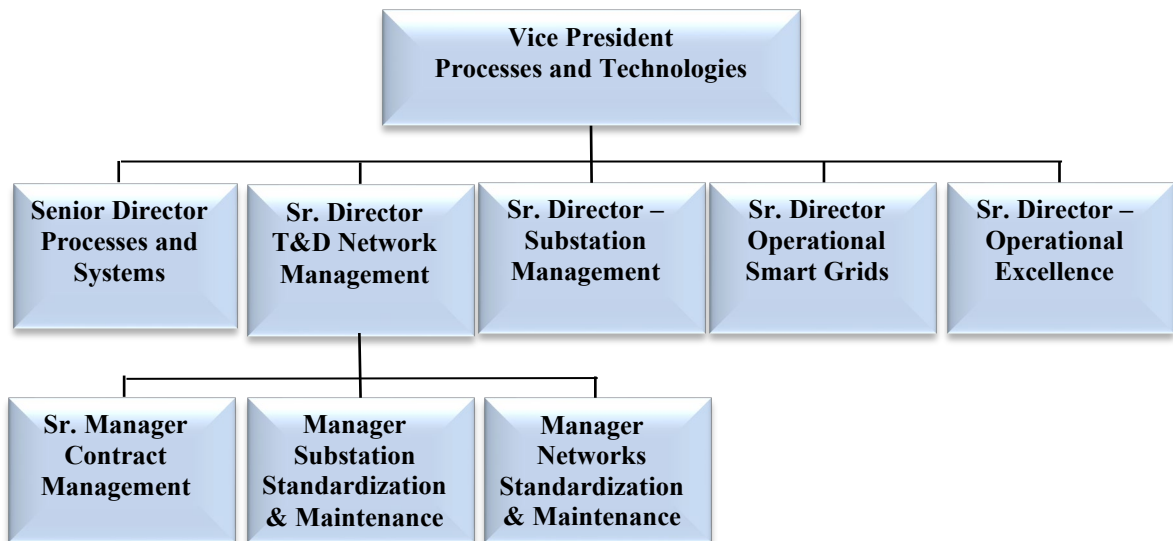
²³ DRs 117 and all Attachments, 268 Attachment 2 and 1114

and timely vegetation management is essential to reduce risk of hazardous conditions that can cause fires or impact power delivery.

It is essential that utilities develop vegetation-management commitments that help meet SAIFI goals.

Exhibit V-5 provides Avangrid's Processes and Technologies organization that is responsible for facilitating the vegetation management program at NYSEG and RG&E.

**Exhibit V-5
Processes and Technologies Organization Chart**



Source: DR 1 Attachment 1

- The T&D Network Management group is responsible for scheduling and administering vegetation-management contracts.²⁴

Street Lighting

In 2016, New York Public Service Law was modified to include Chapter 48, Article 4, Section 70A – Street Lights. The modification permits the transfer of complete systems of street lights to a municipality or other government agency. NYSPSC has jurisdiction over these transfers and is responsible both for evaluating public interest and for facilitating agreements between utilities and petitioning municipalities.²⁵

B. AUDIT SCOPE ITEMS

- Assess how the Companies ensure the quality of energy efficiency portfolio performance data. (Moved to **Chapter IX – Customer Operations**)

²⁴ DR 1 Attachment 1

²⁵ <https://www.nysenate.gov/legislation/laws/PBS/70-A>. Accessed September 16, 2024.

- Evaluate changes to electric load forecasting processes since the previous management audit.
- Evaluate how various forecasts (e.g., system-wide, substation-specific, circuit-level, customer-specific) are synchronized and incorporated into the planning process and assess the accuracy of those forecasts.
- Evaluate the Companies' vegetation management efforts.
- Assess how labor costs are allocated between vegetation management and storm response.
- Evaluate the Companies' resiliency planning, asset management, and replacement programs.
- Assess the effectiveness and capabilities of the Companies' Outage Prediction Model.
- Evaluate near- and long-term electric planning to meet future demand and capacity requirements; including but not limited to the extent to which the planning process considers:
 - Asset Condition
 - Reliability
 - Resiliency
 - Distributed Energy Resources (DER)
 - Electric Vehicles (EV)
 - Energy Storage (ES)
 - Energy Efficiency (EE)
 - Demand Response (DR)
 - Distributed Generation (DG)
- Review the benefit/cost analysis framework used in electric system planning and prioritization to determine its effectiveness. (see **Chapter VII - Project Management**)
- Evaluate the effectiveness of, oversight of, and any proposed changes to the Demand Response Programs.
- Evaluate electric transmission and distribution system modernization efforts related to software, hardware, integration of advanced technology, and system platform enhancements and enablement.
- Evaluate the processes used to collect and analyze DER performance.
- Assess efforts to disseminate available local hosting capacity data and information about potential distribution system upgrades to potential DER providers.
- Evaluate processes for managing billing and tracking billing credits associated with the VDER.

- Assess Non-Wires Alternative (NWA) project development and selection processes, evaluation criteria and ongoing oversight of such projects once they are operational.
- Evaluate the process of transfer of ownership of street lighting systems to municipalities.

C. FINDINGS AND CONCLUSIONS

1. Avangrid’s significant change to the electric sales and demand forecasting process is the inclusion of CLCPA.

- Avangrid continues to use an econometric regression model to determine its baseline forecast. While baseline forecasts have not changed, econometric variables used in the models may vary from year to year depending on statistical fit.²⁶
- The baseline forecasts are adjusted for CLCPA. Avangrid has included forecasts for DER, EV, ES, and EE. Forecast for DG and DR are not included.²⁷
- Avangrid does not include DR in its load forecasts.²⁸ This is typical for New York utilities as it is seen as an operational tool to assist in reducing load during system emergencies and not a permanent load change.

2. While CLCPA has been addressed in the forecasts, it is not adequate.

- Avangrid only includes a negligible amount of building electrification, and the sole source of building electrification is electric heating (electric heat pumps). Other fuel-switching opportunities such as electric hot water heating and electric cooking are not included.²⁹
- The DER forecasts include the impact of battery storage systems. Battery storage systems as standalone technologies are not included. The sole DER technology is limited to roof-top photo-voltaic systems.³⁰
- EE is not forecasted after 2028. The EE forecast is held constant showing no increases in EE after 2028.³¹

3. Forecasts for electric energy and demand are often inaccurate as demonstrated by large variances between forecast and weather-adjusted actual.

²⁶ DR 103 Attachment 1

²⁷ DR 102 Supp 1 Attachments 1 and 2, and DR 102 Supp 2 Attachment 1

²⁸ DR 102 Supplement 2 Attachment 1

²⁹ DR 102 Supp 1 Attachments 1 and 2, DR 102 Supp 2 Attachment 1, DR 103 Supp 2

³⁰ DR 103 Supp 2, and DR 610

³¹ DR 102 Supp 1 Attachments 1 and 2, DR 102 Supp 2 Attachment 1, and DR 1147

- Avangrid's electric sales and peak demand forecasts for NYSEG and RG&E have experienced large annual variances over the past five years as shown in **Exhibit V-6** and **Exhibit V-7**.

Exhibit V-6
Electric Sales Forecast Sector Variances from 2019 to 2023

	Residential Sector Variance	Commercial Sector Variance	Industrial Sector Variance
NYSEG			
2019	-0.2%	-1.0%	7.4%
2020	-1.6%	5.2%	4.0%
2021	-5.0%	3.7%	6.8%
2022	2.9%	5.2%	3.9%
2023	1.8%	-0.6%	6.2%
RG&E			
2019	0.6%	1.3%	7.2%
2020	-4.4%	6.5%	12.6%
2021	-7.0%	-0.3%	-2.2%
2022	2.7%	1.2%	6.5%
2023	5.0%	1.2%	14.8%

Source: DR 132 Attachments 1 and 2, DR 419 Attachment 1, and DR 647 Attachments 1 and 2

Exhibit V-7
Forecast to Weather Adjusted Peak Demand (MW)

	NYSEG				RGE			
Year	Actual (MW)	WAP (MW)	Forecast (MW)	Variance (Percent) ¹	Actual (MW)	WAP (MW)	Forecast (MW)	Variance (Percent) ¹
2019	3,011	3,188	3,027	-5.3%	1,452	1,550	1,494	-3.8%
2020	3,125	3,240	3,075	-5.4%	1,426	1,589	1,532	-3.7%
2021	2,988	3,087	3,127	1.3%	1,547	1,585	1,554	-2.0%
2022	3,082	3,160	2,993	-5.6%	1,506	1,535	1,569	2.2%
2023	2,880	2,970	3,142	5.5%	1,352	1,453	1,538	5.5%

Note 1: Variance is calculated as the difference between Forecast Demand and Weather Adjusted Demand divided by Forecast Demand.

Source: DR 132 Attachments 1 and 2 and DR 647 Attachments 1 and 2

4. Avangrid does not reconcile system-level forecasts with substations or circuit-level forecasts for NYSEG and RG&E.³²

- Avangrid prepares system-level electric sales and peak-demand forecasts for NYSEG and RG&E.³³
- Avangrid's Distribution Planning group developed and maintains a substation/transformer peak-load and historical peak-demand database. This information is used to forecast substation/transformer peak load. Avangrid assumes two percent system growth, but based on recent load trends applies either 1.5 percent or four to six percent growth on individual substations/transformers. These assumed

³² DR 104

³³ DR 102

growth rates are used to generate substation/transformer peak forecasts. Projected overloaded transformers are then prioritized for upgrades based on available capital budget.³⁴

- These two forecasts have separate uses and are developed independently within separate organizations. System-level forecasts are not compared with substation or circuit-level forecasts for operational or distribution planning purposes.

5. System planning at Avangrid encompasses numerous activities both traditional and non-traditional.

- Traditional planning activities include load forecasting, asset condition, resiliency and reliability. These planning activities are discussed different areas of this chapter.
 - Load Forecasting – Conclusions V-1, V-2, and V-3.
 - Asset Condition – Conclusions V-16, V-17, V-18
 - Resiliency - Conclusion V-18
 - Reliability – Conclusions V-6, V-7, and V-8
- Non-traditional planning activities include DER, EV, ES, EE, and DG and are discussed in Conclusion V-9.
- DR is discussed in Conclusion V-15.

6. Avangrid develops comprehensive transmission- and distribution-system planning studies, resulting in specification of system needs for the next five to 10 years. These studies are necessary components to system reliability. Avangrid cannot adequately plan for the impacts of CLCPA due to deficiencies in the load forecasting model.³⁵

- The system-planning process begins with amassing load data and performing load forecasts. The load forecast does not include:
 - A forecast of energy efficiency beyond five years. The resulting energy and demand forecasts would be artificially too high.
 - A reasonable forecast of building electrification and the resulting increases in winter demand and sales.
 - The impacts of stand-alone battery energy storage systems which may alter the system load shape.
- System studies are conducted to evaluate the system for reliability constraints due to thermal and voltage overloads.
 - NERC TPL-001 Reliability Assessment on Bulk Transmission System.

³⁴ DR 104

³⁵ DR 97 Supp 1

- Local Area Study Plans – These studies are used to identify locations where solution upgrades are needed to support future capacity needs, along with existing customer reliability in areas where there is N-1 loss-of-load exposure.
- Distribution Transformer Bank Database.³⁶

7. Many projects resulting from transmission system planning are not included in the Investment Planning portfolio.

- In 2021, Avangrid’s Transmission Planning group recommended 102 preferred system solutions in six Local Area Studies for NYSEG and RG&E. All showed a “Year of Need” of 2024.³⁷
- Avangrid identified 19 of the 102 solutions with assigned project-identification numbers, and 13 are included in the 2024 Capital Plan.³⁸
- None of the 13 projects are planned to be in service as required in 2024.³⁹

8. Projects resulting from distribution-system planning have been implemented or are identified in future capital plans.

- In 2023, Avangrid’s Distribution Planning group developed its annual Distribution Load Relief Program. The program recommended 16 load-relief projects.⁴⁰
- As of summer 2024, 11 of these projects were included in the Investment Portfolio. The remaining five projects were later removed from the portfolio.⁴¹

9. NYSEG and RG&E have comprehensive hosting-capacity maps. However, Avangrid does not consistently update NYSEG and RG&E maps for third-party market participants.

- Avangrid provides hosting-capacity maps on the ArcGIS website for NYSEG and RG&E. The maps identify available areas on the system for the interconnection of EV Charging Stations, DERs, Energy Storage Systems, and Distributed Generation. Hosting maps include:
 - Photovoltaic
 - EV Charging and Building Electrification
 - Battery and Energy Storage⁴²

³⁶ DR 104 and DR 799

³⁷ DR 779 Attachments 3 through 8 and DR 1210 Attachment 1.

³⁸ DR 779 Attachments 3 through 8 and DR 1210 Attachment 1

³⁹ DR 1210 Attachment 1

⁴⁰ DR 97 Attachment 2

⁴¹ DR 1211 Attachment 1

⁴² DR 780 and

<https://www.arcgis.com/apps/instant/portfolio/index.html?appid=5fc7fc4820af48838cb5bdfd54e5baad>

- In preparation for larger scale penetration of DERs, EV Charging, Energy Storage, and Distributive Generation, Avangrid conducted analyses and developed programs to determine system needs to accommodate the new technologies and advance their role as a Distribution System Operator, including:
 - Comprehensive Area Studies that model the existing and future state of the T&D systems. Future studies will include customer counts, distribution system capacity, voltage analyses, load balancing, and reliability and resiliency in response to new DERs, NWAs, EVs, and Energy Storage.
- Avangrid has well-defined procedures for obtaining updated system information used for NYSEG and RG&E capacity maps, but does not consistently update maps.
 - Data related to DER installations and the interconnection queue are updated monthly.⁴³
 - Changes to maps are updated using an 18-step procedure that evaluates changes in system equipment, system configuration and load.⁴⁴
 - Avangrid has an annual schedule to update hosting capacity maps:
 - PV maps are updated annually in April/May for DERs greater than 500 kW and for the remaining PVs in October /November. NorthStar observed an update in October 2023, indicating that an April/May 2024 update was not performed.
 - There is no requirement to update for EV Charger Load, but periodic updates are completed as necessary. NorthStar observed the most recent update in January 2024.
 - Battery and Energy Storage System updates are completed annually in April/May.⁴⁵ NorthStar observed the most recent update in April 2023, indicating there was no update in April/May 2024.
 - Avangrid does not have a complete SCADA system for NYSEG and RG&E, and 40 percent of substations do not feature Remote Terminal Units (RTUs).^{46 47} Avangrid uses workarounds such as “drag hand ammeters”⁴⁸ to obtain peak demand values and estimate minimum peak loads for NYSEG and RG&E.⁴⁹
 - The links on the utilities’ websites to the hosting-capacity maps are difficult to identify. They can be found using: Home Page>>Smart Energy>>Innovation>>Distributed Generation>>HC Portal.
 - A Google search also provides the link to ArcGIS.⁵⁰

⁴³ DR 780 Attachment 1

⁴⁴ DR 96 Attachment 1

⁴⁵ DR 1278

⁴⁶ DR 381

⁴⁷ An RTU is a microprocessor that transmits data from electric devices in substations to the control center.

⁴⁸ A drag hand ammeter is device that measures electric current.

⁴⁹ DR 393

⁵⁰ <https://www.nyseg.com/smartenergy/innovation/distributedgeneration>

10. Avangrid uses the State of New York Standardized Interconnection Requirements (SIR) for distributive generation interconnection applications. Avangrid maintains and updates its interconnection queue monthly for NYSEG and RG&E.

- NYSEG and RG&E provide website links for the process to interconnect with the systems.
 - There are three options available for distributive and renewable energy resources: Distributed Generation, Community Distributed Generation, and catch the wind. The websites can be accessed as follows:

<https://www.nyseg.com> >Smart Energy >Innovation

<https://www.rge.com> >Smart Energy >Innovation
 - The SIR can be obtained from the website by selecting Distributed Generation from the links at the top and then selecting the link to the online portal under Distributed Generation Application Process. NorthStar has verified that the portal is functional.
- Avangrid provides current information on the list of generators awaiting interconnection to NYSEG and RG&E systems (interconnection queue).
 - The queues are found both on the Capacity Hosting map site (ArcGIS) and on the utility website on the distributed generation page.
 - Avangrid provides a list of locations where interconnection requests have exceeded capabilities on its distributed-generation web page.⁵¹
 - Queues are updated monthly as generators are interconnected or the applications are withdrawn.⁵²

11. NWA solutions involve commitment from customers and energy market participants. While Avangrid's screening criteria are reasonable based on effort required to implement an NWA solution, prior to 2023 Avangrid often did not identify distribution system needs in a timely fashion to accommodate an NWA solution.

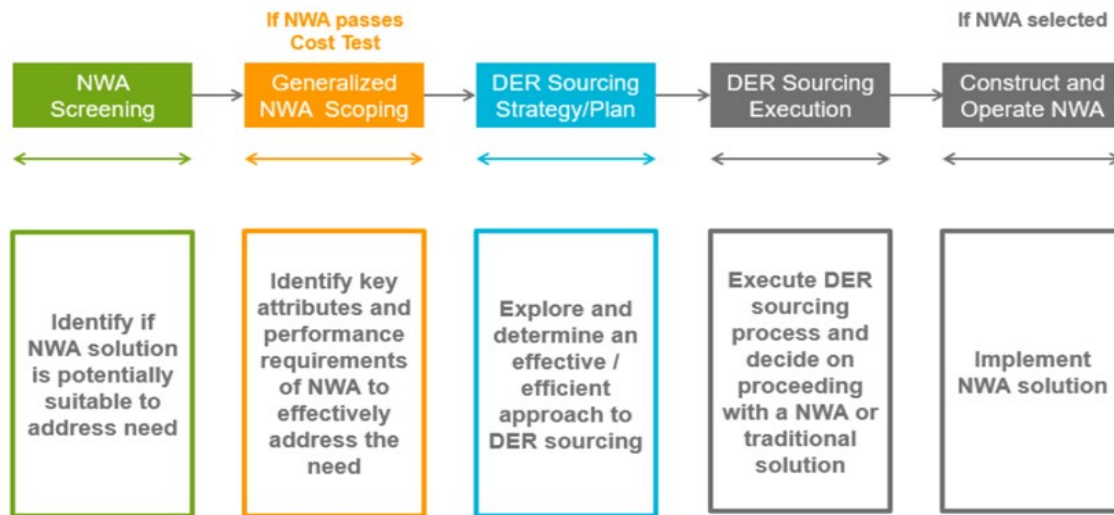
- **Exhibit V-8** outlines the five-step process from NWA screening to project implementation. To date, one NWA project at NYSEG is complete. Three other NWA projects are currently in step two.⁵³

⁵¹ <https://www.nyseg.com/smartenergy/innovation/distributedgeneration>

⁵² DR 95

⁵³ DRs 142, DR 142 Supp1 Attachment 1 and 392 Attachment 1

Exhibit V-8 NWA Solution – Project Development Process



Source: DR 142

- Avangrid has established a tool with four key inputs that results in a pass/fail for the consideration of an NWA solution. The inputs are as follow:
 - Project Suitability (load relief or reliability driven)
 - Timeline Suitability (not less than 36 months)
 - Cost Suitability (over \$1 million)
 - Current Asset Condition (equipment in poor condition must be replaced.)
- The tool allows other considerations that include the following:
 - Consideration of traditional solutions
 - Area of Impact
 - Disadvantaged Communities or Environmental Justice Areas
 - Estimated Load Relief and Duration⁵⁴
- Avangrid requires that all distribution system infrastructure investments be evaluated for an NWA solution.
 - Avangrid has stated that it evaluated 91 projects in late 2022 for the 2023 capital plan.
 - Of the 91 projects evaluated, Avangrid has stated that 19 were included in the 2023 Capital Plan.⁵⁵
 - The 19 projects are traditional solutions, not NWA solutions. NorthStar reviewed NWA screening tool results for 19 projects and found that all failed, largely due to

⁵⁴ DR 1116

⁵⁵ DR 1117.

timeline.⁵⁶ This indicates an insufficient distribution planning horizon in 2022 for the 2023 Capital Plan.⁵⁷

- The analysis of projects in late 2023, for the years going forward, identified three future system needs that passed NWA screening criteria.⁵⁸ This indicates that Avangrid increased its distribution planning horizon to better align with NWA planning and implementation requirements.

12. DER/CLCPA implementation is market-driven.

- Avangrid procures most of its generation energy and capacity through the NYISO Day Ahead and Real-Time Wholesale Energy Markets.
 - Avangrid plans to continue the purchase of energy and capacity in the same manner through 2030 and 2040.
 - Avangrid's future capacity portfolio will be dependent on NYISO and third-party providers – either through NYISO or directly contracted with the third-party provider.⁵⁹
 - Avangrid Renewables, an unregulated affiliate, is developing several renewable energy projects in New York.⁶⁰
 - The energy output from these projects could be part of the NYISO portfolio of generation providers.
- Avangrid participates in NYSPSC Case 20-E-0197. Case 20-E-0197 is proceeding to implement local transmission planning to accommodate renewable energy growth and the Community Benefit Act. There are two phases to the proceeding: Phase 1 includes projects that are immediately actionable to satisfy traditional system-reliability and safety needs, and Phase 2 projects increase capacity. Planning was conducted by all New York electric utilities.⁶¹
 - Avangrid identified 13 local transmission projects in its Phase I analysis for the NYSEG and RG&E systems. Need dates are between 2027 and 2030.⁶²
 - Avangrid identified 33 local transmission projects in its Phase 2 analysis. Need dates are between 2026 and 2030.⁶³

⁵⁶ DR 1117 Attachments 1 and 2.

⁵⁷ DR 1117 Attachment 2

⁵⁸ DR 392 Attachment 1

⁵⁹ DR 683

⁶⁰ <https://www.avangrid.com/w/roaring-brook-wind-power-project>. <https://www.avangrid.com/w/north-ridge-wind-farm>. <https://www.avangrid.com/w/mad-river-wind-farm>. <https://www.rge.com/web/avangrid-1/w/new-yorks-newest-wind-farm-now-under-construction>. Accessed September 18, 2024.

⁶¹ NYSPSC Order on Phase 1 Local Transmission and Distribution Project Proposal, Case 20-E-0197, February 11, 2021 <https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=20-E-0197>. Accessed September 18, 2024.

⁶² DR 1115 Attachment 1

⁶³ DR 1115 Attachment 2

13. Current DSIP initiatives serve multiple purposes.

- AMI technology, while necessary for DER installations, assists in load studies and reducing operating costs. It eliminates issues associated with inaccessible indoor meters and estimated bills.
- SCADA, while necessary for control of DER installations, is necessary for remote system control, reducing operating costs and improving operational visibility.
- Automatic Switchgear, while necessary for DER interconnections, improves system reliability and reduces operating costs by clearing outages before dispatching a crew.⁶⁴
- Avangrid does not collect, analyze or report on DER performance.⁶⁵

14. VDER (CDG Value Stack) manual crediting and billing is unreliable.

- The process is labor intensive, dependent on accurate manual data input and daily spreadsheet updates from 185 CDG entities representing over 50,000 retail utility customers.⁶⁶
- Avangrid uses the following data inputs to determine Value Stack components:
 - LBMP – hourly NYISO day-ahead market price.
 - ICAP – priced monthly based on NYISO’s spot capacity auctions.
 - EC – NYSPSC determines the value as described in Case 15-E-0751.
 - DRV – For Phase 1 CDGs, it is fixed for ten years. For Phase 2 CDGs, based on the approved marginal cost analysis.
 - LSRV – For Phase 1 CDGs, it is fixed for ten years and for Phase 2 CDGs, it is based on the lowest kW injection in the system.
 - Market Transition Credit – based on an assigned portion of credits in effect as the time of the project’s acceptance.
 - Community Credit – based on an assigned portion of credits in effect as the time of the project’s acceptance.⁶⁷
- Review of a small sample of customer bills, prior to the migration to a new billing system found that the manual process produces errors. Of seven bills reviewed, NorthStar found errors in the calculation of MTC.⁶⁸
- Avangrid’s internal audit department conducted a review of the NYSEG and RG&E CDG billing process in 2022 and found the process too dependent on manual input, resulting in billing delays.⁶⁹

⁶⁴ 2023 DSIP, DR 97 and all attachments

⁶⁵ DR 137

⁶⁶ DR 153 Attachment 2 and DR 1006

⁶⁷ DR 1310

⁶⁸ DR 1234 Attachment 7c

⁶⁹ DR 154

- On December 9, 2023, Avangrid went live with automated billing of CDG subscribers. The goal is to migrate 12 hosts per month to the automated system. The migration is scheduled for completion in Q2 2025.⁷⁰ For more information, see **Chapter XI – Information Systems**.

15. Avangrid’s current demand-response program is consistent with programs seen throughout New York. Avangrid did not provide details on two proposed DR programs for NYSEG and RG&E.

- Avangrid is proposing a pilot demand-response program for direct load control of natural gas heating equipment.⁷¹ This is a winter demand-response program, which is unusual.
- Avangrid is proposing direct load-control of “behind the meter” storage batteries.
- Avangrid did not provide details of two proposed DR programs for NYSEG and RG&E.⁷²

16. Avangrid has not adopted and implemented a formalized and integrated Asset Management software/platform previously recommended for NYSEG and RG&E. The absence of a risk-based, integrated asset-management software/platform contributes to NYSEG’s poor SAIFI performance.

- Avangrid does not have an integrated asset-management (AM) program and has shown limited commitment to implementing one, as noted below:

“Currently, the Companies’ [sic] do not have a formalized overall Asset Management (AM) program. Over the past 12 years we have familiarized ourselves with the Institute of Asset Management (IAM) concepts including ISO 55000. In 2020, we worked on an AM roadmap where we performed a gap analysis and identified our key strengths and areas of concern. An identified key area of concern was the lack of a documented strategic asset management plan.

Recently, Asset Management hired a third-party consultant to assess the companies’ AM landscape with the goal of developing a comprehensive Asset Management Strategy, an Asset Management Policy, and an Asset Management Plan all potentially based on ISO 55000 (Asset Management framework) and ISO 31000 (Risk Management framework).”⁷³

- In 2021, Avangrid engaged a third-party consultant to assess the AM landscape. There has been little progress toward implementing recommendations from the benchmarking/assessment study.⁷⁴

⁷⁰ DR 1163

⁷¹ DR 152

⁷² DR 152, DR 1118, and DR 1119

⁷³ DR 391

⁷⁴ DR 11 Attachment 1

- The study recommended the development of a formal AM and planning organization across Avangrid's Gas and Electric Operations. Avangrid chose not to implement this recommendation, but reorganized its Process and Technology, System Planning, and Portfolio Management into a new organization. This new organization includes an Asset Management organization. Avangrid found many of these functions were duplicative across utilities and believes the reorganization improves efficiency, collaboration and portfolio management.⁷⁵
- The study recommended transitioning from conventional time-based maintenance programs to an optimized program based on asset health and performance. Avangrid is in the process of developing a consolidated database and scoring algorithms for its substation breakers and transformers.⁷⁶
- The study recommended implementation of an asset-performance management system/software solution. Avangrid has stated that it is evaluating this recommendation.⁷⁷

17. Avangrid's current approach to asset management is limited and does not meet the standard of an integrated asset-management program.

- Avangrid has not solicited or procured an asset-management software/platform. Minimal progress has been made since the 2021 recommendation. Avangrid's lack of a formal asset management software/platform and the use of a data management system will not meet NYSEG's and RG&E's asset-management needs.
- Avangrid does not perform analyses on all asset classes. Avangrid only developed analyses for substation transformers and circuit breakers. NorthStar identified over 100 possible system assets to be considered for inclusion in an asset-management plan. Avangrid has stated that it:

"... has well-established transformer and circuit breaker asset health and risk assessment algorithms which are used to evaluate the Companies' population of each asset category. In 2023, following a 2-year Avangrid-wide effort, the AM team established and advanced a process to comprehensively assess the overall condition of our substations and prioritize the list of outstanding system needs in order of system severity. We are currently working on enhancing the transmission line health and risk assessment algorithm."⁷⁸

- In the currently defined asset-management plan, Avangrid has stated that it is beginning to perform substation-level risk analysis. However, that is not possible with only two asset classes.⁷⁹ Substation assets also include control buildings/houses, relays, substructures, switches, potential transformers, circuit transformers, lightning arrestors, wave traps, steel towers, conductors, insulators,

⁷⁵ DR 1199

⁷⁶ DR 1200 and DR 1206

⁷⁷ DR 1201

⁷⁸ DR 391

⁷⁹ DR 391 Supp Attachment 1

grounding, gating, etc. In 2023, the largest contributors to SAIFI associated with equipment failure included the following distribution system equipment:

- Defective insulators
 - Pole damage/failure
 - Overhead equipment failure
 - Loose connections⁸⁰
- Risk categories are not defined. Electric system reliability is dependent on identifying the highest risk systems/components that jeopardize continuous service. Risk at the transmission-system level, distribution-system level, load-pocket level, substation level and equipment level are not considered. Often, the combination of less than the highest risk assets is a greater risk to system reliability than one or two individual circuit breakers or transformers.⁸¹
 - A means for identifying assets within each asset class and obtaining relevant parameters such as age, maintenance history, material and condition has not been developed. Avangrid does not have a prioritized road map for obtaining, warehousing and updating asset data.⁸²

18. Avangrid does not fully spend equipment/asset replacement budgeted dollars and defers resiliency projects, impacting NYSEG SAIFI scores.

- Avangrid funds several equipment/asset replacement programs to improve reliability. **Exhibit V-9** provides the list and the budget-versus-actual expenditures for these programs over the past five years for NYSEG.

**Exhibit V-9
NYSEG Reliability Initiatives**

Program	Budget 2019-2023	Spend 2019-2023	Budget to Actual
Wood Pole Inspection & Treatment	\$11,966,774	\$9,887,114	83%
Breaker Overhauls	\$2,921,636	\$3,097,470	106%
Oil Test Program	\$633,000	\$579,808	92%
Purchase Transformer Bushings	\$966,369	\$790,017	82%
Substation Transformer PCB Retrofills	\$2,060,200	\$1,690,532	82%
Transformer LTC RMV Monitoring	\$417,000	\$210,492	50%
Aluminum Base Dead End Bell Insulator Replacement	\$4,904,005	\$3,742,857	76%
Helicopter Visual & Infrared Inspection	\$2,959,946	\$3,021,665	102%
Comprehensive Visual Inspection - Drone	\$1,570,744	\$1,576,453	100%

⁸⁰ DR 685 Attachment 1

⁸¹ DR 391 Supp Attachment 1

⁸² DR 391 Supp Attachment 1

Steel Transmission Pole Inspection and Maintenance	\$6,432,732	\$6,679,135	104%
Distribution Infrared Inspection	\$3,054,069	\$2,737,947	90%
Distribution Line Inspections/Transmission Line Inspections	\$5,074,955	\$5,523,972	109%
Total	\$42,961,430	39,537,462	92%

Source: DR 608 Attachment 1

- Avangrid initiated its resiliency program in 2019 and has completed 37 projects. The program is based on a study of the worst performing circuits during severe weather and identifying system solutions. A review of the 2023-2026 Resiliency Plan dated May 24, 2022 found 13 projects planned for NYSEG in 2023. Of the 13 projects, only four were completed and eight were deferred to 2024 and 2025. There is no data on the thirteenth project. NYSEG's inability to complete resiliency work as planned has a direct impact on reliability.⁸³

19. NYSEG does not perform adequate distribution system vegetation trim cycles. NYSEG's vegetation-management is deficient and NYSEG will continue to be challenged in meeting annual SAIFI goals if vegetation management is not a priority.

- NYSEG has not met its SAIFI reliability targets over the past five years. RG&E, with the exception of 2021, has consistently met its SAIFI reliability targets. **Exhibit V-10** provides the utilities' SAIFI performance for the past five years. Performance numbers are highlighted to show when Reliability Performance Mechanism (RPM) targets.⁸⁴

Exhibit V-10
SAIFI Performance (2019-2023)

Year	NYSEG Actual	NYSEG RPM	RG&E Actual	RG&E RPM
2019	1.35	1.20	0.72	0.90
2020	1.36	1.20	0.88	0.90
2021	1.46	1.20	1.13	0.90
2022	1.45	1.20	0.83	0.90
2023	1.29	1.20	0.71	0.90

Source: NYSPSC Case 24-E-0140 2023 Electric Reliability Report

(<https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterSeq=72953&MNO=24-E-0140>), DR 685 Attachment 1, DR 686 Attachment 1

- Sixty-six percent of the NYSEG system interruptions in 2023 were attributable to vegetation contact and equipment failure.⁸⁵ Vegetation contact alone accounted for 39 percent of the system interruptions in 2023.

⁸³ DR 126, DR 126 Attachment 1, DR 1120 Attachment 1 and Fact Verification.

⁸⁴ The RPM are Service Standards set by the NYSPSC in the most recent rate plan.

⁸⁵ NYSPSC Case 24-E-0140 2023 Electric Reliability Report (<https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterSeq=72953&MNO=24-E-0140>), DR 685 Attachment 1, DR 686 Attachment 1 and NorthStar Analysis

- NYSEG has 29,300 miles of distribution conductor. Since 2017, the trim cycle has moved from 11 to eight years.⁸⁶ **Exhibit V-11** provides NYSEG's calculated trim cycles.

Exhibit V-11
NYSEG Vegetation Trim Cycles

Year	Distribution (miles trimmed)	Cycle (years)	Transmission (miles trimmed)	Cycle (years)
2017	2,778	11	746	6
2018	3,494	8	832	5
2019	4,242	7	658	7
2020	3,418	9	749	6
2021	3,838	8	743	6
2022	3,992	7	952	5
2023	3,803	8	877	5

Source: DR 26 Attachment 1, DR 121 Attachment 1, DR 122, DR 644, DR 646, and DR 684

- NYSEG has spent its vegetation-management budget at the end of three years (2019-2021) and still failed to meet its SAIFI target. **Exhibit V-12** provides NYSEG's budget-to-actual spend for its vegetation-management.

Exhibit V-12
NYSEG Budget-to-Actual Distribution: Vegetation Management

Year	Distribution Budget	Distribution Expenditure	Difference	Variance
2019	\$ 34,252,153	\$ 33,952,319	\$ 299,834	99.1%
2020	\$ 42,147,338	\$ 39,100,459	\$ 3,046,879	92.8%
2021	\$ 41,455,200	\$ 44,184,076	\$ -2,728,876	106.6%
Three Year Subtotal	\$ 117,854,691	\$ 117,236,854	\$ 617,837	99.5%
2022	\$ 53,516,279	45,336,339	\$ 8,179,940	84.7%
2023	\$ 56,357,524	55,189,055	\$ 1,168,469	97.9%
Two Year Subtotal¹	\$ 109,873,803	\$ 100,525,394	\$ 9,348,409	91.5%
Five Year Total	227,728,495	217,762,247	\$9,966,248	95.6%

Source: DR 645 Attachment 1

Note 1: Sum of years may differ from total due to rounding.

- NYSEG has committed to a six-year distribution system trim cycle by 2029.⁸⁷

⁸⁶ DR 26 Attachment 1

⁸⁷ DR 26 Attachment 1 Page 75

20. Sufficient detail was not provided to evaluate whether internal labor is charged related to vegetation management for storm response.

- Avangrid stated that it engages external crews for vegetation management during storm response for NYSEG and RG&E.
 - Avangrid engages vegetation-management tree crews for NYSEG and RG&E storm response according to its emergency preparedness process.
 - Labor costs associated with these requested storm crew resources are allocated using storm-specific cost collectors, or account numbers.
 - Crews are instructed to charge these storm-specific numbers for storm-related work to ensure proper accounting. All invoices are reviewed internally at the field level.⁸⁸
- NorthStar requested “total vegetation management labor charges for all storm-specific cost collectors or account numbers.” No information was provided which distinguished between external and internal costs recorded on storm response and vegetation management cost collectors. As such, NorthStar is prohibited from verifying what internal labor charges, if any, are included in the applicable cost collector.⁸⁹
- As a result, it is NorthStar’s understanding that substantially all vegetation management costs recorded to storm events are external charges. NorthStar did not evaluate the accuracy or incrementality of external charges.

21. The Outage Prediction Model provides a reasonable framework to reduce customer outage time and increase operational efficiency.

- NorthStar attended a demonstration of the Outage Prediction Model and found the model is integrated with the Customer Call Center, the SCADA system and the Spectrum OMS.⁹⁰
- The demonstration showed how the model predicts an outage based on system logic and rules. Predictions are completed on a transformer, device and segment basis.
- NYSEG and RG&E have experienced only minor improvements in system CAIDI performance between the five years before installation and the five years after installation.⁹¹ Avangrid stated that large improvements would not be expected, since primary CAIDI drivers are travel and repair times.

“Outage predictions help us provide information to customers (estimated time of restoration) as well as better direct crews to begin restoration & repair activity. In many cases this will allow quicker restoration, although the main drivers of outage duration

⁸⁸ DR 116

⁸⁹ DR 1009

⁹⁰ DR 117 and DR 156

⁹¹ Years 2017 and 2018 – Installation years excluded

remain travel time for crews to get to the work location and the time to carry out physical repairs.

CAIDI trends are shown below. These trends are influenced by many factors – it is not possible to state the direct impact on CAIDI of the outage prediction model.”⁹²

22. Avangrid’s process for transferring ownership of NYSEG and RG&E street lighting assets to municipalities is appropriate and follows principles of FERC accounting for mass property assets.

- Financial records in the street light plant account are segregated by vintage (installation) year, circuit and property tax jurisdiction (PTJC). The circuit and PTJC are used to identify assets in each town and historical acquisition value, less accumulated depreciation and including work in progress.⁹³
- When transferring street lighting assets, Avangrid determines the number of fixtures/lamps from the NYSEG/RGE SAP CRM billing for each rate classification by customer.⁹⁴ The plant record system is updated by reducing the historical acquisition value of assets sold through retirement of asset records. Historical acquisition value and gross proceeds are recorded to the accumulated depreciation reserve account.⁹⁵
- As shown in **Exhibit V-13**, NYSEG’s street lighting balance has remained relatively constant over the last five years, and RG&E’s street lighting balance has declined. As the changes in these balances are uncorrelated to the Companies’ larger rate base, it is indicative of ongoing divestiture consistent with the Companies’ descriptions. Avangrid has sold street lighting systems to 40 municipalities over the past five years.⁹⁶

Exhibit V-13
Street Lighting and Signal Systems (millions)

Entity	2018	2019	2020	2021	2022
NYSEG	\$47,812	48,411	51,595	51,607	51,986
RG&E	\$18,806	18,153	17,868	17,594	16,200

Source: FERC Form 1’s for each respective entity and year

- Similar to findings contained in **Chapter IV - Budget and Finance**, there are unusual unit counts and unit costs within the fixed-asset ledger for account 373 (street lighting and signal systems). Refer to the recommendation in **Chapter IV – Budget and Finance**, regarding improvements within plant account processes and records.

⁹² DR 1114

⁹³ DR 145

⁹⁴ DR 146

⁹⁵ DR 146

⁹⁶ DR 149 Attachment 1

D. RECOMMENDATIONS

1. Improve the electric load forecast model(s) used to address issues specific to NYSEG and RG&E, focusing on the following:
 - 1.1. Accuracy
 - 1.2. Weather-normalization methodologies
 - 1.3. Sector segmentation
 - 1.4. Forecasting horizon
 - 1.5. CLCPA considerations
 - 1.6. Econometric equation specification
2. Develop a comprehensive asset-management improvement program with formal completion commitments. Implementation elements should include the following:
 - 2.1. Data needs assessment
 - 2.2. Software needs assessment
 - 2.3. System needs assessment
 - 2.4. Staffing needs assessment
 - 2.5. Change management assessment
 - 2.6. Functional specifications
 - 2.7. Evaluation of proposed systems, business and system integrators
3. Implement a trim cycle of five or six years consistent with the last Joint Proposal.
4. Edit the link to the Hosting Capacity website to read “Hosting Capacity Portal (PV, BESS, Electrification”. Update hosting-capacity maps according to the documented schedule.
5. Conduct an independent, third-party audit with DPS oversight of storm costs to determine the accuracy of costs recorded to storm events that comply with the current rate plan and to provide more timely recovery of storm expenditures for NYSEG and RG&E. This includes but is not limited to tracing a major storm and a vegetation management work order to financial statements and reviewing the work order procedure to ensure there are no overlapping or duplicate cost collectors in storms, vegetation management, and capital. As a substantial portion of storm expenditures are paid to external parties, it is difficult to evaluate the reasonableness or accuracy of costs without auditing a valid sample of costs.

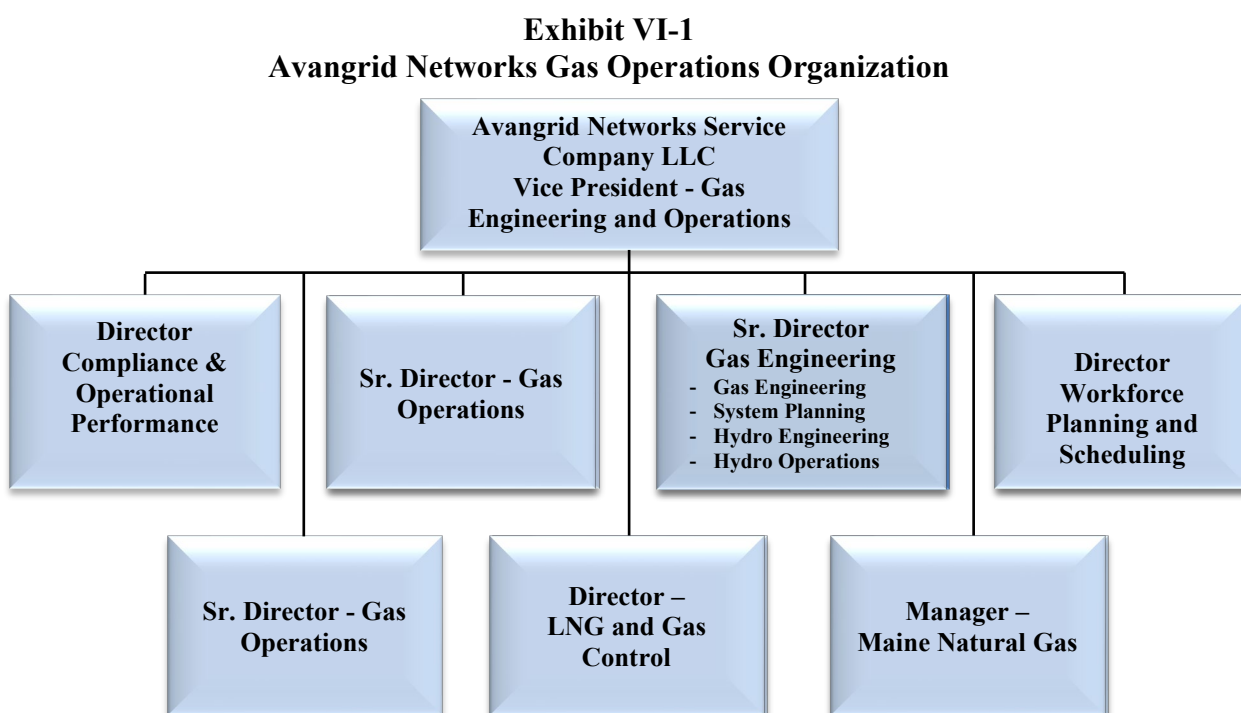
VI. GAS OPERATIONS

This chapter presents NorthStar's audit findings and conclusions related to NYSEG and RG&E Gas Operations as specified in the Request for Proposal.

A. BACKGROUND

Gas Engineering and Operations

The Avangrid Networks, Inc. (Avangrid) Gas Engineering and Operations organization is responsible for gas system reliability such as pressure, gas pipeline safety, operations, maintenance and status-reporting on behalf of NYSEG and RG&E. The organization is shown in **Exhibit VI-1**.



Source: DR 1 Attachment 1 and DR 26 Attachment 1

From 1991 through 2010, the high incidence of serious injuries related to natural gas distribution and transmission pipelines prompted the U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) to enact a final rule establishing distribution system and transmission system integrity management requirements (DIMP and TIMP programs, respectively) for natural gas companies.¹ The purpose of these requirements was to improve public safety by providing a framework for assessing system risk

¹ Title 49 Part 192 of the Code of Federal Regulations (CFR), enacted February 12, 2010, <https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/technical-resources/pipeline/gas-distribution-integrity-management/61706/historyofdimp06152011.pdf>

and repairing or replacing high-risk facilities (pipelines and related system components). Key elements of the code include minimum requirements in the following areas:

- Operation of pipeline facilities – Subpart L
- Pipeline personnel qualifications – Subparts E, F and N
- Development of an integrity-management program covering gas transmission pipelines (TIMP) – Subpart O
- Development of an integrity-management program covering gas distribution pipelines (DIMP) – Subpart P

In addition to PHMSA requirements, the State of New York Codes, Rules and Regulations (NYCRR) prescribes minimum safety requirements for the design, fabrication, installation, inspection, testing and operation and maintenance of gas transmission and distribution systems, including gas gathering lines, gas pipelines, gas compressor stations, gas metering and regulating stations, gas mains, service lines, gas storage equipment of the closed-pipe type fabricated or forged from pipe or fabricated from pipe and fittings, and gas storage lines not covered by 49 CFR §192.

Key elements of Title 16 NYCRR Part §255 and Part §261 include the following:²

- General (§255.1 to 255.46)
- Materials (§255.51 to 255.96)
- Pipe Design (§255.101 to 255.125)
- Design of Pipeline Components (§255.141 to 255.193)
- Overpressure Protection (§255.194 to 255.204)
- Welding of Steel in Pipelines (§255.221 to 255.245)
- Joining of Materials Other Than by Welding (§255.271 to 255.287)
- General Construction Requirements for Transmission Lines and Mains (§255.301 to 255.329)
- Customer Meters, Service Regulators, and Service Lines (§255.351 to 255.385)
- Requirements for Corrosion Control (§255.451 to 255.491)
- Test Requirements (§255.501 to 255.517)
- Upgrading/Conversion (§255.551 to 255.559)
- Operations (§255.601 to 255.631)
- Maintenance (§255.701 to 255.758)
- Accidents and Leaks (§255.801 to 255.831)
- Transmission Pipeline Integrity Management (§255.901 to 255.1015)
- Minimum requirements for piping beyond the meter (§261.1-65).

More than a decade has passed since the first DIMPs were filed in August 2011. Ongoing primary risks to pipeline systems include deterioration due to corrosion, flooding and excavation accidents. Increased potential for leaks in pipeline mains and services is referred to as leak-prone pipe (LPP). NYSEG and RG&E use the term leak-prone main (LPM) for leak-prone pipe. LPM generally includes unprotected steel, cast iron, wrought iron and some

² <https://www.law.cornell.edu/regulations/new-york/title-16/chapter-III/subchapter-C/part-255>

early vintages of plastic pipe. Public safety is improved when these types of pipes are replaced in the pipeline system.

Avangrid Networks defines LPP in its Leak-Prone Main Criteria (LPMC) document dated October 6, 2023.³ There are three categories.

- Category A piping is considered leak-prone based on characteristics and properties regardless of damage or leak history. Leak-prone designation is based on available source data, including GIS records, SAP data, as-built maps and records, and O&M inspection documentation (for example, excavation reports). Category A piping includes the following pipeline materials:
 - Cast iron
 - Wrought iron
 - Bare steel (with or without cathodic protection (CP))
 - Unprotected steel (Pre-8/1/1971 without CP)
 - Aldyl-A PE (typically installed prior to 1979)
 - Fiberglass
- Category B piping may be leak-prone if there is evidence of defects or other integrity issues. Category B piping includes the following:
 - Material quality defects
 - Construction/installation defects
- Category C piping is not considered leak-prone in its current state and is not slated for upgrade. However, there may be attribute(s) after an increase in MAOP⁴ that result in a configuration that would increase risk for leakage. In New York, pipe segment MAOP should be a leak risk consideration within any of the A, B and C leak-prone categories as recommended by New York Management Audit (Case 16-M-0610). Category C pipe includes the following:
 - All steel piping installed prior to approximately 1965 and planned for a pressure upgrade, are leak prone due to vintage construction practices.
 - Steel piping installed between approximately 1965 and 8/1/1971 and planned for an upgrade may be identified as leak prone based upon supporting records and documentation.

Avangrid's LPMC requires that the operating companies maintain unique tracking numbers for all Leak Prone Mains and rank these mains according to risk.

Since 2011, NYSEG and RG&E have been removing LPM from their systems. **Exhibit VI-2** provides the inventory of pipeline mains by material.

³ DR 521 Supp Attachment 1

⁴ Maximum Allowable Operating Pressure

Exhibit VI-2
NYSEG and RG&E Pipeline Mileage by Year

NYSEG	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Aldyl-A¹ (AA)²													
Bare Steel (S)	154	132	121	103	90	76	64	51	43	37	34	31	25
Bare Steel with CP (SP)	9	8	8	6	4	6	5	4	3	3	3	3	3
Coated Steel (SW)	139	130	125	89	82	68	76	73	68	66	56	52	51
Coated Steel with CP (SWP)	2,201	2,194	2,192	2,222	2,224	2,224	2,203	2,190	2,174	2,163	2,148	2,129	2,105
WI/CI/DI³	28	24	22	19	17	14	11	8	8	6	6	4	3
Plastic	2,193	2,245	2,275	2,313	2,355	2,408	2,450	2,497	2,530	2,565	2,606	2,648	2,688
Total	4,723	4,733	4,743	4,752	4,772	4,796	4,808	4,824	4,827	4,841	4,852	4,866	4,875
RG&E	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Aldyl-A (AA)													
Bare Steel (S)	152	165	62	78	71	41	33	17	12	10	5	4	1
Bare Steel with CP (SP)	14	14	14	14	14	14	14	7	5	4	3	1	1
Coated Steel (SW)	189	190	178	172	221	172	55	36	43	51	47	46	42
Coated Steel with CP (SWP)	2,458	2,468	2,460	2,536	2,436	2,444	2,533	2,553	2,517	2,496	2,464	2,442	2,415
WI/CI/DI³	66	66	112	68	66	19	8	26	0	0	0	0	0
Copper	0	0	0	0	0	0	0	0	0	0	0	0	0
Plastic	1,860	1,919	1,962	2,049	2,111	2,159	2,225	2,252	2,312	2,353	2,406	2,454	2,502
Total	4,740	4,822	4,788	4,918	4,920	4,849	4,868	4,891	4,890	4,914	4,925	4,947	4,961

Source: DR 878 Attachment 1 and DR 879

Note 1: DR 514 Attachments 1-4 identifies Aldyl-A on the system however, Avangrid did not provide mileage in DR 878.

Note 2: Avangrid uses abbreviations for the types of pipeline material. The abbreviations are shown in parentheses after the material name.

Note 3: Wrought Iron, Cast Iron, and Ductile Iron

Based on **Exhibit VI-2**, the utility systems can be characterized as:

- There are nominally 5,000 miles of natural gas main pipeline on each system.
- In 2023, 55 percent of the NYSEG system mains and 50 percent of the RG&E system mains are constructed with plastic pipeline.
- In 2023, 43 percent of the NYSEG system mains and 49 percent of the RG&E system mains are constructed with SWP.
- Coated Steel with Cathodic Protection, SWP main pipeline, is generally not considered leak prone. It is Category C pipeline based on the materials listed as Category A pipeline.⁵
- This results in approximately 82 miles of Category A pipeline on the NYSEG system and 44 miles on the RG&E system in 2023.⁶

Gas Load Forecasting

Avangrid provides forecasting services for NYSEG and RG&E. Load forecasts serve as fundamental input for the following:

- Financial forecasting and budgeting.
- Supply-procurement planning.
- Transmission-system reliability and infrastructure planning.
- Distribution-system reliability and infrastructure planning.
- Environmental and regulatory planning.

Numerous factors contribute to load forecasting, including economic drivers, weather considerations, model development, appliance saturation surveys and load modifications.

Two organizations are responsible for NYSEG and RG&E gas load forecasting.

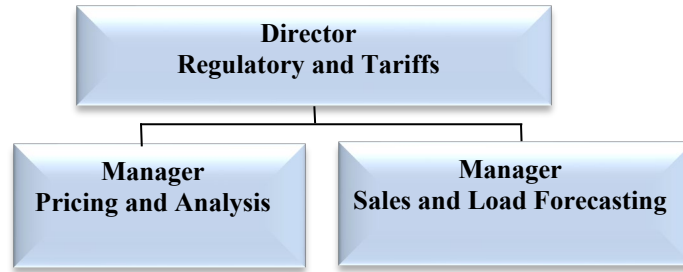
- Avangrid's Sales and Load Forecasting group develops the natural gas sales forecasts. Avangrid's Sales and Load Forecasting organization is led by a manager who reports to the Director of Regulatory and Tariffs as shown in **Exhibit VI-3**
- The Gas Supply group develops the gas design-day forecast.⁷ The Gas Supply group reports to the Office of the NYSEG and RG&E President and CEO and is led by a Senior Director of Energy Services as shown in **Exhibit VI-4**.

⁵ DR 521 Attachment 1

⁶ DR 521 Attachment 1 and DR 878 Attachment 1

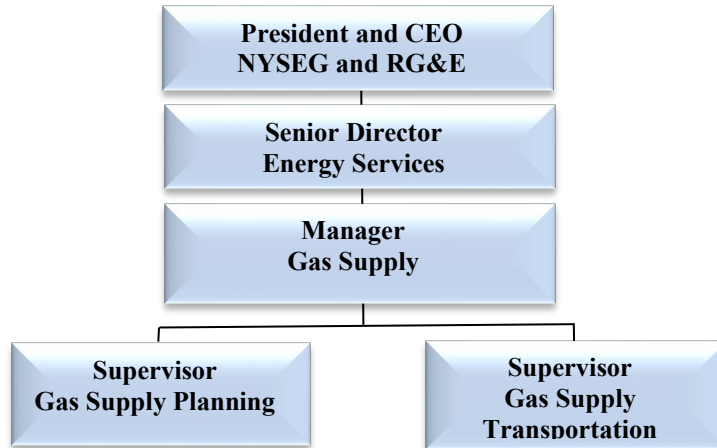
⁷ DR 1 Attachment 1, IR 13, and IR 14

**Exhibit VI-3
Avangrid's Regulatory and Tariffs Organization Chart**



Source: DR 1 Attachment 1, DR 26 Attachment 1

**Exhibit VI-4
Energy Services Organization Chart**



Source: DR 1 Attachment 1, DR 26 Attachment 1

Exhibit VI-5 provides highlights of the decline in natural gas sales.

**Exhibit VI-5
Historical Weather Adjusted Natural Gas Sales
(Dekatherms)**

	NYSEG	RG&E
2019	56,687,530	55,383,710
2020	55,886,516	54,513,451
2021	55,241,380	54,013,715
2022	55,408,256	54,687,531
2023	56,188,458	54,345,484
Decline	-0.9%	-1.9%

Source: DR 419 Attachment 1

- NYSEG natural gas sales have declined slightly, attributable to a five percent reduction in industrial sector sales from 2019 to 2023.⁸
- RG&E experienced a decrease in natural gas sales from 2019 to 2023, the result of an 11 percent reduction in industrial sector natural gas sales.

B. AUDIT SCOPE ITEMS

- Assess the leak prone pipe replacement programs, including flood zone management, risk models, and other factors used to determine mains to be replaced, verification that high-risk pipes are replaced, and the program's impact on total system leaks.
- Evaluate tracking and reporting processes for data related to leak prone pipe positive incentives.
- Evaluate the process for responding to reports of gas odors, leaks, and emergencies, including an assessment of recent emergency response time performance, how emergency response data is recorded, if qualified individuals responded timely, and how the accuracy of this data is ensured.
- Evaluate changes to the gas load forecasting processes since the previous management audit.

C. FINDINGS AND CONCLUSIONS

1. Avangrid's NYSEG/RG&E LPM replacement program commitment is based on the Joint Proposal.

- The 2019 Joint Proposal continues Avangrid's existing targets for NYSEG and RG&E LPM retirement.⁹
 - NYSEG and RG&E must retire a minimum of 30 miles of LPM annually, or 90 miles cumulatively, from the calendar year 2020 to 2022. If the annual mileage is not met, the three-year cumulative target will be used. NYSEG and RG&E would incur a 45 basis point Negative Revenue Adjustments (NRA) for the failure to meet the three-year cumulative target. For each full mile of LPM replaced exceeding the targets, NYSEG and RG&E would receive a Positive Revenue Adjustment of two basis points up to a maximum of 10 basis points. NYSEG and RG&E are allowed to include LPM eliminations resulting from abandonment, disuse or any other means ending the use of LPM while still serving customer needs, including non-pipe alternatives implemented in lieu of LPM replacements.
 - The metric requires the use of a risk-based prioritization model and allows for the inclusion of Distribution Integrity Management Program pre-1971 wrapped steel, provided there is adequate justification and supporting documentation.

⁸ DR 419 Attachment 1 and DR 422 Attachment 1

⁹ DR 960, CASES 19-E-0378 et al, page 157

- The LPM metric advances State and NYSPSC goals to decrease greenhouse gases from the environment and is in the public interest.
- Avangrid reported that the three-year cumulative pipeline replacement target was achieved for 2020 through 2022. Pipeline replacement data was not reported for 2023 or 2024 to date.¹⁰
- Beginning in CY 2023, NYSEG and RG&E will be subject to the following leak prone main mileage targets:¹¹

Exhibit VI-6
NYSEG and RG&E Leak Prone Pipe Replacement Targets

Leak Prone Main Removal				
Total		CY2023	CY2024	CY2025
	Target (Miles)	<30	<27	<24
	NRA	15	15	15
Cumulative	Target (Miles)	<81		
	NRA	45		

Source: Case 22-G-0320, June 14, 2023, Appendix L

- As set forth above and to eliminate negative revenue adjustments, NYSEG and RG&E will replace, at a minimum, the following miles of leak prone main: 30 miles in CY2023; 27 miles in CY2024; and 24 miles in CY2025. If either NYSEG or RG&E fails to meet these annual mileage targets, the applicable Company will incur an NRA of 15 basis points.
- If the annual mileage target is not met in either CY 2023, 2024 or 2025, then a 3-year cumulative target of 81 miles can be used as the target. If the 3-year cumulative target is being utilized as the annual mileage target, then a combined NRA of 45 basis points will be incurred if the target is not met.
- The annual leak prone pipe mileage targets will continue for future calendar years at the same levels identified for CY2025 until changed by the NYPSC.
- While the 2019 Joint Proposal establishes Avangrid's targets for NYSEG and RG&E LPM retirement and addresses negative revenue adjustments for non-compliance, it does not include positive incentives for leak prone pipeline replacement greater than target levels.¹²

¹⁰ DR 166 Attachments 1 - 6

¹¹ Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Rochester Gas and Electric Corporation for Gas Service, Case 22-G-0320, Appendix L, June 14, 2023

¹² Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Rochester Gas and Electric Corporation for Gas Service, Case 22-G-0320, Appendix L, June 14, 2023

2. Avangrid's LPM data is inconsistent and therefore unreliable. Replacement targets are misleading.

- Avangrid states:

“In 2023 NYSEG identified 1652 Leak Prone Main (LPM) segments totaling 249.08 miles. In 2023 RG&E identified 1282 LPM segments totaling 254.36 miles. A total of 2934 LPM segments totaling 503.44 miles are identified.”¹³

- The composition of these segments is shown in **Exhibit VI-7**.

Exhibit VI-7
Reported Composition of Leak Prone Portfolio - 2023

	NYSEG		RG&E	
	Segments	Miles	Segments	Miles
Aldyl-A (AA)/PE ¹	71	8.7	0	0
Bare Steel (S)	281	32.4	58	7.6
Bare Steel with CP (SP)	5	1.1	16	0.6
Coated Steel (SW)	315	43.3	238	46.3
Coated Steel with CP (SWP)	949	159.2	969	199.9
WI/CI/DI ³	31	4.3	1	1 foot
Total	1652	249.0	1282	254.4

Source: DR 514 Attachments 4 and 8

Note 1: PE is Polyethylene Plastic

- In some of the data reported, LPM mileage is greater than the NYSEG and RG&E entire system mileage. For example, as shown in **Exhibit VI-7**, Avangrid identified Aldyl-A on the system as LPM. However, Avangrid did not provide this mileage as shown in **Exhibit VI-2**.¹⁴ Other pipeline materials show similar inconsistencies.

- Avangrid also stated:

“NYSEG and RG&E have approximately 82 miles and 44 miles respectively of traditional LPM remaining as of year-end 2023.”^{15 16}

- Avangrid also stated:

“NYSEG and RG&E have not established or received PSC approval of any long term plan to replace the approximately 1,800 and 1,500 miles (respectively) of pre-1971 steel and Aldyl-A plastics after the traditional LPM has been replaced.”^{17 18}

¹³ DR 841

¹⁴ DR 514 Attachments 1-4 and DR 878.

¹⁵ DR 842

¹⁶ The 82 miles at NYSEG and 44 miles at RG&E consist of bare steel, cathodically protected steel, coated/wrapped steel and cast/wrought iron. Calculated from DR 878 Attachment 1.

¹⁷ DR 842

¹⁸ NorthStar found this to be SWP pipeline DR 878 Attachment 1

- These inconsistencies are significantly greater than the annual LPM replacement mileage and cannot be attributed to timing.
- NorthStar requested a reconciliation of the differences in LPM segments and mileage contained in documentation requests previously provided. Avangrid could not reconcile LPM segment and mileage data and could only relate the data to prior reports.
- Avangrid stated:

“NYMA-0841, NYMA-0842 and NYMA-0514 are based upon similar distribution system data however compile and provide results differently.

The mileage stated in NYMA-0841 was the total NYSEG and RG&E system mileage as reported to PHMSA on the Annual Distribution report Part B1 and included material categories of unprotected bare steel, cathodically protected bare steel, unprotected coated steel, protected coated steel, Plastic, CI/WI, ductile iron, copper, other.

The mileage stated in NYMA-0842 was a rough order of magnitude estimate of pre-1971 piping mileage based upon the PHMSA Annual Distribution report Part B4 and is a subset of data provided in NYMA-0841.

The mileage stated in NYMA-0514 consists only of those individual pipe segments identified as part of the annual LPM prioritization listing and is a subset of data provided in NYMA-0841 and NYMA-0842.”¹⁹

3. Avangrid modified its commitment to replace NYSEG and RG&E LPM since the Joint Proposal by differentiating pipeline material and failing to recognize ongoing replacement mileage.

- The 2019 Joint Proposal establishes that NYSEG and RG&E individually must retire a minimum of 30 miles of LPM annually, or 90 miles cumulatively, from calendar year 2020 to 2022. The 2023 Joint Proposal requires NYSEG and RG&E to replace 24 miles of LPM in CY2025 and beyond.²⁰
- However, Avangrid stated:

“NYSEG/RG&E are applying the targets approved in the Joint Proposal approved in cases (22-E-0317 et.al) and have publicly committed to replace the **traditional LPM categories** of materials including bare steel, WI/CI and un-protected steel by 2030. NYSEG and RG&E have respectively approximately 82 miles and 44 miles of traditional LPM remaining as of year-end 2023.”^{21 22} [Emphasis added]

¹⁹ DR 962

²⁰ DR 26 page 90 of 119

²¹ DR 842

²² The 82 miles at NYSEG and 44 miles at RG&E consist of bare steel, cathodically protected steel, coated/wrapped steel and cast/wrought iron. Calculated from DR 878 Attachment 1.

“The non-traditional pipeline segments replaced as part of the LPM Program typically consist of cathodically protected pre-1971 steel pipe meeting criteria defined in the NYSEG/RG&E LPM Criteria (NYMA-0185 Attachment 1) and Aldyl-A or similar vintage plastics. **NYSEG and RG&E have not established or received PSC approval of any long term plan to replace the approximately 1,800 and 1,500 miles (respectively) of pre-1971 steel and Aldyl A plastics after the traditional LPM has been replaced.**”^{23 24} [Emphasis added]

- This statement is not true. The 2023 Joint Proposal does not contain the words “traditional” and “non-traditional” and it does not differentiate traditional and non-traditional LPM. The 2023 Joint Proposal requires NYSEG and RG&E to replace 24 miles of LPM in CY2025 and beyond.²⁵

“NYSEG and RG&E are unaware if or how the industry may use the term “traditional” and “nontraditional” as it is terminology utilized and applicable to the NYSEG/RG&E LPM process. The Companies’ LPM process is set forth in the Joint Proposal approved by the Commission in Cases 22-E-0317 et. al.”²⁶

“The terminology “traditional” and “non-traditional” pipeline is not explicitly documented in Cases 22-E-0317 et. al.”²⁷

- Documentation supporting NYSEG/RG&E public commitment to replace “non-traditional” LPM by 2030 could not be provided:

“While the referenced attachments do not differentiate traditional vs. non-traditional pipeline replacements, the Companies will prioritize the traditional leak prone main to meet our 2030 objective.”²⁸

- Avangrid stated:

“At the presently approved Joint Proposal replacement rate of approximately 24 miles/year it will take greater than 60 years to complete a system wide replacement of the aforementioned materials.”²⁹

- Avangrid’s commitment to replace LPM varies and will take considerably longer to remove LPM: the 2019 Joint Proposal establishes that NYSEG and RG&E individually must retire a minimum of 30 miles of LPM annually, or 90 miles cumulatively, from calendar year 2020 to 2022.³⁰ It is now reduced to 24 miles/year for 2025 and beyond.³¹

²³ DR 842

²⁴ NorthStar found this to be SWP pipeline DR 878 Attachment 1

²⁵ DR 26 page 90 of 119

²⁶ DR 958

²⁷ DR 958 Supplemental Response

²⁸ DR 959 Supplemental Response

²⁹ DR 842 Supplement 1

³⁰ DR 26 page 90 of 119

³¹ DR 842 Supplement 1

4. Avangrid’s gas pipeline risk analysis and prioritized LPM replacement to improve public safety is misleading. Highest-risk LPM is not systematically replaced. Conclusions 5 through 9 provide additional detail.

5. Risk analysis is extensively addressed in the DIMP but not implemented as described.

- The US DOT PHMSA Code of Federal Regulations (CFR) 49 section §192.1001 through §192.1015 (Subpart P) requires operators of gas distribution pipelines to develop and implement a Distribution Integrity Management Program (DIMP) that includes a written Distribution Integrity Management (DIM) Plan.³² The purpose of the DIMP is to establish efficient processes for managing the safety and reliability of NYSEG’s and RG&E’s gas distribution infrastructure by identifying and reducing gas distribution pipeline integrity risks. Operators must integrate knowledge from reasonably available information about their pipelines to make informed risk decisions. The rule requires that operators identify risks to their pipelines where an incident could have serious consequences. The rule also requires that operators implement a program to provide greater assurance of the integrity of their distribution pipeline.³³
- The DIM Written Plan was implemented as policy by the Avangrid Networks Vice Presidents of Gas Engineering and Gas Operations on August 2, 2011 in accordance with the requirement that all elements of this DIM Written Plan shall be developed and implemented no later than August 2, 2011.³⁴ The most recent DIMP document, which includes the DIM Plan is dated 7-31-2023.³⁵
- The DIMP is intended to promote continuous improvement in pipeline safety by requiring operators to identify and invest in risk mitigation measures beyond previously established regulatory requirements. The DIM Plan addresses the DIMP Rule which requires operators to develop and implement a DIMP that addresses the following elements: (CFR 49 §192.1007).
 - Knowledge.
 - Identify Threats.
 - Evaluate and Rank Risks.
 - Identify and Implement Measures to Address Risks.
 - Measure Performance, Monitor Results, and Evaluate Effectiveness.
 - Periodic Evaluation and Improvement.
 - Report Results.
- The DIMP Rule specifies the required program elements but does not prescribe specific methods of implementation.
- The following five measures must be reported, annually by March 15, to PHMSA as part of the annual report required by 49 CFR, §191.11. The DIMP requires a program

³² [CFR 49 §192.1007](#)

³³ DR 160 Attachment 1 – requested first DIMP plan but document is footnoted “Draft” and not dated.

³⁴ DR 161 Attachment 4 - dated 7-31-2023.

³⁵ DR 161 Attachment 4

re-evaluation if the plan itself is not revised within a five-year period. The written plan for the DIMP was revised in 2018, 2020, 2021, and 2023.³⁶ The NYSPSC exercises jurisdiction over the pipeline and these five measures are reported in the NYSPSC quarterly performance reports and the DOT reports:

- Number of hazardous leaks either eliminated or repaired (or total number of leaks if all leaks are repaired when found), per §192.703(c), categorized by cause.
 - Number of excavation damages.
 - Number of excavation tickets (receipt of information by the underground facility operator from the notification center).
 - Total number of leaks either eliminated or repaired, categorized by cause.
 - Information related to failure of mechanical fittings, excluding those that result only in non-hazardous leaks, shall be reported to PHMSA as part of the annual report required by §191.11 beginning with the report submitted March 15, 2011. This information must include, as available, location of the failure in the pipeline, nominal pipe size, material type, nature of failure including any contribution of local pipeline environment, coupling manufacturer, lot number and date of manufacture, and other information that can be found in markings on the failed coupling.
- Knowledge of Facilities Code Requirement: §192.1007(a) Knowledge. An operator must demonstrate an understanding of its gas distribution system developed from reasonably available information.
 - (1) Identify the characteristics of the pipeline’s design and operations and the environmental factors that are necessary to assess the applicable threats and risks to its gas distribution pipeline.
 - (2) Consider the information gained from past design, operations, and maintenance.
 - (3) Identify additional information needed and provide a plan for gaining that information over time through normal activities conducted on the pipeline (for example, design, construction, operations or maintenance activities).
 - (4) Develop and implement a process by which the IM program will be reviewed periodically and refined and improved as needed.
 - (5) Provide for the capture and retention of data on any new pipeline installed. The data must include, at a minimum, the location where the new pipeline is installed and the material of which it is constructed.
 - Risk Evaluation and Ranking Code Requirement: §192.1007 (c) Evaluate and rank risk. An operator must evaluate the risks associated with its distribution pipeline. In this evaluation, the operator must determine the relative importance of each threat and estimate and rank the risks posed to its pipeline. This evaluation must consider each

³⁶ DR 161

applicable current and potential threat, the likelihood of failure associated with each threat, and the potential consequences of such a failure. The Code requirement states:

§192.1007 (c): An operator may subdivide its pipeline into regions with similar characteristics (e.g., contiguous areas within a distribution pipeline consisting of mains, services and other appurtenances; areas with common materials or environmental factors), and for which similar actions likely would be effective in reducing risk.

- Important elements of Avangrid’s compliance with §192.1007 (c) include the following:

- An operator may subdivide its pipeline into regions. This does not mean that the operator’s entire pipeline system (service territory) is a region. And yet:

“RG&E and NYSEG’s interpretation of “regions with similar characteristics” is not based entirely on pipeline material used for the entire service territory.”³⁷

“NYSEG and RG&E have selected to use each of their entire distribution system as one geographic region.”³⁸

- Effectively, with one DIMP program for both utilities, the use of “regions” for the entire service territory, and common risk approaches, Avangrid has made both NY utilities a common region with common threats and conditions.
 - Non-LPM pipeline segments (those pipe segments that are not included as a prioritized LPM segment) do not have an individual/segment level risk score and risk is established at a regional level. There is no additional documentation of risk at the regional level other than as described in the DIMP.³⁹
 - An operator may subdivide its pipeline into regions with common materials. As described in the Background section above, NYSEG’s and RG&E’s pipeline system includes numerous different materials.
- §192.1007 (f): Periodic Evaluation and Improvement. An operator must re-evaluate threats and risks on its entire pipeline and consider the relevance of threats in one location to other areas.

- Important elements of Avangrid’s compliance with §192.1007 (f) include:

“Each Opco specific model addresses all known threats on the pipeline system and produces an overall risk score for every threat.”⁴⁰ “Where a detailed LPM prioritization is not applied at a pipe segment level, NYSEG and RG&E apply the identified DIMP threats uniformly to the remainder of the distribution system.”⁴¹

³⁷ DR 769

³⁸ DR 840 Attachments 3 and 4

³⁹ DR 840 and 955

⁴⁰ DR 161 Attachment 1

⁴¹ DR 840

- NYSEG/RG&E risk evaluation and improvement does not include its entire pipeline.

“The Leak Prone Main prioritization database/spreadsheet is separate from the Manual Relative Risk Model. The **Leak Prone Pipe Prioritization spreadsheet is only used for prioritizing leak prone pipe [priority is the sum of risk scores]**. The Manual Relative Risk Model is used to calculate a risk score for all known subthreats for the entire distribution system and not for individual pipelines or pipe segments.”⁴² [Emphasis added]

- The Companies do not apply risk scores for transmission pipeline. TIMP 5.6.2 states:

“NYSEG/RG&E has selected the Relative Risk Assessment Model approach to analyze and prioritize its covered segments for assessment.”⁴³

- Also:

“The Companies do not have a ‘leak prone transmission risk assessment model’ and have based transmission replacements on results of the Transmission Integrity Management Program (TIMP) High Consequence Area assessment and emergent regulatory requirements.”⁴⁴

“NYSEG has not replaced any transmission pipeline segments and the RG&E segments identified for replacement to comply with PHMSA Mega Rule requirements are listed in Table 1.”⁴⁵ Table 1 provided, listed “No Risk Score” for all transmission pipeline segments.

“...the Companies do not have a risk assessment score for Transmission projects.”⁴⁶

- The DIMP states that evaluation and ranking of risk is an ongoing process of understanding what factors affect the risk posed by threats to the gas distribution pipeline and apply a weighting relative to other threats. The primary objectives of the evaluation and ranking of gas distribution pipeline risk are to:
 - Understand the risk.
 - Consider each applicable current and potential threat.
 - Consider the likelihood of failure associated with each threat.
 - Evaluate the potential consequences of such a failure.
 - Estimate and rank the risks posed to the pipeline and other facilities.
 - Consider the relevance of threats in one location to other areas.

⁴² DR 517

⁴³ DR 161 Attachment 9, TIMP Section 5, Risks, Analysis & Prioritization

⁴⁴ DR 407

⁴⁵ DR 407

⁴⁶ DR 407, 408 and 761

- Identify potential threats that have not yet occurred.
- Avangrid Gas Engineering SMEs use risk scoring/weighting factors to determine main replacement prioritization.⁴⁷ The “algorithm” described in the DIMP for prioritization score is the sum of 18 characteristics listed below and the score for leaks on a pipeline segment is the product of sum of leak tickets multiplied by worst leak class score. This is the score presently used to prioritize leak prone pipe main segments.

- Active Corrosion	- Buried Depth
- Crew Comments	- Paving
- Leak	- Distance from Structure
- Material	- Area
- Age	- Main Near
- Coating Type	- Soil Type
- Coating Condition	- Continuous Paving
- External Corrosion	- Pending Leaks
- Internal Corrosion	- Number of Leak Clamps

- However, while these risks are described at length in the Avangrid DIMP/TIMP documents, most of them are not used.⁴⁸ And:

“Data fields within the spreadsheet [showing risk scores by pipeline segment] are populated based on available data. Where a field is not populated or null, there is no identified source data or supporting documentation from which to provide scoring and weighting.”⁴⁹

- Avangrid has had more than twelve years to develop risk information covering its pipeline system and has not demonstrated improved knowledge in its risk ranking tools.

6. Even though risk analysis is documented at length in DIMP/TIMP materials reported annually, Avangrid has not effectively applied risk factors to its Leak Prone Pipe.

- **Exhibit VI-8** illustrates that Avangrid’s RG&E LPM risk scores and current score (the summation of risk scores) seldom include information other than the pipeline segment age (year installed). When applying an age risk score greater than 1, the pipeline segment must have been installed prior to 1950 – over 75 years ago.
- **Exhibit VI-9** illustrates that Avangrid’s RG&E LPM risk scores remain the same from year to year and are not updated annually.
- **Exhibit VI-10** illustrates that Avangrid’s NYSEG LPM risk scores and current score (the summation of risk scores) seldom include information other than the pipeline

⁴⁷ DR 161 Attachment 4, DIMP Rev 6, 7-31-2023

⁴⁸ DR 161 and Attachments, DR 840.

⁴⁹ DR 415 and Attachments, and DR 836

segment age (year installed). When applying an age risk score greater than 1, the pipeline segment must have been installed prior to 1950 – over 75 years ago.

- **Exhibit VI-11** also illustrates that Avangrid’s NYSEG LPM risk scores remain the same from year to year and are not updated annually.

7. Even though documented at length in DIMP/TIMP materials reported annually, Avangrid has not updated risk values annually, and LPM segments identified since 2019 will not have a risk score.

- Avangrid’s response to NorthStar’s inquiry as to why LPM segments did not have risk scores prior to 2019 as shown in **Exhibits VI-8 - VI-11**, provided the following.⁵⁰

“One of the two following reasons will apply to a LPM segment not have a scoring prior to 2019:

1. In 2019, a process improvement was implemented to incorporate the historical segment ranking within a current year LPM prioritization list. The improvement provided a means to ensure awareness of potential changes in prioritization for identified segments. Historical LPM prioritization scoring was not transposed to the revised spreadsheet template.
2. In the event a segment is identified and included in the LPM prioritization list in any year 2019-present, there will be no pre-2019 historical scoring. The year that a segment is identified is provided in Column ‘C’ of the prioritization spread sheet.”

⁵⁰ DR 827

Exhibit VI-8
Excerpt from the RG&E Leak Prone Pipe Prioritization Spreadsheet

LPM_Segment_ID	Active Corrosion	Crew Comments	Leaks [DO not edit]	Leaks class multiplier	Leak	Material	Age	Coating Type	Coating Condition	External Corrosion	Internal Corrosion	Buried Depth	Paving	Distance From Structure	Area	Main Near	Soil Type	Continuous Paving	Pending Leaks	Number of Leak Clamps	Current Score	Score 2/1/2023 Submittal	Score 2/2/2022 Submittal	Score 2/1/2021 Submittal	Score 2/4/2020 Submittal	Score 3/7/2019 Submittal	Score 3/2/2018 Submittal	Score 5/2/2017 Submittal
501535	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1			1	1			
501536	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1			1	1			
501537	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1			1	1			
501538	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1			1	1			
501539	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4			4	4			
501550	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1				1			
501551	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1		1	1	1			
501552	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2			2	2			
501553	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1			1	1			
501554	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1		1	1	1			
501555	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1		1	1	1			
501556	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1			
501557	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1			
501558	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1			
501559	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1			
501560	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1			
501561	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1			
501562	0	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	5	5			
501563	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1			
501564	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1			
501565	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1			

Source: DR 415 Attachment 1 e.g., Age 2 is 1941-1950 and Age 4 was installed between 1921-1930

Exhibit VI-9
Excerpt from the RG&E Leak Prone Pipe Prioritization Spreadsheet

LPM_Segment_ID	Active Corrosion	Crew Comments	Leaks [DO not edit]	Leaks class multiplier	Leak	Material	Age	Coating Type	Coating Condition	External Corrosion	Internal Corrosion	Buried Depth	Paving	Distance From Structure	Area	Main Near	Soil Type	Continuous Paving	Pending Leaks	Number of Leak Clamps	Current Score	Score 2/1/2023 Submittal	Score 2/2/2022 Submittal	Score 2/1/2021 Submittal	Score 2/4/2020 Submittal	Score 3/7/2019 Submittal	Score 3/2/2018 Submittal	Score 5/2/2017 Submittal
501718	1000	0	4	5	20	5	2	0	0	5	0	0	0	0	3	3	1	0	0	3	1051			1051	1051			
501949	1000	0	4	1	4	4	1	0	0	5	0	0	3	0	3	3	6	0	0	3	1037	1034	5	5				
501726	0	0	1	5	5	5	4	0	0	5	0	4	3	0	3	3	1	0	0	1	40		40	9	9			
502429	0	0	1	5	5	0	1	0	0	5	0	4	3	0	5	4	6	0	0	0	39	39						
502182	0	0	1	5	5	4	1	0	0	5	0	0	3	0	3	3	6	0	0	0	36	36	36					
502575	0	0	1	3	3	4	4	0	0	5	0	0	0	0	5	4	6	0	0	1	36	8						
502795	0	0	2	5	10	0	1	0	0	3	0	0	3	0	5	4	1	0	0	2	36							
501725	0	0	2	3	6	5	4	0	0	3	0	4	0	0	3	3	1	0	0	1	35	35	35	35	35			
501671	0	0	1	5	5	4	1	0	0	3	0	0	3	0	5	4	1	0	0	2	34	34	34	5	5			
501989	0	0	1	4	4	0	1	0	0	5	0	0	3	0	3	3	5	0	0	4	33	33	33					
502099	0	0	2	1	2	5	3	0	0	5	0	0	0	0	3	3	6	0	0	3	33	31	8					
502265	0	0	1	4	4	0	1	0	0	5	0	4	0	0	3	3	6	0	0	1	32	32	32					
502810	0	0	1	4	4	4	1	0	0	5	0	0	0	0	3	3	6	0	0	1	32							
502430	0	0	1	4	4	0	1	0	0	5	0	0	3	0	3	3	6	0	0	0	30	30						
501659	0	0	1	5	5	0	1	0	0	3	0	0	3	0	5	4	1	0	0	1	29	29	29	29	29			
501661	0	0	1	4	4	0	1	0	0	3	0	0	3	0	3	3	6	0	0	1	29	29	29	29	29			
501745	0	0	1	5	5	0	1	0	0	1	0	0	0	0	5	5	5	0	0	1	29	29	29	1	1			
502646	0	0	1	4	4	0	1	0	0	5	0	0	0	0	3	3	6	0	0	1	28	1						
502809	0	0	1	1	1	4	1	0	0	5	0	0	0	0	3	3	6	0	0	3	28							
502185	0	0	2	1	2	0	1	0	0	3	0	0	3	0	3	3	2	0	0	7	27	27	27					
502273	0	0	1	1	1	0	1	0	0	5	0	0	3	0	5	4	6	0	0	0	27	27	27					

Source: DR 415 Attachment 1

Exhibit VI-10
Excerpt from the NYSEG Leak Prone Pipe Prioritization Spreadsheet

LPM_Segment_ID	Active Corrosion	Crew Comments	Leaks [Do not edit]	Leaks class multiplier	Leak	Material	Age	Coating Type	Coating Condition	External Corrosion	Internal Corrosion	Buried Depth	Paving	Distance From Structure	Area	Main Near	Soil Type	Continuous Paving	Pending Leaks	Number of Leak Clamps	Score	Current Score	Score 2/1/2023 Submittal	Score 2/2/2022 Submittal	Score 2/1/2021 Submittal	Score 2020 Submittal	Score 2019 Submittal
102729	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		1			
102741	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1		1	1	1
102742	0	0	0	0	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9	9		9	9	9
102743	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1		1	1	1
102744	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1		1	1	1
102745	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		1	1	1	1
102746	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		1	1	1	1
102747	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		1	1	1	1
102748	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1			1	1	1
102749	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1		1	1	1
102750	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1		1	1	1
102751	0	0	0	0	0	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	11	11	11		11	11	
102752	0	0	1	1	1	0	5	0	0	1	0	0	3	0	5	0	5	0	0	1	21	21	21		21	21	
102753	0	0	1	1	1	0	4	0	0	1	0	0	3	0	3	3	5	0	0	1	21	21	21		21	21	
102754	0	0	1	4	4	0	1	0	0	0	0	4	3	0	3	3	0	0	0	0	18	18	18		18	18	
102760	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		1			
102761	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		1			
102762	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		1		1	
102763	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		1		1	
102764	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		1		1	
102765	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		1		1	
102766	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1			1	1	

Source: DR 415 Attachment 2 e.g., Age 5 was installed prior to 1920 and still in service and Age 4 was installed between 1921-1930

Exhibit VI-11
Excerpt from the NYSEG Leak Prone Pipe Prioritization Spreadsheet

LPM_Segment_ID	Active Corrosion	Crew Comments	Leaks [DO not edit]	Leaks class multiplier	Leak	Material	Age	Coating Type	Coating Condition	External Corrosion	Internal Corrosion	Buried Depth	Paving	Distance From Structure	Area	Main Near	Soil Type	Continuous Paving	Pending Leaks	Number of Leak Clamps	Score	Current Score	Score 2/1/2023 Submittal	Score 2/2/2022 Submittal	Score 2/1/2021 Submittal	Score 2020 Submittal	Score 2019 Submittal
103881	0	0	3	4	12	8	4	0	0	5	0	0	3	0	3	3	1	0	0	7	46	46	40				
103831	0	0	1	3	3	10	1	0	0	5	0	4	3	0	3	3	5	0	0	1	38	38	38				
103290	0	0	1	1	1	10	5	0	0	5	0	4	3	0	3	3	1	0	0	1	36	36		36			
103340	0	0	1	4	4	10	4	0	0	5	0	0	3	0	3	3	1	0	0	2	35	35		35	35		
103076	0	0	1	1	1	8	1	0	0	5	0	4	3	0	3	3	1	0	0	1	30	30	9		9	30	
103615	0	0	1	5	5	0	1	0	0	5	0	4	3	0	3	3	6	0	0	0	30	30	30				
103334	0	0	1	1	1	8	1	0	0	1	0	0	3	0	5	4	6	0	0	0	29	29	29		29		
103336	0	0	1	1	1	8	1	0	0	1	0	0	0	0	4	5	6	0	0	1	27	27	27		27		
103618	0	0	1	5	5	0	1	0	0	0	0	0	3	0	3	3	6	5	0	1	27	27	27				
103335	0	0	2	5	10	0	1	0	0	5	0	0	0	0	3	0	6	0	0	1	26	26	26		26		
103338	0	0	2	5	10	0	1	0	0	5	0	0	0	0	3	0	6	0	0	1	26	26	26		26		
103339	0	0	1	4	4	8	1	*	0	0	0	0	3	0	3	0	6	0	0	1	26	26	26		26		
103333	0	0	2	1	2	0	1	0	0	5	0	0	3	0	3	3	6	0	0	2	25	25	25		25		
103061	0	0	2	1	2	0	1	0	0	5	0	0	3	0	3	3	6	0	0	1	24	24	24		24	24	
103060	0	0	1	1	1	8	1	0	0	0	0	0	3	0	3	0	6	0	0	1	23	23	23		23	23	
103342	0	0	1	5	5	0	1	0	0	5	0	0	0	0	3	0	6	0	0	2	22	22	22		22		
103397	0	0	1	5	5	0	1	0	0	5	0	0	0	0	3	0	6	0	0	2	22	22	22		22		
102752	0	0	1	1	1	0	5	0	0	1	0	0	3	0	5	0	5	0	0	1	21	21	21		21	21	
102753	0	0	1	1	1	0	4	0	0	1	0	0	3	0	3	3	5	0	0	1	21	21	21		21	21	
102797	0	0	0	0	0	15	5	0	0	0	0	0	0	0	0	0	0	0	0	0	20	20	20		20	20	

Source: DR 415 Attachment 2

8. Avangrid does not replace NYSEG and RG&E Leak Prone Main (LPM) pipeline segments based on the highest risk.

- The NYSEG system has more than 8,300 miles of natural gas distribution pipelines (mains and services) and 20 miles of gas transmission pipelines. The RG&E system has more than 10,600 miles of natural gas distribution pipelines (mains and services) and 105 miles of gas transmission pipelines.^{51 52}
- NYSEG and RG&E had over 2,900 individual LPM pipeline segments totaling over 500 miles in 2023. Using the mileage in the PHMSA filings, this represents about five percent of the system mileage.⁵³
- Leak prone pipe replacement is characterized by weighting risk factors to determine a final risk score and summation for prioritization.⁵⁴ Early on, the risk assessment process concentrated on cast iron and steel pipe corrosion. Additional risk considerations included natural forces, excavation damage, outside force damage, material/weld/joint failure, equipment failure, and operational issues. Risk analysis used two approach methods: subject matter expert (SME) method (experience based), and relative risk assessment model (algorithms and available data to produce a risk value).
- However, little has changed in NYSEG’s and RG&E’s approach to risk management since its first DIMP draft.⁵⁵

“NYSEG and RG&E employ a manual relative risk model.”

“NYSEG and RG&E presently use SME’s to evaluate the leak prone main algorithm results, determine if other pipelines are considered leak prone (such as pipe manufactured of Aldyl-A plastic), and provide the final recommendation on pipe replacement priorities based on system and operating knowledge.”

- NYSEG and RG&E further qualify the risk evaluation and prioritization process stating:

“The Leak Prone Main prioritization database/spreadsheet is separate from the Manual Relative Risk Model. The Leak Prone Pipe Prioritization spreadsheet is only used for prioritizing leak prone pipe which does not include the remainder of the gas main pipeline system. The Manual Relative Risk Model is used to calculate a risk score for

⁵¹ <https://www.avangrid.com/es/aboutus/avangridnetworks>, NorthStar is unsure of how this mileage is calculated as it conflicts with the PHMSA filings in DR 398.

⁵² <https://primis.phmsa.dot.gov/comm/NaturalGasPipelineSystems.htm#:~:text=Natural%20gas%20distribution%20pipeline%20systems,through%20mains%20and%20service%20lines>. “Natural gas distribution pipeline systems can be found in thousands of communities from coast to coast and distribute natural gas to our homes and businesses through mains and service lines.”

⁵³ DR 398 Attachments 4 and 8 and DR 514 Attachments 4 and 8

⁵⁴ DR 160 and Attachments and DR 161 and Attachments

⁵⁵ DR 160 and Attachments and DR 161 and Attachments

all known sub-threats for the entire distribution system and not for individual pipelines or pipe segments.”⁵⁶

- Therefore, the “two approach methods” that are described – the subject matter expert (SME) method (experience based), and relative risk assessment model (algorithms and available data to produce a risk value) – are simply the sum of SME’s 18 risk scoring addressed in Conclusions VI-1 through VI-4, along with deficiencies noted.
- The result of risk score summation to produce LPM segment prioritization is a range from 0 to over 1,000 stratified as follows:
 - Those segments with active corrosion, crew comments, and other characteristics receive scores over 1000.
 - Those segments with no active corrosion but with crew comments and other characteristics can receive scores over 100 but considerably less than 1000.
 - Those segments without active corrosion and crew comments but with other characteristics receive prioritization scores of typically less than 100.⁵⁷
 - The majority of LPM pipeline segments included in the capital plan are priority “1” – the lowest possible priority.
 - There are many LPM pipeline segments that need to be replaced at higher priorities (scores higher than “1”) that are not included in the Capital Plan.⁵⁸
- The 2023 Joint Proposal states that NYSEG and RG&E will continue to utilize a risk-based prioritization algorithm to identify and rank segments of Leak Prone Main for removals. NYSEG and RG&E will continue to remove Leak Prone Services in conjunction with the removal of Leak Prone Main.⁵⁹ However, the annual LPM pipeline capital plan does not include the highest priority pipeline segments. In **Exhibit VI-12**, NorthStar extracted the risk score from each segment in the capital plan and found for both utilities:
 - In 2021, 57 percent of the capital plan had risk rankings of 1 (the lowest possible risk).
 - In 2022, 64 percent of the capital plan had a risk ranking of 1 or 0.
 - In 2023, 67 percent of the capital plan had risk rankings of 1 or 0.⁶⁰

⁵⁶ DR 517

⁵⁷ DR 415 Attachment 1 and 2

⁵⁸ DR 405 Attachment 1 and DR 514 Attachments 1-8

⁵⁹ Cases 22-E-0317 et al. Joint Proposal Appendix L

⁶⁰ DR 405 Attachment 1 and DR 514 Attachments 1-8

Exhibit VI-12
LPM Prioritization and Capital Plans (RG&E + NYSEG segments)

	2021			2022			2023		
Priority Score	LPM Portfolio ¹ Segments	Capital Plan Segments	Percent of Capital Plan	LPM Portfolio Segments	Capital Plan Segments	Percent of Capital Plan	LPM Portfolio Segments	Capital Plan Segments	Percent of Capital Plan
Above 1000	2	0	0%	0	1	0.3%	3	0	0%
100 to 163	6	1	0%	3	2	0.5%	3	0	0%
50 to 63	3	1	0%	3	1	0.3%	1	0	0%
25 to 49	68	11	4%	70	13	3.3%	68	18	4%
10 to 24	530	61	19%	523	55	14.1%	484	42	9%
2 to 9	626	60	19%	666	70	17.9%	671	85	19%
1	1308	154	49%	1526	215	55.1%	1704	284	64%
Not Ranked		26	8%		33	8.5%		15	3%
Total	2543	314	100%	2791	390	100%	2934	444	100%

Note 1- Portfolio is defined as the entire populations of LPM found in the pipeline segment priority databases.

Note 2 -In the 2021 data, there were two segments scored over “1000” – Segments 500593 and 501718. 501718 went into service on 6/8/22. It was included in the 2022 capital plan. DR 405

Source: DR 405 Attachment 1 and DR 514 Attachments 1-8

- The annual LPM pipeline capital plans do not prioritize leak prone pipe risk to meet replacement mileage goals. **Exhibit VI-13** shows that pipelines that are not considered leak prone and are the lowest considerations for risk ranking represents the highest percentage of the capital plan.⁶¹
 - The utilities have planned over 60 miles of LPM replacement each year (30 miles each).
 - On average, SWP pipe represents 75 percent of the mileage of the LPM portfolio. It has the lowest average risk score.
 - SWP pipe is not Category A pipe, as defined in its LPMC, as it is not: Cast Iron, Wrought Iron, Bare Steel (with and without CP), Unprotected Steel, Aldyl-A, or Fiberglass. These represent the highest risk materials.⁶²
 - SWP can be typed as Category C leak prone - piping planned for an upgrade. However, the LPMC clearly states that in New York, MAOP should be a **least risk consideration within any of the A, B, and C** leak prone categories.⁶³
 - The capital plan with SWP segments displaces traditional leak prone pipeline segments.

⁶¹ DR 514 Attachments 1-8 and DR 405 Attachment 1

⁶² DR 521 Supp Attachment 1

⁶³ DR 521 Supp Attachment 1

Exhibit VI-13
Capital Plan Components

	2021			2022			2023		
Material	LPM Portfolio Segments	LPM Miles	Average Risk Score	LPM Portfolio Segments	LPM Miles	Average Risk Score	LPM Portfolio Segments	LPM Miles	Average Risk Score
AA	18	4	17.1	12	2	16.3	8	1	16.0
S/BS	39	6	13.1	44	8	42.6	29	4	16.8
SP	7	1	10.4	3	0	5.3	3	0	6.7
SW	20	4	7.8	51	9	11.4	61	11	9.3
SWP	199	53	3.1	244	46	2.2	325	60	2.4
WO	5	2	42.2	3	2	16.3	3	1	22.3
Unknown	26	N/A	N/A	33	N/A	N/A	15	N/A	N/A
Total	314	69	6.5	390	67	9.1	444	76	4.8

Source: DR 514 Attachments 1 to 8, and DR 405 Attachment 1

- The average risk of the portfolio has reduced from 6.5 to 4.8, but the mileage of low risk SWP has increased from 2021 to 2023.⁶⁴

9. Avangrid’s process for determining which segments are included in the capital plan does not appear to be based on risk.

- NYSEG and RG&E use an annual ten-year capital investment process to determine the levels of investment necessary to maintain and provide safe and reliable service. The first year of the plan is utilized as the basis for the annual budget. Constraints such as approved rate case capital schedules are relied upon to help establish targets for the total budget. Prioritization of the plan takes place where necessary to achieve alignment with targets.⁶⁵
- The 2019 Joint Proposal establishes that NYSEG and RG&E individually must retire a minimum of 30 miles of LPM annually – 24 miles for 2025 and beyond.⁶⁶
- Subordinating capital expenditures to achieve mileage requirements may result in deferring higher-cost replacements rather than replacing highest risk pipe.

10. Avangrid does not comply with Title 49 Part §192 of the Code of Federal Regulations (CFR), enacted February 12, 2010, specifically §192.1007.

- §192.1007(a): requires operators to identify missing data and to develop a plan to collect relevant information as part of their normal pipeline activities over time. Over half of the NYSEG/RG&E LPM segments are risk-scored only by age (risk score 1) or

⁶⁴ DR 514 Attachments 1 to 8, and DR 405 Attachment 1 and NorthStar Analysis

⁶⁵ DR 216

⁶⁶ DR 26 page 90 of 119

zero (no risk score recorded). No additional knowledge has been added to the risk methodology.⁶⁷

“Data fields within the spreadsheet [the record of risk scores and priority] are based on available data. Where a field is not populated or null then there is no identified source data or supporting documentation from which to provide scoring and weighting.”⁶⁸

- §192.1007(b) requires operators to use the information they have gathered in compliance with §192.1007(a) to identify threats to the integrity of their gas distribution systems. This also requires operators to identify missing data and to develop a plan to collect relevant information as part of their normal pipeline activities over time. PHMSA has clarified through guidance documents that operators should use sources of information such as past O&M procedures, abnormal operating events, purchase orders, material lists from old field orders or standards, and information from industry sources (e.g., plastic pipe database committee (PPDC), NTSB accident reports, or PHMSA advisory bulletins) to help identify threats. PHMSA identified potential threats that include, but are not limited to, non-leak events such as near misses, over pressurizations, and material and appurtenance failures. Even though certain potential threats may not have caused system integrity issues on an operator’s particular system in the past, the fact that known industry or systemic risks exist requires operators to account for the threat in their DIMP. Further, operators should not eliminate any existing or potential threat to a system without an adequate basis for doing so. PHMSA clarified through enforcement guidance that to exclude a threat from consideration, an operator should document the basis for that conclusion and should not exclude a threat based on the unavailability of information to support the existence of such a threat.
- §192.1007(c) states that an operator may subdivide its pipeline into regions. An operator may subdivide its pipeline into regions with **similar characteristics** (e.g., **contiguous areas within a distribution pipeline** consisting of mains, services and other appurtenances; areas with common materials or environmental factors), and for which similar actions likely would be effective in reducing risk.

“NYSEG and RG&E have selected to use each of their entire distribution system as one geographic region.”⁶⁹

“RG&E and NYSEG’s interpretation of “regions with similar characteristics” is not based entirely on pipeline material used for the entire service territory.”⁷⁰

- The operator’s entire pipeline system and that of both utility’s service territory is not a region based on the definition in §192.1007(c).

⁶⁷ [Federal Register :: Pipeline Safety: Safety of Gas Distribution Pipelines and Other Pipeline Safety Initiatives](#)

Publication date: 9/7/2023, and DR 405 Attachment 1 and DR 514 Attachments 1-8

⁶⁸ DR 829

⁶⁹ DR 840 Attachments 3 and 4

⁷⁰ DR 769

- As documented in NYSEG/RG&E’s own DIMP documentation, its entire distribution system is not contiguous, does not use a common (meaning the same, as different materials present dissimilar characteristics) material and does not have common environmental factors for which similar actions likely would be effective in reducing risk.⁷¹ Avangrid uses the entire service territory of two utilities as a region with common threats and conditions.⁷²
 - §192.1007(c) requires operators to evaluate and rank risk. **Exhibits VI-8 – 11** show that Avangrid does not apply risk scores to all of its LPM. Also, Avangrid does not evaluate and apply risk for all of its pipeline system – LPM and non-LPM at a segment level.
 - §192.1007(d) requires operators to determine and implement measures designed to reduce the risks from failure of their gas distribution pipelines. These measures include having an effective leak management program. Threats and risks are not re-evaluated and applied to the LPM/non-LPM pipeline system periodically.
 - Reported risk scores for LPM show that nearly 2/3 of LPM segments have only “1” risk score over the entire audit period and that risk scores have gaps.⁷³
 - Leak repair documentation does not support risk re-evaluation.⁷⁴
- “The Manual Relative Risk Model is used to calculate a risk score for all known sub-threats for the entire distribution system and not for individual pipelines or pipe segments.”⁷⁵
- “Employees review active LPM segments and apply the data from emergent information and update specific data fields according to the established LPM prioritization process on an annual and ad-hoc basis. There is no additional related supporting documentation (for example metadata) of risk characteristics and risk scoring that were revised as a direct result of leak corrections/eliminations.”⁷⁶
- Pipeline incidents since the promulgation of the DIMP rules in 2011 have demonstrated that some distribution operators whose systems are subject to DIMP requirements are not adequately identifying, evaluating, or mitigating the threats that are degrading and reducing the integrity of their pipeline systems.⁷⁷

⁷¹ DR 26, 161 and Attachments, and DR 415 Attachments

⁷² DR 840 Attachments 3 and 4

⁷³ DR 415 and Attachments 1 and 2.

⁷⁴ DR 837 Attachment 1 and 838 Attachment 1

⁷⁵ DR 520

⁷⁶ DR 837 SUPP 1, and 838 SUPP 1

⁷⁷ [Federal Register :: Pipeline Safety: Safety of Gas Distribution Pipelines and Other Pipeline Safety Initiatives](#)

Publication date: 9/7/2023

11. Avangrid generally replaces the pipeline segments as planned.

- NYSEG/RG&E replaced 83 percent of planned LPM pipeline segments over the past three years. This is equivalent to 953 pipeline segments.⁷⁸ **Exhibit VI-14** provides details on capital program execution.
- While the utilities have not identified the highest priority work in its capital plan, there has been modest success in reducing emergent work.
 - The portfolio of projects has increased between 2021 and 2023.
 - The number of unplanned projects has decreased over the three years.
 - The total number of completed projects has been constant.

Exhibit VI-14

Capital Program Completion Performance (RG&E + NYSEG LPM segments)

	Capital Plan Year (Number of Segments)			
	2021	2022	2023	Total
Segments Planned in Capital Plan	314	390	444	1148
Segments Completed in Plan Year	251	312	331	894
Segments in the Plan Year but Completed in Following Year	12	39	0	51
Segments in the Plan Year but Completed in the Second Year	8	0	0	8
Total	271	351	331	953
Planned v. Completed (%)	86%	90%	74%	83%
LPM Segments Completed in addition to Capital Plan segments	158	118	106	382
Total Segments Completed in Plan Year	409	430	437	1,276
Segments Not Completed as of 2024	43	39	113	195

Source: DRs 406 Attachments 1 segments minus DR 405 Attachment 1 segments

- In addition to replacing 83 percent of planned LPM pipeline segments, NYSEG and RG&E replaced 382 unplanned segments, or 11 percent.⁷⁹
- There were 195 segments not completed over a period of three years. None of the 195 segments were rated “1000+” (higher priority) and 60 percent were rated “1” (lowest priority).⁸⁰

⁷⁸ DR 405 Attachment 1, DR 406 Attachment 1, and NorthStar analysis

⁷⁹ DR 405 Attachment 1, DR 406 Attachment 1, and NorthStar analysis

⁸⁰ DR 405 Attachment 1, DR 406 Attachment 1, DR 514 Attachments 1-8 and NorthStar analysis. It is important to note that DR 415 Attachment 1 shows 230 LPM segments with 0 (zero) risk/priority scores.

12. NYSEG and RG&E have reported an improvement in managing gas leaks.

- The utilities have made substantial progress in eliminating the backlog of total leaks. Combined, the reduction has been 96 percent from 2010 to 2023 as shown in **Exhibit VI-15**.⁸¹
- Total leaks repaired on the system have significantly reduced since 2011, as shown in **Exhibit VI-15**.
 - At NYSEG, the percentage of leaks repaired due to corrosion from 2011 to 2022 was reduced by 94 percent. In 2011, leaks repaired for corrosion represent almost 40 percent of all repaired leaks.⁸²
 - At RG&E, the percentage of leaks repaired due to corrosion from 2011 to 2022 was reduced by 60 percent. In 2011, leaks repaired for corrosion represent almost 30 percent of all repaired leaks⁸³
 - The number of excavation damages, which also cause leaks, have remained fairly constant from 2011 to 2022.⁸⁴

Exhibit VI-15
Reported Leak Data to NYDPS

NYSEG	2010	2018	2019	2020	2021	2022	2023
Backlog of Total Leaks	46	10	14	13	3	9	3
Backlog of Potentially Hazardous Leaks	6	3	4	1	0	2	0
Repaired Potentially Hazardous Leaks	266	171	87	102	77	63	98
Discovered Potentially Hazardous Leaks	N/A	199	145	149	94	83	125
RG&E	2010	2018	2019	2020	2021	2022	
Backlog of Total Leaks	158	14	23	10	6	12	5
Backlog of Potentially Hazardous Leaks	9	1	0	0	0	3	0
Repaired Potentially Hazardous Leaks	430	260	110	132	136	141	123
Discovered Potentially Hazardous Leaks	N/A	294	285	178	166	198	141

Source: State of New York, Department of Public Service. 2014, 2022, and 2023 Pipeline Safety Performance Measures Report

13. Avangrid reported improved NYSEG and RG&E emergency response times over the past five years. However, Avangrid does not comply with 16 NYCRR Part 255.825, and reported performance is erroneously calculated. NorthStar cannot determine if Avangrid met the minimum performance standards.

- 16 NYCRR §255.825(d), requires the following:⁸⁵
 - Each operator shall appropriately record each report received by it as to a gas leak or emergency on a suitably numbered service record.

⁸¹ State of New York, Department of Public Service. 2014, 2022, and 2023 Pipeline Safety Performance Measures Report

⁸² DR 398 Attachment 4 and DR 799 Attachment 6

⁸³ DR 398 Attachment 8 and DR 799 Attachment 7

⁸⁴ DR 398 Attachment 4, DR 799 Attachment 6, DR 398 Attachment 8, and DR 799 Attachment 7

⁸⁵ N.Y. Comp. Codes R. & Regs. Tit. 16 § 255.825 | US Law

- A daily log shall be kept and maintained on file recording the receipt and handling of each such report and shall contain the following information:
 - (1) cross-reference to the related service record number
 - (2) location of leak or emergency
 - (3) time report first received by operator
 - (4) description or code designation as to type of leak or emergency
 - (5) time crew first dispatched to designated location
 - (6) time of arrival of such personnel at location.
- In addition, every operator shall maintain a record of the time of arrival of the repair crew called to the scene of a gas leak or emergency.
- Every operator shall submit on or before the 15th day of each calendar month, a summary analysis of its performance in responding to reports of gas leaks and emergencies, as reflected in the daily log sheets for the preceding calendar month, which shall be furnished in a format identical to Form A of Appendix 7-E of this Title, and which shall be signed by a responsible official.
- Beginning in 2010, rate cases 09-G-0716 and 09-G-0718 included minimum performance standards across operational areas of the utilities. Failure to achieve the minimum standards would result in a negative revenue adjustment. The performance targets related to Emergency Response Time have not changed since 2010 and are:
 - 30 Minute Response Target – 75 percent
 - 45 Minute Response Target – 90 percent
 - 60 Minute Response Target – 95 percent⁸⁶
- **Exhibit VI-16** provides Avangrid’s reported emergency response times showing improvements in performance from 2019 to 2023.⁸⁷

Exhibit VI-16
Avangrid REPORTED Emergency Response Time Performance
(Percent of Calls)

NYSEG	2019	2020	2021	2022	2023
30 Minute Response (Percent Completed)	72.5	76.7	83.6	82.5	82.8
45 Minute Response (Percent Completed)	89.1	93	96.3	95.5	96.4
60 Minute Response (Percent Completed)	94.6	97.9	99.1	99.0	99.4
RG&E	2019	2020	2021	2022	2023
30 Minute Response (Percent Completed)	64.3	77.9	89.1	88.5	88.1
45 Minute Response (Percent Completed)	82.5	93.8	98.2	97.9	97.8
60 Minute Response (Percent Completed)	89.2	98.2	99.7	99.6	99.4
State Average	2019	2020	2021	2022	2023
30 Minute Response (Percent Completed)	83.8	87.5	87.8	86.7	86.9

⁸⁶ DR 1309 Attachments 1-5, NYPSC Case 09-G-071: Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of New York State Electric & Gas Corporation for Gas Service, NYPSC Case 09-G-0718: Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Rochester Gas and Electric Corporation for Gas Service, and Fact Verification.

⁸⁷ NYPSC DPS: Case 24-G-0145, 2023 Pipeline Safety Performance Measures Report

45 Minute Response (Percent Completed)	96.1	97.2	97.6	97.0	97.4
60 Minute Response (Percent Completed)	98.5	99.2	99.3	99.0	99.4

Source: NYSPSC DPS: Case 24-G-0145, 2023 Pipeline Safety Performance Measures Report

- A summary of emergency calls must be reported in a form identical to Form A of Appendix 7-E of NYCRR Title 16. **Exhibit VI-17** provides Form A.

Exhibit VI-17 Form A of Title 16 Appendix 7-E

FORM A								
ANALYSIS OF RESPONSE TO EMERGENCY REPORTS								
Gas Corporation _____					Month _____, 19__			
Emergency Calls								
Response Time* (minutes)	Weekdays-during normal business hours		Weekdays-after normal business hours		Sat., Sun., & Hol.		Total	
	No. of Calls	Percentage of Calls	No. of Calls	Percentage of Calls	No. of Calls	Percentage of Calls	No. of Calls	Percentage of Calls
0-15								
16-30								
31-45								
46-60								
More than 60 min.								
Total		100%		100%		100%		100%
* Total elapsed time from receipt of report to time of arrival.								
					_____ Signature of Gas Corporation Officer			
					_____ Title			

Source: DR 1303 Attachment 2 Appendix 7-E Form A received from NYSPSC on 9/23/24

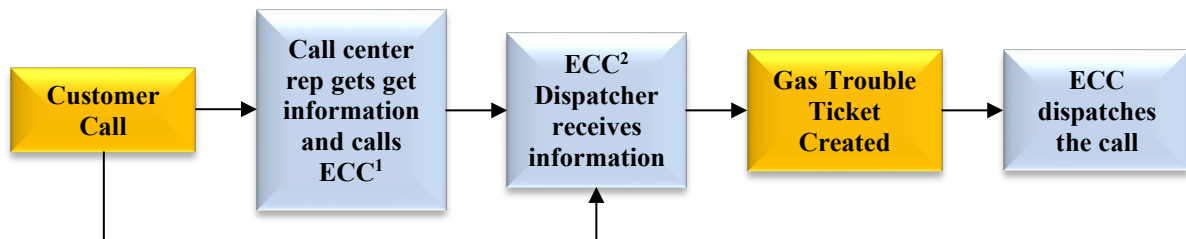
- 16 NYCRR Part 255.825 requires in the daily log, the time the report was received. Avangrid does not use the time which the report was received by the utility in its calculation of response time. Form A shown in **Exhibit VI-17** specifically calls for “*Total elapsed time from receipt of report to time of arrival”.
- Avangrid calculates response time as beginning with the issuance of a trouble ticket. Avangrid states:

“The process begins when a customer calls the gas emergency phone number indicating they have a gas emergency. A ticket is created within the system of record and handled by the Dispatcher/Trouble Monitor, located at the Energy Control Center (ECC). **The ticket creation time is considered the start time of the incident.** Qualified personnel are then dispatched to the emergency location. Upon arrival and/or completion of the incident, the qualified personnel contact the Dispatcher or utilize their tablet to document the arrival time. Dispatch, if applicable, enters this time into the system of record. The emergency response time performance for each occurrence is calculated

by finding the difference between the start time and the arrival time.”⁸⁸ [emphasis added]

- **Exhibit VI-18** provides an overview of Avangrid’s emergency reporting process. The development of the ticket is the third or fourth step in the process and can be affected by several conditions such as call/activity volume, resource availability, conflicting activities, etc.⁸⁹ Nevertheless, there is a time discrepancy between the reporting of the incident as required (time report first received by operator), and the creation of a ticket.

Exhibit VI-18 Gas Leak/Emergency Response Process



Note 1: ECC=Energy Control Center

Note 2: ECC receives information from one of two ways depending on call volume.

Source: DR 174 Attachment 1

14. Utility excavation damage performance is mixed.

- Mismarks are tracked and reported in the Annual Pipeline Safety Performance Measures report. A mismark is considered any instance where the utility’s markings are off by more than two feet. The report also includes any instances where the utility failed to mark its facilities in response to a properly executed one-call ticket.⁹⁰
- Pipeline marking is a field activity performed by qualified employees or contractors using specialized equipment locate the utility’s gas facilities. The pipeline location is then marked in yellow paint.⁹¹
- The combined New York utilities’ performance has reduced the number of mismarks per 1,000 one-call tickets from 0.48 to 0.30 over the past five years as shown in **Exhibit VI-19**.
 - NYSEG metric decreased from 0.32 to 0.29 in the same period, about the same as the NY average of 0.30.
 - RG&E metric increased from 0.33 to 0.42 over the same period.⁹²

⁸⁸ DR 1305

⁸⁹ DR 174 Attachment 1

⁹⁰ NYSPSC Case 14-G-0494, Testimony of DPS Gas Safety Panel March 2015, page 31

⁹¹ https://www.3m.com/3M/en_US/infrastructure-us/applications/locating-marking/locating-and-marking-gas-utility/

⁹² State of New York, Department of Public Service. 2022 Pipeline Safety Performance Measures Report

Exhibit VI-19
Excavation Damage Performance

NYSEG	2019	2020	2021	2022	2023
Number of One-Call Tickets	66,504	60,685	59,894	62,815	61,820
Number of Damages Due to Mismarks	21	18	19	20	18
Damages due to Mismarks per 1,000 Tickets	0.32	0.3	0.32	0.32	0.29
Number of Damages Due to No-calls	21	18	19	12	12
Damages due to No-calls per 1,000 Tickets	0.32	0.30	0.32	0.19	0.19
RG&E	2019	2020	2021	2022	2023
Number of One-Call Tickets	78,227	69,105	74,818	73,066	64,256
Number of Damages Due to Mismarks	26	36	23	29	27
Damages due to Mismarks per 1,000 Tickets	0.33	0.52	0.31	0.40	0.42
Number of Damages Due to No-calls	18	17	17	22	21
Damages due to No-calls per 1,000 Tickets	0.23	0.25	0.23	0.30	0.33
New York State	2019	2020	2021	2022	2023
Number of One-Call Tickets	841,849	765,498	808,652	797,613	765,858
Number of Damages Due to Mismarks	400	319	308	318	229
Damages due to Mismarks per 1,000 Tickets	0.48	0.42	0.38	0.40	0.30
Number of Damages Due to No-calls	340	288	302	275	272
Damages due to No-calls per 1,000 Tickets	0.40	0.38	0.37	0.34	0.36

Source: State of New York, Department of Public Service: Case 24-G-0145, 2023 Pipeline Safety Performance Measures Report and NorthStar Analysis

- Analyses of NYSEG mismatch damages identify three root causes: marking of location not sufficient, not located or marked, or incorrect records or maps.⁹³
- NYSEG has recently implemented a process to reduce mapping errors.

“NYSEG Damage Prevention recently implemented a process improvement initiative in both damage prevention and underground locating to identify and update incorrect records and maps. Under this improvement, if a locate technician or locate-qualified damage prevention driver identifies mapping errors in the field, they promptly report them along with relevant error and correction details to the NYSEG/RG&E Damage Prevention supervisor. The supervisor or local area NYSEG clerk then enters this information into a spreadsheet to monitor the correction process. Subsequently, the local gas clerk retrieves the existing as-built records, annotates the date and time pulled, scans them, and emails them to GIS for review. Follow-up occurs after 30 days to verify that the mapping error has been rectified, and any changes made, along with the date of correction, are noted in the tracking spreadsheet.”⁹⁴

- NorthStar’s review of RG&E mismarks did not highlight specific causes for insufficient marking.

⁹³ DR 190 Attachment 1

⁹⁴ DR 777

- RG&E uses a contractor for its marking program.
- No one individual was responsible for a proportionate share of mismarks.⁹⁵
- RG&E verifies operator qualifications for this work activity through the operator's employer.⁹⁶
- The number of damages to pipeline facilities when the excavator did not obtain a one-call ticket is tracked and reported in the Annual Pipeline Safety Performance Measures Report.⁹⁷ NYSEG and RG&E outperform the New York average in damages (per 1,000 tickets) due to no-calls
- In 2023, damages (per 1,000 tickets) due to no-calls averaged 0.36 in NY.
 - Damages (per 1,000 tickets) due to no-calls have increased at RG&E from 0.23 to 0.33 over the past five years, but still below the NY average.
 - At NYSEG, damages (per 1,000 tickets) in 2023 was 0.19.⁹⁸

15. NorthStar's review of a sample of NYSEG's and RG&E's inspection and testing records found minor discrepancies with CFR §192 and NYCRR Parts §255 and §261.

- The DPS conducts annual audits and investigations of its LDCs' gas operations and maintenance records for adherence to the requirements of 16 NYCRR Part §255 and 16 NYCRR Part §261. The audits are based on a random sample of records from pre-selected operation and maintenance activities. The pre-selection of audit topics that change from year-to-year allows the utilities to learn about areas of vulnerability and improve overall public safety.
- Violations are categorized into three categories: high risk, other risk, and areas of concern. Ten major violations associated with a code section result in the utility being required to file a remediation plan.
 - NYSEG and RG&E have incurred violations related to its record keeping related to inspections and maintenance activities as shown in **Exhibit VI-20**. NYSEG had two aberrant years of higher-than-average violations per mile of main pipeline (as do other utilities from time to time). These instances allow the utilities to improve operations in an area unknown to be at risk.⁹⁹

⁹⁵ DR 776 Attachment 1 and DR 191 Attachment 4

⁹⁶ DR 776

⁹⁷ NYSPSC Case 14-G-0494, Testimony of DPS Gas Safety Panel March 2015, page 31

⁹⁸ State of New York, Department of Public Service. 2021, 2022, and 2023 Pipeline Safety Performance Measures Report

⁹⁹ DR 410 Attachment 2.06

Exhibit VI-20
New York Annual Operating and Maintenance Records Audits – High Risk Violations
(Violations per mile of main pipeline)

Local Distribution Company	2017	2018	2019	2020	2021	2022
Central Hudson	0.03	0.09	0.01	0.00	0.01	0.00
Con Edison	0.00	0.00	0.01	0.01	0.00	0.00
Corning	0.02	0.08	0.08	0.03	0.03	0.02
National Fuel Gas	0.04	0.02	0.02	0.02	0.01	0.03
National Grid Long Island/New York	0.00	0.00	0.00	0.00	0.00	0.01
NYSEG	0.01	0.02	0.02	0.07	0.01	0.05
Orange and Rockland	0.00	0.00	0.00	0.00	0.01	0.00
RG&E	0.00	0.01	0.01	0.01	0.00	0.00

Source: State of New York, Department of Public Service, 2022 and 2023 Pipeline Safety Performance Measures Reports, <https://www.coned.com/en/about-us/how-we-source-our-energy/gas>, <https://www.tricountyindependent.com/story/business/names-faces/2016/09/19/corning-natural-gas-holding-serving/25418243007/>, <https://www.nationalgrid.com/document/151311/download>, <https://www.oru.com/en/about-us/media-center/corporate-facts>, and DR 878 Attachment 1

- The majority of the violations were attributable to non-compliance with code section 16 NYCRR Part 255.603(d). NYSEG failed to conform to Section 8.5 – Inactive Service Lines, Stubs and Meters of its Gas Operating and Maintenance Manual, requiring NYSEG to perform and document a site-based analysis for each service allowed to continue without a customer of record. NYSEG was unable to provide documentation that the assessments were conducted.¹⁰⁰
- To remedy the situation and comply, in December 2021, Avangrid implemented new activity codes that must be executed by a field service representative prior to completing a gas-shut off, including a site-based analysis.¹⁰¹ It appears it had taken most of 2022, to implement the procedure. NYSEG has no reportable high-risk violations in 2023.¹⁰²
- NorthStar conducted a review of NYSEG’s and RG&E’s inspection and testing records for eight requirements of CFR §192.
 - Cathodic Protection (CFR §192.465)
 - Critical Valves (CFR §192.747)
 - Indoor Meter Sets (CFR §192.481)
 - Pressure Testing of Disconnected/Replaced Service Lines (CFR §192.725(a)).¹⁰³
 - Inactive Service Lines (CFR §192.605(a)).
 - On Shore Pipelines (CFR §192.481(a))
 - Internal Corrosion (CFR §192.475 (b)) and External Corrosion (CFR §192.459)

¹⁰⁰ DR 410 Attachment 2.06

¹⁰¹ DR 410 Attachment 2.07

¹⁰² DR 410 Attachment 2.11

¹⁰³ DR 504, DR 796

- Leak Response - (CFR §192.603(b), CFR §192.605).¹⁰⁴
- NorthStar determined that the utilities demonstrated sufficient record keeping and that work processes support compliance with Federal and State requirements.
- NorthStar’s analysis identified minor reporting exceptions in each of the eight areas evaluated. Reasons included:
 - Removal of equipment such as a pipeline, valve, or meter etc.
 - Replacement of faulty equipment resulting in a new inventory number.
 - Redesignation of equipment.
 - Missing records
 - Poorly maintained records
 - Late inspection/test
 - Field crew considerations
- Exceptions require a detailed review on a case-by-case basis to determine the cause and whether a violation occurred.
- NorthStar ‘s results are found in **Exhibit VI-21**.

¹⁰⁴ DR 769

Exhibit VI-21
Review of Testing and Inspection Records

Cathodic Protection (CFR §192.465)						Critical Valves (CFR §192.747)																										
<table><tr><td></td><td>NYSEG</td><td>RG&E</td></tr><tr><td>Units retested in 2022</td><td>99%</td><td>98%</td></tr><tr><td>Units retested in 2023</td><td>97%</td><td>99%</td></tr></table>							NYSEG	RG&E	Units retested in 2022	99%	98%	Units retested in 2023	97%	99%	<table><tr><td></td><td>NYSEG</td><td>RG&E</td></tr><tr><td>Units reinspected in 2022</td><td>98%</td><td>95%</td></tr><tr><td>Units reinspected in 2023</td><td>100%</td><td>94%</td></tr></table>				NYSEG	RG&E	Units reinspected in 2022	98%	95%	Units reinspected in 2023	100%	94%						
	NYSEG	RG&E																														
Units retested in 2022	99%	98%																														
Units retested in 2023	97%	99%																														
	NYSEG	RG&E																														
Units reinspected in 2022	98%	95%																														
Units reinspected in 2023	100%	94%																														
In 2021, the utilities had 16,249 cathodic protection units on its natural gas distribution and transmission systems.						In 2021, the utilities identified 5,221 critical valves. There are changes in inventory from year to year, as valves fail, are redesignated, or are removed. NorthStar adjusted results based on sample of missing re-inspections to the entire population.																										
Indoor Meter Sets (CFR §192.481)						Pressure Testing of Disconnected/Replaced Service Lines (CFR §192.725(a))																										
<table><tr><td></td><td>NYSEG/RG&E</td></tr><tr><td>Sets with inspection date within the past 5 years</td><td>99.98%</td></tr><tr><td>Sets inspected in 2018 and reinspected 5 years later</td><td>100%</td></tr><tr><td>Meters inspected in 2019</td><td>50,080</td></tr><tr><td>Date of Inspection Data</td><td>2/16/2024</td></tr><tr><td>Percent inspected in first 46 days of year</td><td>21% - on schedule</td></tr></table>							NYSEG/RG&E	Sets with inspection date within the past 5 years	99.98%	Sets inspected in 2018 and reinspected 5 years later	100%	Meters inspected in 2019	50,080	Date of Inspection Data	2/16/2024	Percent inspected in first 46 days of year	21% - on schedule	<table><tr><td></td><td>New Line Method</td><td>Replacement Method</td></tr><tr><td>Lines over 125 PSI</td><td>Nitrogen and soap</td><td>100% - tested same as new line</td></tr><tr><td>Lines under 125 PSI</td><td>Air</td><td>94% tested with air</td></tr><tr><td>Lines under 125 PSI</td><td>Air</td><td>6 % - unrecorded</td></tr></table>				New Line Method	Replacement Method	Lines over 125 PSI	Nitrogen and soap	100% - tested same as new line	Lines under 125 PSI	Air	94% tested with air	Lines under 125 PSI	Air	6 % - unrecorded
	NYSEG/RG&E																															
Sets with inspection date within the past 5 years	99.98%																															
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Inactive Service Lines (CFR §192.605(a))						On Shore Pipelines (CFR §192.481(a))																										
NorthStar reviewed the 2020 Inactive Service Line Report.						<table><tr><td></td><td>NYSEG/RG&E</td></tr><tr><td>Pipelines inspected in 2020</td><td>125</td></tr><tr><td>Pipelines reinspected by end of year 2023</td><td>122</td></tr><tr><td>Pipelines removed from service</td><td>3</td></tr></table>				NYSEG/RG&E	Pipelines inspected in 2020	125	Pipelines reinspected by end of year 2023	122	Pipelines removed from service	3																
	NYSEG/RG&E																															
Pipelines inspected in 2020	125																															
Pipelines reinspected by end of year 2023	122																															
Pipelines removed from service	3																															
<table><tr><td>Year of Inactivity</td><td>Total</td><td>Retired/Renewed</td><td>Other</td><td>Verified</td><td>Performance</td></tr><tr><td>2017</td><td>74</td><td>72</td><td>2</td><td>71</td><td>96%</td></tr><tr><td>2018</td><td>109</td><td>103</td><td>6</td><td>105</td><td>95%</td></tr></table>						Year of Inactivity	Total	Retired/Renewed	Other	Verified	Performance	2017	74	72	2	71	96%	2018	109	103	6	105	95%									
Year of Inactivity	Total	Retired/Renewed	Other	Verified	Performance																											
2017	74	72	2	71	96%																											
2018	109	103	6	105	95%																											
Internal Corrosion (CFR §192.475 (b)) and External Corrosion (CFR §192.459)						Leak Investigations (CFR §192.603)																										
NorthStar requested the inspection reports for all pipelines cut into in September 2022. There were 215 reports. NorthStar’s review found the reports complete for assessments of internal and external corrosion. NorthStar selected a sample of test reports where internal corrosion was marked as “N/A”. The utilities indicated that nothing was removed from the pipeline so no internal corrosion inspection could be performed.						NorthStar requested all Type 1 and Type 2 leak investigation reports for 2023. Over 800 reports were submitted. NorthStar sampled 50 reports and found: The reports to be complete. All necessary information needed to type the leak was recorded including cause of damage, location drawing, and equipment reading. All leaks were correctly classified with the exception of 6, where the field crew upgraded the severity of the leak.																										

Source: DR 503 Attachments 1 and 2, DR 504 Attachment 1, DR 505 Attachments 1-3, DR 506 Attachments 1 and 2, DR 507 Attachments 1 and 2, DR 508 Attachments 1 and 2, DR 509 Attachments 1-4, DR 510 Attachments 1 and 2, DR 511 Attachments 1 and 2, DR 791, DR 792, DR 793, DR 794, DR 795, DR 796, DR 797, DR 798, DR 799, DR 80, DR 802, DR 803, DR 804, DR 964 and NorthStar Analysis.

Gas Load Forecasting

16. There have not been significant changes to natural gas sales forecasting since the prior audit.

- Avangrid continues to use an econometric regression model to determine its baseline forecast.
- The baseline forecast is adjusted for energy efficiency.
- While forecasting processes have not changed, econometric variables used in the models may vary from year to year depending on statistical fit.¹⁰⁵
- Energy efficiency is not forecast beyond five years.¹⁰⁶
- Reduction in natural gas sales due to building electrification is not included.¹⁰⁷
- Avangrid does not develop a multi-year design-day forecast
- Avangrid uses a one-year forecasting horizon for NYSEG's and RG&E's design-day forecast.
- The forecast is developed for eight regions since service territories are not contiguous: seven for NYSEG and one for RG&E. The forecast is a regression analysis comparing actual daily load with heating degree days (HDD) for each of the winter months. Design day is then compared to the previous forecast, at which point a determination is made whether to change the design day load forecast for that supply area. The total system loads for all regions are then summed up for each company, seven for NYSEG and one for RG&E.¹⁰⁸

17. Gas sales forecasts are within an acceptable margin of error.

- NYSEG's forecasts typically experience variances of less than five percent with a five year total system average variance of one percent.¹⁰⁹
- RG&E's forecasts have experienced higher variances than NYSEG. RG&E's forecasts show volatility during the COVID-19 epidemic increasing the variances across all sectors in 2020 and 2021. RG&E system average variances, post COVID-19, are under three percent.¹¹⁰

D. RECOMMENDATIONS

The following recommendations apply to both NYSEG and RG&E.

1. Comply with §192.1007(a): based on the DIMP presentations of 18 risk categories, identify missing data for the entire pipeline system and develop a plan to collect all relevant information as part of normal pipeline activities.

¹⁰⁵ DR 103 Attachment 1

¹⁰⁶ DR 421 Supp Attachments 1 and 2

¹⁰⁷ DR 387 and Fact Verification

¹⁰⁸ DRs 386, 423 and 423 Attachment 1.

¹⁰⁹ Fact Verification Document VI, 857-868

¹¹⁰ Fact Verification Document VI, 857-868

2. Utilize sources of information such as past O&M procedures, abnormal operating events, purchase orders, material lists from old field orders or standards, and information from industry sources (e.g., plastic pipe database committee (PPDC), NTSB accident reports, or PHMSA advisory bulletins) to help identify threats. PHMSA identified potential threats that include, but are not limited to, non-leak events such as near misses, over pressurizations, and material and appurtenance failures.
3. Comply with §192.1007(b): use the information gathered in compliance with §192.1007(a) to identify threats to the integrity of the entire gas distribution systems by segment or lengths of similar characteristics – LPM, traditional LPM, non-traditional LPM and non LPM.
4. Do not eliminate any existing or potential threat to a system segment or lengths of pipeline without an adequate basis and justification for doing so. PHMSA clarified through enforcement guidance that to exclude a threat from consideration (i.e., the absence of a risk category as identified in the DIMP), an operator should document the basis for that conclusion and should not exclude a threat based on the unavailability of information to support the existence of such a threat.
5. Establish a formal schedule for the identification of missing risk data and report progress to the DPS quarterly.
6. Comply with §192.1007(c): subdivide all the NYSEG/RG&E pipeline systems into multiple regions based on similar pipeline characteristics (e.g., contiguous areas within a distribution pipeline consisting of mains, services and other appurtenances; areas with common materials or environmental factors), and for which similar mitigation actions would be effective in reducing risk.
7. Comply with §192.1007(d): determine and implement measures designed to reduce the risks from failure of their gas distribution pipelines. Define measures (actions and activities not merely statistical measures) to improve the leak management program.
8. Comply with §192.1007(d): prioritize, plan and address the risks of greatest concern first in the NYSEG/RG&E pipeline system replacement program.
9. Accelerate the replacement of LPM before the life expectancy expiration of pipeline materials.
10. Reconcile, correct and report solutions on record keeping discrepancies in the inspection data based on Conclusion 15. Add records that are missing or perform inspections and update the work management system to include missing inspections.
11. Comply with 16 NYCRR 255.825 and change the methodology per DPS guidance to calculate emergency response time. Report these changes to DPS and revise/correct the emergency response data reported since 2019.
12. Improve the gas load forecast model(s) to better address CLCPA considerations and to increase the forecasting horizon.

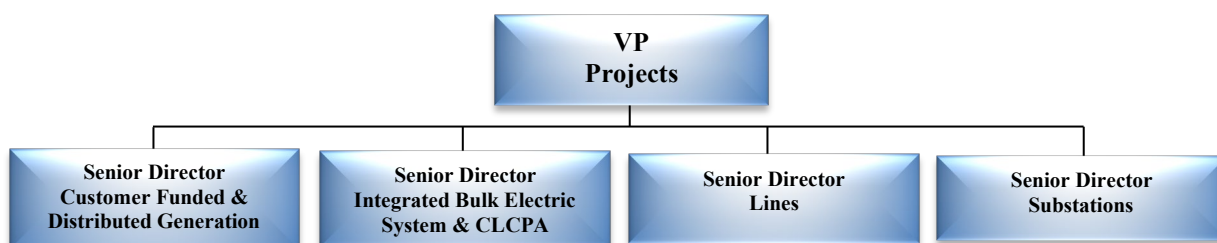
VII. PROJECT MANAGEMENT

This chapter addresses the cost-estimating and program/project-prioritization processes that Avangrid performs on behalf of NYSEG and RG&E for electric and gas capital projects. NorthStar's review also assesses adequacy and transparency associated with project prioritization and selection, budget development and rate-plan adherence information provided to DPS. Last, NorthStar evaluates Avangrid's coordination with municipalities related to interference and public improvement projects.

A. BACKGROUND

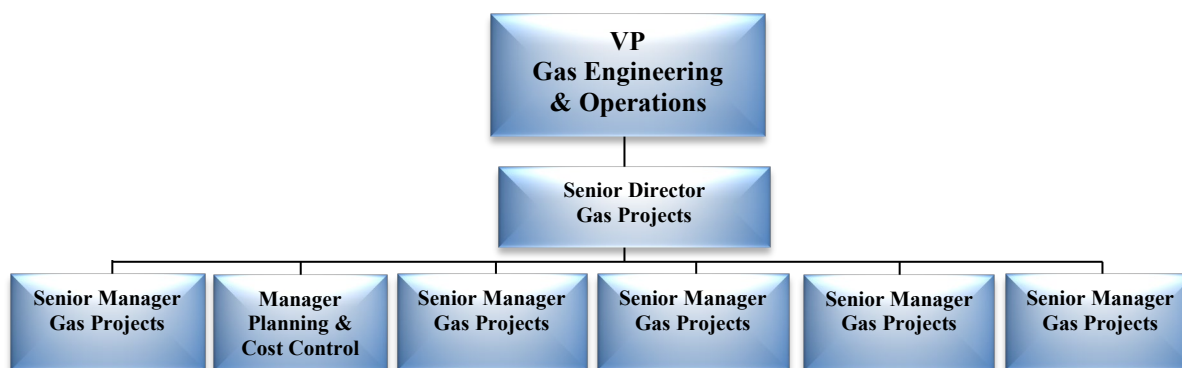
Avangrid utilizes two work groups that develop cost estimates for electric and gas capital programs and projects – Projects (Electric) and Gas Design and Delivery.¹ Organization charts are provided in **Exhibits VII-1 and VII-2**.

**Exhibit VII-1
Projects Organization Chart**



Source: DR 888 Attachment 3.

**Exhibit VII-2
Gas Design and Delivery Organization Chart**



Source: DR 888 Attachment 7.

According to Avangrid, at the start of a project, the Projects group, formerly called Electric Capital Delivery (ECD), receives a need statement for upgrades or rebuilds to existing infrastructure from Distribution Planning, Transmission Planning or Asset Management. The

¹ DR 888.

Project Manager and the Owner’s Engineer then create a conceptual drawing package and initial cost estimate. Initial estimates are used to create a cost-loaded schedule. The schedule is continually updated to refine the estimate as material commitments are made, portions of the project are bid, and purchase orders are written. The Projects group populates Microsoft Excel cost-estimating tools used for T&D and substations that were revised in 2022.² Estimated costs then are updated as the project receives bids for materials or services.³ The Gas Design and Delivery (i.e., E&D Gas Engineering or E&D Gas Field Planning) group is responsible for facilitating development of cost estimates for gas capital projects. The cost-estimating process is facilitated by NYSEG Gas Field Planners, RG&E Engineers or contracted engineers that develop the design of a given project.⁴

Avangrid’s Gas Design and Delivery organization uses two software platforms in the cost-estimating process – Contractor Pricing System (CPS) and SAP. The CPS has been in place since 2020 and uses pay identifiers, or PayIDs.⁵ PayIDs come from standard libraries that are updated when new contractor framework agreements are put out for bid.⁶ The purpose of PayID inclusion in framework agreement bids is to obtain market pricing for work/services to be completed for NYSEG and RG&E. Any unique items (e.g., equipment/services) needed for a project (including, but not limited to, materials, difficult construction, deep excavations, unique working hours, etc.) are developed from material estimates or conversation with contractors – they may also be based on experience. These “non-standard” PayIDs are included as “bid” items in CPS. SAP contains historical information from work orders and material pricing, which also is used in developing project estimates. Material requirements and quantities are added to SAP during development of a work order. SAP calculates costs based on material identifiers (MID). Associated costs for internal construction labor (e.g., inspectors, tie-in crews, etc.) are included in development of the order. Like materials, costs for these units of labor are held within SAP. Costs associated with overheads are calculated by SAP. Once development of a work order is complete, it is approved by Supervisors, Manager, Director, Vice President (VP) and company President based on dollar value of the order.⁷ Prior to 2022, cost-loaded schedules were developed in Microsoft Project; in 2022, the scheduling program was upgraded to Primavera P6.

State regulators in New York have been critical of Avangrid’s capital budgeting process.⁸ Avangrid did not have formal and consistent process requirements for capital investments. In addition, there was a lack of transparency into Business Area investment decision-making, and Avangrid provided insufficient documentation to support such decisions.⁹ Furthermore, the 2018 Management Audit found that Avangrid had a “Guide for Providing Input Parameters for Prioritization” for quantitative scoring of capital programs/projects; however, there was no

² DR 888.

³ DR 315.

⁴ DR 888.

⁵ DR 888.

⁶ DR 315

⁷ DR 888.

⁸ See In the Matter of New York State Electric & Gas Corporation and Rochester Gas & Electric Corporation, Cases 19-E-0378, 19-G-0379, 19-E-0380, 19-G-0381, Staff Electric Infrastructure Panel, September 2019

⁹ DR 736 Attachment 2.

evidence that this quantitative scoring process and procedure to prioritize and select projects for the Annual Work Plan (portfolio) was actually used.

Avangrid's Investment Planning group launched a "Planning and Investment Decision Making Process Redesign Initiative" in 2019. Objectives were to improve performance predictability and dependability of the investment plan; improve and develop consistent and transparent processes, responsibilities and governance; and achieve alignment with Iberdrola's global model and expectations. A project portfolio management (PPM) tool called Clarity PPM was implemented to track each project through its life cycle. The PPM tool serves as the system of record for capital investment prioritization and decision-making within Investment Planning.¹⁰

On an annual basis, each Avangrid business area enters projects into the PPM Tool for the regulated utilities. Avangrid business departments review their respective capital programs/projects to determine prioritization ratings represented as "working files" used in vetting sessions with department VPs.¹¹ As part of these vetting sessions, the Investment Planning group employs a capital program/project-prioritization methodology to rank all capital program/project investments for the Annual Work Plan. This plan is approved by the VPs and, ultimately, the respective utility Presidents. The Investment Planning group's prioritization process and timeline are provided in **Exhibit VII-3**.

Exhibit VII-3 Investment Planning Capital Program/Project Prioritization and Budget Process and Timeline



Source: DR 306 Attachment 1.

The NYSEG and RG&E capital budgets are composed of individually planned projects or groupings of similar projects called programs. These capital programs/projects are categorized as electric, electric generation, gas or common investments. Each program/project is also classified into an investment category: Customer Focus, Safety, Reliability, Asset Condition, and Strategic and Efficiency. These programs/projects are then rated as either Mandated,

¹⁰ DR 736 Attachment 2a.

¹¹ DRs 239 Attachment 11 and 309.

Significant, Moderate, or Low. NYSEG's and RG&E's planned capital investments from 2022 to 2024 are provided in **Exhibits VII-4 and VII-5** and valued at over \$3.8B.

Exhibit VII-4
NYSEG Planned Capital Investments from 2022 to 2024

Area/Rating	Mandated	Significant	Moderate	Low	Total
Electric	\$942,560,322	\$907,511,389	\$117,434,649	\$1,485,680	\$1,968,992,040
Electric Generation	\$31,595,598	\$2,228,883	\$5,839	\$ -	\$33,830,321
Gas	\$216,308,900	\$38,912,229	\$ -	\$ -	\$255,221,129
Common	\$ 241,470,397	\$43,995,086	\$81,306,916	\$14,848,757	\$381,621,156
Total	\$1,431,935,217	\$992,647,587	\$198,747,404	\$16,334,437	\$2,639,664,646

Source: DR 673 Attachment 1.

Exhibit VII-5
RG&E Planned Capital Investments from 2022-2024

Area/Rating	Mandated	Significant	Moderate	Low	Total
Electric	\$256,348,929	\$337,508,147	\$202,937,571	\$32,258	\$796,826,904
Electric Generation	\$18,969,841	\$3,185,525	\$669,704	\$ -	\$22,825,069
Gas	\$171,116,811	\$22,391,963	\$121,714	\$ -	\$193,630,487
Common	\$88,171,848	\$44,385,191	\$28,092,063	\$3,260,798	\$163,909,901
Total	\$534,607,429	\$407,470,825	\$231,821,052	\$3,293,056	\$1,177,192,361

Source: DR 673 Attachment 1.

B. AUDIT SCOPE ITEMS

- Determine the extent to which project estimating processes and systems support the development of accurate estimates for project selection, budget development, and customer estimates.
- Examine the impact of changes to capital project selection and delivery processes since the prior management audit.
- Assess the adequacy and transparency of information provided to the Department related to capital project selection, prioritization, and schedule, budget, and rate plan adherence.
- Evaluate coordination with municipalities regarding public improvement and interference projects. (Moved from **Chapter VIII - Work Management**)

Capital projects are investments in a utility's electric and gas system to preserve assets, ensure or improve system reliability and safety, protect the environment, or expand operating efficiency or capacity. Successful delivery of capital projects is contingent upon effectiveness of an organization's project management function and governance structures – plus policies, procedures, methodologies and frameworks employed. Individuals involved in planning, delivery and control of large, complex capital projects must possess several capabilities to assess reasonableness and provide guidance for important project-management decisions. These include thorough knowledge of both the engineering and construction industries, and the management mechanisms and techniques used to control capital projects. The ability to thoroughly research records, to query management for data, and to provide in-depth analyses is also key, as well as the background and experience to provide strong, credible

recommendations for project decisions. Determining overall implications and effectiveness of project management decision-making cannot be known until project completion and certainly cannot be fairly evaluated without significant analysis of records and artifacts created over the project life-cycle. Project documentation provides insight into the decision-making process and enables an independent observer to evaluate effectiveness of the organization and control mechanisms used during project planning, delivery and close-out. NorthStar's review of the project management task area found that Avangrid does not retain project records or documentation to demonstrate effective project management or evidence of sound project decision-making. Further details are included in the next section.

C. FINDINGS AND CONCLUSIONS

1. Avangrid does not use an industry-accepted work breakdown structure (WBS).

- Avangrid does not utilize a WBS as defined by the Project Management Institute, a nationally recognized trade organization.
- By definition, a WBS is a deliverable-oriented and hierarchical decomposition of total scope of work to be carried out by the project team to accomplish project objectives and create required deliverables.¹² Its purpose is to create a structured approach for project execution that objectively demonstrates earned value for completion of project elements and their respective expenditures. For example, a new substation WBS organizes project elements into logistical bundles such as foundation, equipment installation, wiring completion, grounding completion and conduit completion. These components would further break down into activities necessary to complete individual components. Importantly, a WBS identifies a deliverable as a result of effort, not the effort itself.
- Avangrid's project-management procedures provide multiple and conflicting definitions of a WBS, as noted below.

"The WBS is a deliverable-oriented hierarchical decomposition of the work to be executed to accomplish the project objectives and create the required deliverables. The WBS must define the total scope of the project into smaller and more manageable pieces of work called work packages that can be scheduled, cost estimated, monitoring, controlled and assigned to Account Responsible."¹³

"WBS (Work Breakdown Structure, a.k.a. work order or work request) A logical grouping of work activity for the purpose of tracking inside plant transactions."¹⁴

"WBS: Work Breakdown Structure. This is an SAP term for a major cost collector with multiples [sic] work orders under it."¹⁵

¹² 2021 Project Management Institute. A Guide to the Project Management Body of Knowledge, 7th Edition.

¹³ DR 239 Attachment 3. SOP.E-CD.E.04.02 Scope Management.

¹⁴ DR 239 Attachment 3. IUSA Capitalization Rules, Updated December 18, 2013.

¹⁵ DR 239 Attachment 3. SOP.P.04.09 Lessons Learned.

- NorthStar requested WBSs for select electric and gas capital projects. **Exhibit VII-6** provides the WBS for substation work associated with UH-N0000274.

Exhibit VII-6
WBS for NYSEG Project UH-N0000274 - Substation

UH-N0000274 Amenia Substation	
WBS Code	WBS Name
SPJ-00656	UH-N0000274 Amenia Substation
SPJ-00656.1	Amenia Substation
SPJ-00656.1.1	Overheads
SPJ-00656.1.1.2	Internal Overhead
SPJ-00656.1.1.2.1	Internal Overhead Actuals
SPJ-00656.1.1.3	External Overhead
SPJ-00656.1.1.3.2	External Overhead Actuals
SPJ-00656.1.1.4	Internal Labor
SPJ-00656.1.1.4.1	Internal Labor Actuals
SPJ-00656.1.1.1	AFUDC
SPJ-00656.1.1.1.3	AFUDC Actuals
SPJ-00656.1.1.6	Internal Misc
SPJ-00656.1.1.5	CIAC
SPJ-00656.1.2	Project Management
SPJ-00656.1.2.2	External Support Services
SPJ-00656.1.2.2.4	SECO
SPJ-00656.1.3	Permitting
SPJ-00656.1.3.1	State
SPJ-00656.1.4	Procurement
SPJ-00656.1.4.1	Services
SPJ-00656.1.4.1.6	Commissioning Procurement Amenia
SPJ-00656.1.4.1.5	Construction (Procurement 9-12 months)
SPJ-00656.1.4.1.5.2	Construction Procurement Amenia
SPJ-00656.1.4.1.5.1	FCM
SPJ-00656.1.4.1.4	SPC 3 to 7 Procurement
SPJ-00656.1.4.2	Materials & Equipment
SPJ-00656.1.4.2.3	Power Transformer (Ordering)
SPJ-00656.1.4.2.5	GIS (Ordering)
SPJ-00656.1.4.2.6	Disconnect Switches (Ordering)
SPJ-00656.1.4.2.7	Voltage Transformer (Ordering)
SPJ-00656.1.4.2.8	Surge Arrestors (Ordering)
SPJ-00656.1.4.2.4	DC Batteries (Ordering)
SPJ-00656.1.5	Engineering
SPJ-00656.1.5.1	Preliminary/Conceptual Engineering
SPJ-00656.1.5.1.1	Scope Definition
SPJ-00656.1.5.2	Detailed Engineering Amenia
SPJ-00656.1.5.3	SPC 3-7
SPJ-00656.1.5.4	Engineering Actuals
SPJ-00656.1.6	Materials & Equipment
SPJ-00656.1.6.5	Control House (Manufacture & Delivery)
SPJ-00656.1.6.6	Breakers (Manufacture & Delivery)
SPJ-00656.1.6.7	Power Transformer (Manufacture & Delivery)
SPJ-00656.1.6.8	DC Batteries (Manufacture & Delivery)
SPJ-00656.1.6.9	GIS (Manufacture & Delivery)
SPJ-00656.1.6.10	Disconnect Switches (Manufacture & Delivery)
SPJ-00656.1.6.11	Voltage Transformer (Manufacture & Delivery)
SPJ-00656.1.6.12	Surge Arrestors (Manufacture & Delivery)
SPJ-00656.1.6.13	Other Materials
SPJ-00656.1.6.14	Materials Actuals
SPJ-00656.1.7	Construction
SPJ-00656.1.7.3	Pre-Construction
SPJ-00656.1.7.4	Construction
SPJ-00656.1.7.4.1	In Ground
SPJ-00656.1.7.4.2	Above Ground
SPJ-00656.1.7.4.3	Transmission Line
SPJ-00656.1.7.4.4	Amenia Reduction
SPJ-00656.1.7.1	Construction Actuals
SPJ-00656.1.8	Commissioning
SPJ-00656.1.9	Close-out activities

Source: DR 482 Attachment B.

- As shown in **Exhibit VII-6** above, Avangrid’s WBS includes Overheads, Internal Miscellaneous, Construction, Construction Actuals, Permitting, Materials and Equipment, Services, DC Batteries (Ordering), Surge Arrestors (Manufacture & Delivery), etc. This is not a WBS; rather, **Exhibit VII-6** represents groups of cost categories. This example further supports Avangrid’s use of a WBS as a “major cost collector” and a mechanism for “tracking inside plant transactions”, rather than a hierarchical decomposition of project scope into “work packages that can be scheduled, cost estimated, monitored, and controlled”.
- SOP.E-CD.04.04 Cost Management defines 12 steps in developing “high quality cost estimates”. One of these steps is to determine estimating structure (e.g., WBS).¹⁶ NorthStar reviewed the cost estimate provided by Avangrid in PM050 (the project’s baseline cost) for UH-N0000274 and compared it to the WBS provided in **Exhibit VII-6** above.¹⁷ There is no discernible relationship.

2. Avangrid does not adhere to cost-estimating development processes described in its own procedures.

- All large capital projects adhere to the Quality Management System (QMS) that was developed and implemented in 2014 and is ISO9001-certified.¹⁸ Avangrid’s cost-estimating document for electric and gas projects is SOP.E-CD.04.04: Cost Management Standard Operating Procedure. This document is part of the QMS, which serves as a basis for how all projects are estimated and executed.¹⁹
- Avangrid has stated that it has not made changes to its capital project cost-estimating process since the previous audit.²⁰ Avangrid’s statement is supported by the fact that SOP.E-CD.04.04 has not been updated since 2014.²¹ Avangrid has made changes to cost-estimating templates for electric capital projects only.²²

“Since the last management audit, the process itself has not changed; however, the electric templates used to develop the cost estimates have been continually updated and refined based on project knowledge during planning and execution, cost of inflation, and other contributing factors.”²³

- SOP.E-CD.0404 outlines a 12-step process for cost-estimate development in **Exhibit VII-7**.

¹⁶ DR 241 Attachment 6.

¹⁷ DR482 Supplement 1 Attachment K-1.

¹⁸ DR 239.

¹⁹ DR 241.

²⁰ DR 241

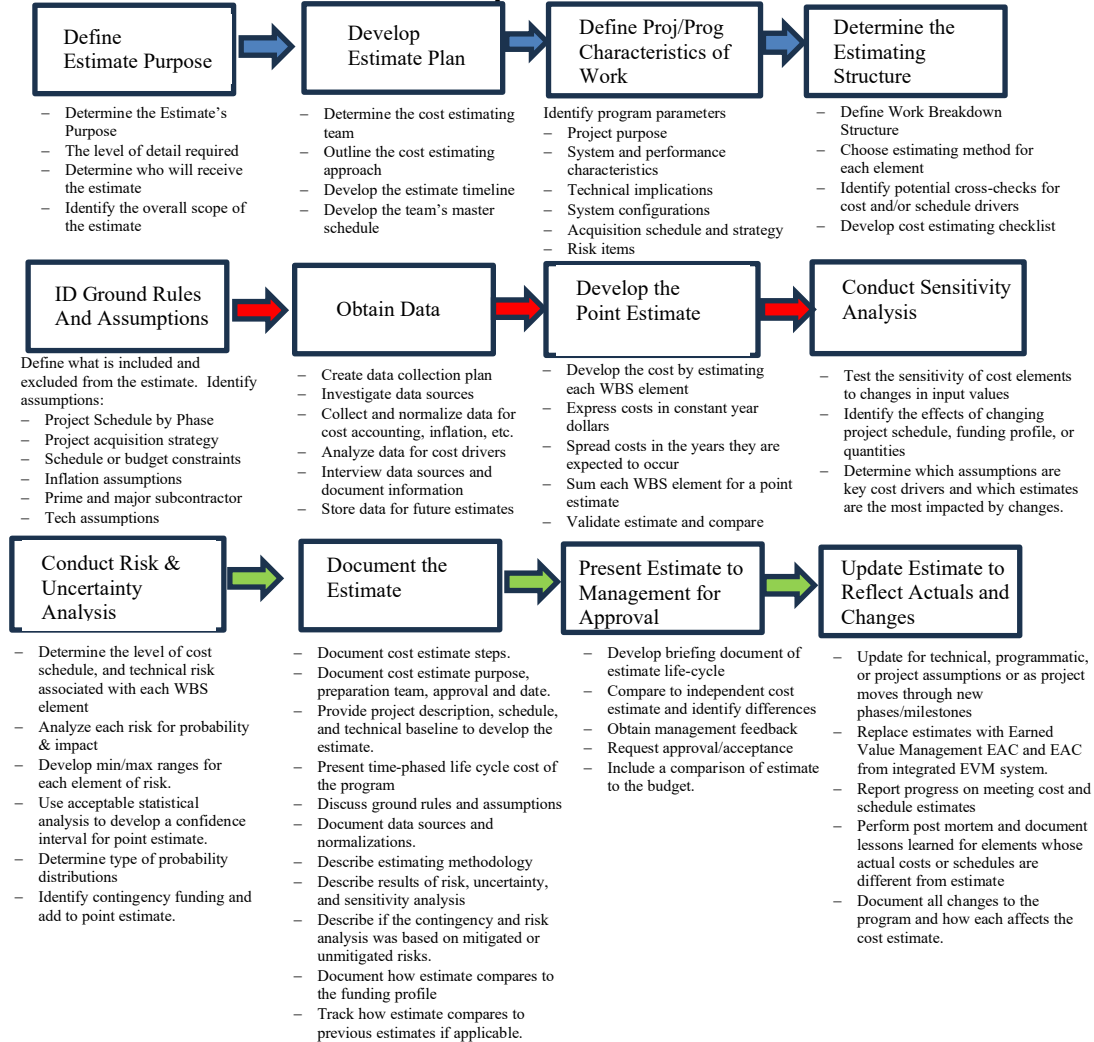
²¹ DR 241 Attachment 6.

²² DR 241 Attachments 1 through 5.

²³ DR 241.

Exhibit VII-7

Cost Estimate Development Process and Activities



Source: DRs 239 Attachment 3 and 241 Attachment 6.

- NorthStar requested cost-estimate documentation in accordance with cost estimate development process in SOP.E-CD.04.04 for selected electric and gas capital projects. Avangrid was not able to provide documentation to support adherence to its own procedure.²⁴

3. Avangrid does not produce detailed cost estimates for NYSEG and RG&E electric and gas capital projects.

- Avangrid did not provide detailed cost estimates for NYSEG and RG&E electric and gas capital projects for NorthStar's review.

²⁴ DR 1051

- NorthStar requested detailed cost estimates over the project life cycle of 15 current and completed NYSEG and RG&E electric and gas capital projects. A majority of cost estimates Avangrid provided were “summary” level cost estimates contained in Project Charters (PM020) and Project Management Plans (PM050) for select projects, as shown in **Exhibit VII-8**.

Exhibit VII-8

Project Charter and Project Management Plan Cost Estimates Provided by Avangrid

Project ID	Project Type	Project Charter	Project Management Plan	Notes
UH-R0000070	Electric	NA	Yes	Project started prior to project charter requirement. Summary cost estimate from unapproved, undated Project Execution Plan provided.
UH-N0000040	Electric	NA	Yes	Project started prior to project charter requirement. Summary cost estimate from Scope Definition document was provided.
UH-N0005626	Electric	NA	Yes	Project started prior to project charter requirement. Summary estimate provided in PMP
UH-N0000210	Electric	Yes	Yes	Summary level cost estimates
UH-R0005313	Gas	NA	NA	No project cost estimates.
UH-N0005830	Gas	NA	NA	No project cost estimates.
UH-N0005021	Gas	NA	NA	No project cost estimates.
UH-N0006160	Gas	NA	NA	No project cost estimates.
UH-N0005637	Gas	Yes	NA	Summary level cost estimate in Project Charter. No PMP – below threshold.
UH-R0005473	Electric	Yes	Yes	Summary level cost estimates
UH-N0006351	Gas	Yes	NA	Summary level cost estimate. No PMP below threshold
UH-N0005997	Electric	Yes	Yes	Summary level cost estimate.
UH-N0000274	Electric	Yes	Yes	Detailed cost estimate in Project Charter. Summary level estimate in PMP.
UH-R0000718	Electric	Yes	Yes	Summary level estimate.
UH-N0000414	Electric	Yes	Yes	Summary level estimate.

Sources: DRs 470 through 484.

NA – Not Available.

- Examples of “summary” level project cost estimates contained in Project Charters (PM020) and Project Management Plans (PM050) are provided in **Exhibit VII-9** and **Exhibit VII-10**, respectively.

Exhibit VII-9
Examples of Cost Estimates in Project Charters (PM020)

Project Budget Cash flow								
	2018	2019	2020	2021	2022	2023	Year 7	Total
AC	\$250,000	\$99,549	\$220,109		\$139,062	\$2,863,972		\$3,572,692
Non AC	\$62,224	\$45,495	\$112,220	\$48,044	\$91,873	\$1,051,010		\$1,410,867
Contribution								\$0
TOTAL	\$312,224	\$145,043	\$332,330	\$48,044	\$230,935	\$3,914,982	\$0	\$4,983,558
Contingency Included:	No	%	Estimate Accuracy:	-	5	%	+	10 %

Source: DR 478 Attachment J.

Project Budget Cashflow								
	2018	2019	2020	2021	Year 5	Year 6	Year 7	Total
AC		\$793,659	\$5,774,918	\$6,453,922	\$5,000,000			\$18,022,499
Non AC		\$121,638	\$1,489,034	\$1,610,672	\$476,240			\$3,697,584
Contribution								\$0
TOTAL	\$0	\$915,297	\$7,263,952	\$8,064,594	\$5,476,240	\$0	\$0	\$21,720,083
Contingency Included:	50	%	Estimate Accuracy:	-	-50	%	+	100 %
Current PBAF Attached?				Yes				

Source: DR 479 Attachment J.

Project Budget Cash flow								
	2022	2023	Year 3	Year 4	Year 5	Year 6	Year 7	Total
AC	\$401,725	\$2,875,000						\$3,276,725
Non AC	\$125,723	\$1,092,500						\$1,218,223
Contribution								\$0
TOTAL	\$527,448	\$3,967,500	\$0	\$0	\$0	\$0	\$0	\$4,494,948
Contingency Included:	No	%	Estimate Accuracy:	-	100	%	+	%

DR 480 Attachment J.

Project Budget Cash flow								
	2020	2021	2022	2023	NA	NA	NA	Total
AC		\$564,189	\$6,018,932	\$833,887	NA	NA	NA	\$7,417,008
Non AC	\$4,700	\$439,804	\$2,265,197	\$381,112	NA	NA	NA	\$3,090,813
Contribution	NA	NA	NA	NA	NA	NA	NA	\$0
TOTAL	\$4,700	\$1,003,993	\$8,284,129	\$1,214,999	\$0	\$0	\$0	\$10,507,821
Contingency Included:	33	%	Estimate Accuracy:	-	25	%	+	50 %

DR 481 Attachment J.

Exhibit VII-10
Examples of Cost Estimates in Project Management Plans (PM050)

Project Budget Cash Flow								
BE SURE TO POPULATE YEAR CELLS WITH ACTUAL YEARS								
	2016	2017	2018	2019	2020	2021	Year 7	Total
AC	\$192,404	\$258,514	\$597,718	\$10,670,642	\$17,407,688	\$355,000		\$29,481,966
Non AC	\$75,770	\$114,021	\$268,044	\$3,527,926	\$6,982,181	\$145,000		\$11,112,942
Contribution								\$0
TOTAL	\$268,174	\$372,535	\$865,762	\$14,198,568	\$24,389,869	\$500,000	\$0	\$40,594,908
Contingency Included:			Budget Accuracy:	-	%	+	%	
Current PBAF ProjectWise Link:	N/A							

Source: DR 473 Attachment K.

Project Budget Cash Flow								
BE SURE TO POPULATE YEAR CELLS WITH ACTUAL YEARS								
			2019	2020	2021	2022	2023	Total
AC			\$734,405	\$3,325,142	\$18,189,354	\$7,355,542	\$8,483,477	\$38,087,920
Non AC			\$165,765	\$869,321	\$4,638,382	\$1,787,043	\$1,638,671	\$9,099,182
Contribution			\$0	\$0	\$0	\$0	\$0	\$0
TOTAL			\$900,170	\$4,194,462	\$22,827,736	\$9,142,585	\$10,122,149	\$47,187,102
Contingency Included:	Yes		Budget Accuracy:	-	20 %	+	20 %	
Current Charter ProjectWise/ECM Link:	2.3a PBAF APPROVAL							

Source: DR 479 Attachment K.

Project Budget Cash Flow								
BE SURE TO POPULATE YEAR CELLS WITH ACTUAL YEARS								
	2020	2021	2022	2023				Total
AC	\$0	\$564,189	\$2,759,790	\$5,391,483				\$8,715,462
Non AC	\$4,700	\$439,804	\$1,278,904	\$2,581,652				\$4,305,060
Contribution								\$0
TOTAL	\$4,700	\$1,003,993	\$4,038,694	\$7,973,135	\$0	\$0	\$0	\$13,020,522
Contingency Included:	Yes		Budget Accuracy:	-	10 %	+	20 %	
Current Charter ProjectWise/ECM Link:	N5231-2-01-O-0014 Hillcrest T.P.04.01B Project Chart							

Source: DR 481 Attachment K.

Project Budget Cash Flow									
BE SURE TO POPULATE YEAR CELLS WITH ACTUAL YEARS									
	2018	2019	2020	2021	2022	2023	2024	2025	Total
AC	\$78,997	\$2,085,775	\$1,359,834	\$2,208,119	\$8,436,818	\$13,174,409	\$14,153,579	\$5,154,473	\$46,735,818
Non AC	\$85,110	\$499,830	\$694,056	\$846,180	\$2,337,860	\$4,551,484	\$3,732,620	\$1,853,362	\$14,612,069
Contribution									\$0
TOTAL	\$164,107	\$2,585,605	\$2,053,891	\$3,054,299	\$10,774,678	\$17,725,893	\$17,886,198	\$7,007,835	\$61,347,887
Contingency Included:	Yes		Budget Accuracy:	-	30 %	+	60 %		
Current Charter ProjectWise/ECM Link:	Station 46 Project Charter								

Source: DR 483 Attachment K

- NorthStar requested information to support cost estimates, as noted in the exhibits above. Avangrid responded as follows:

“The information that the Companies developed to determine the referenced cost estimates was previously provided in the Companies' responses to [document requests],

including their subsequent supplemental responses. The Companies do not maintain any additional detailed cost estimates.”²⁵

- Avangrid could not provide supporting documentation for revised forecasts to develop selected capital project budgets. Avangrid stated that:

“No additional documentation of corresponding cost information for the reforecasts that were used to develop the budget amounts for approval exist.”²⁶

4. Avangrid does not perform analysis of cost-estimating accuracy; therefore, Avangrid cannot determine whether estimates for NYSEG and RG&E projects provide a solid basis for project selection, alternatives analysis, budget development and customer estimates.

- Avangrid’s cost-management procedure document (SOP.E-CD.04.04) states that high-quality cost estimates provide an essential element for successful project and program management. High-quality estimates should not only be comprehensive, well-documented and credible, but also accurate.²⁷
- SOP.E-CD.04.04 states that determination of cost-estimate classifications helps ensure that cost-estimate quality is appropriately considered. SOP.E-CD.04.04 has a table developed based on information from the Advancement of Cost Engineering International and Electric Power Research Institute (EPRI)

“Widely accepted cost estimate classifications are found in the Association for Advancement of Cost Engineering International (AACEI) Recommended Practices.”²⁸

- NorthStar requested the EPRI document and AACEI Recommended Practice that were used to develop the cost-estimating accuracy table in Avangrid’s SOP.E-CD.04.04. Avangrid was not able to locate the EPRI document. Avangrid provided AACEI’s Recommended Practice 17R-97 which described only generic guidelines of estimate classifications to asset project cost estimates.²⁹ NorthStar requested further clarification on AACEI documentation used by Avangrid for cost estimating. Avangrid provided AACEI’s Recommended Practice No. 18R-97 – Cost Estimate Classification System – As Applied in Engineering, Procurement, And Construction for the Process Industry. AACEI provides a description of industry application for this recommended practice.

“For the purpose of this addendum, the term process industry is assumed to include firms involved with the manufacturing and production of chemicals, petrochemicals, and hydrocarbon processing. The common thread among these industries (for the purpose of estimate classification) is their reliance on process flow diagrams (PFDs)

²⁵ DRs 903 Supplement, 904 Supplement, 905 Supplement, and 906 Supplement.

²⁶ DRs 1030 to 1033.

²⁷ DR 239 Attachment 3.

²⁸ DR 239 Attachment 3.

²⁹ DR 1086 and 1086 Attachment 1.

and piping and instrument diagrams (P&IDs) as the primary scope defining documents. These documents are key deliverables in determining the level of project definition, and thus the extent and maturity of estimate input information.

Estimates for process facilities center on mechanical and chemical process equipment, and they have significant amounts of piping, instrumentation, and process controls involved. As such, this addendum may apply to portions of other industries, such as pharmaceutical, utility, metallurgical, converting, and similar industries.”³⁰

- A closer approximation for most utility-industry construction cost-estimating is AACEI’s Recommended Practice No. 56R-08, due to its reliance on project definition documents and schematic drawings as primary scope-defining documents, rather than PFDs and P&IDs.³¹

“For the purposes of this document, the term general construction is assumed to include both new construction as well as renovation construction projects. It is intended to be used for building (vertical) construction, as well as site/civil projects. It is intended to cover projects which are repetitive and repeatable. Examples for buildings include: residential construction, commercial buildings, hotels, resorts, offices, retail, etc. This also includes site/civil projects. Examples for site/civil projects include: site development, utility infrastructure, telecommunications, water pipelines, sanitary sewer pipelines, storm water and water resources projects. The common thread among these industries for the purpose of estimate classification is their reliance on project definition documents (basis of design) and schematic drawings as primary scope defining documents. These documents are key deliverables in determining the degree of project definition, and thus the extent and maturity of estimate input information.”³²

- The AACEI cost-estimate classification matrix for Building and General Construction Industries is provided in **Exhibit VII-11**.

³⁰ DR 1087 Attachment 1.

³¹ See DRs 470 to 484 where available for examples of project definition documentation and schematic drawings.

³² AACE International Recommended Practice No. 56R-08, Cost Estimate Classification System – As applied to Engineering, Procurement, and Construction for the Building and General Construction Industry, August 7, 2020, pg. 2 of 21.

Exhibit VII-11
AACEI Cost-Estimate Classification Matrix (2020)

ESTIMATE CLASS	Primary Characteristic	Secondary Characteristic		
	MATURITY LEVEL OF PROJECT DEFINITION DELIVERABLES Expressed as % of complete definition	END USAGE Typical purpose of estimate	METHODOLOGY Typical estimating method	EXPECTED ACCURACY RANGE Typical variation in low and high ranges at an 80% confidence interval
Class 5	0% to 2%	Functional area, or concept screening	SF or m ² factoring, parametric models, judgment, or analogy	L: -20% to -30% H: +30% to +50%
Class 4	1% to 15%	or Schematic design or concept study	Parametric models, assembly driven models	L: -10% to -20% H: +20% to +30%
Class 3	10% to 40%	Design development, budget authorization, feasibility	Semi-detailed unit costs with assembly level line items	L: -5% to -15% H: +10% to +20%
Class 2	30% to 75%	Control or bid/tender, semi-detailed	Detailed unit cost with forced detailed take-off	L: -5% to -10% H: +5% to +15%
Class 1	65% to 100%	Check estimate or pre bid/tender, change order	Detailed unit cost with detailed take-off	L: -3% to -5% H: +3% to +10%

Source: AACEI International Recommended Practice No. 56R-08, Cost Estimate Classification System – As Applied to Engineering, Procurement and Construction for the Building and General Construction Industry, August 7, 2020, pg. 3 of 21.

- SOP.E-CD.04.04 provides a table for Avangrid estimate types. NorthStar compared Avangrid's cost-estimate types included in SOP.E-CD.04.04 to the AACEI Cost Estimate Classification Matrix (**Exhibit VII-12**). Specific differences appear in the number of Estimate Types (or Estimate Classes), Level of Project Definition, and Expected Accuracy Ranges. Avangrid's internal cost-estimate thresholds are more favorable in comparison, especially for Expected Accuracy Ranges.

Exhibit VII-12
Comparison of AACEI and Avangrid Cost-Estimate Classifications

Estimate Type (Avangrid)	Estimate Class (AACEI)	Level of Project Definition (Avangrid)	Level of Project Definition (AACEI)	Methodology	Expected Accuracy Ranges (Avangrid)	Expected Accuracy Ranges (AACEI)
NA	Class 5	NA	0% to 2%	SF or M2 factoring, parametric models, judgement or analogy	NA	L: -20% to -30% H: +30% to +50%
A	Class 4	1% to 15%	1% to 15%	Parametric models or assembly-driven models	L: -15% to -60% H: +30% to +120%	L: -10% to -20% H: +20% to +30%
B	Class 3	10% to 40%	10% to 40%	Semi-detailed unit costs with assembly level line items	L: -10% to -30% H: +20% to +60%	L: -5% to -15% H: +10% to +20%
C	Class 2	30% to 70%	30% to 75%	Detailed unit cost with	L: -5% to -15%	L: -5% to -10%

				forced detailed take-off	H: +10% to +30%	H: +5% to +15%
D	Class 1	50% to 100%	65% to 100%	Detailed unit cost with detailed take-off	L: -5% to -5% H: +10% to +10%	L: -3% to -5% H: +3% to +10%

Source: DR 239 Attachment 3 and AACEI, August 2020.

- Avangrid has stated that for T&D and substation projects, cost-estimating tools using purchase orders and framework agreements can provide overall cost estimates in accordance with AACE. These tools can provide multiple cost-estimate classes ranging from -50/+200 for IP1 – Conceptual to -10 /+10 for IP3 – Execution.³³ Based on information presented in **Exhibit VII-12** above, neither AACEI nor SOP.E.CD.04.04 recognizes cost-estimate classes or value ranges.
- SOP.E-CD.04.04 states there are “quality gates” for project management that require supporting cost estimates.
 - Quality Gate: PMO20 – Approve Project Initiation Plan – Three cost estimates are needed for this Quality Gate. These include a “definitive” estimate, a Life Cycle Cost of likely alternatives, and a “total project cost” (TPC) range. The TPC range considers project risks and estimate uncertainty. A PM020 deliverable is the Project Charter with cost estimates.
 - Quality Gate: PMO50 – Approve Project Management Plan – Since available project information has matured, a “single point” cost estimate is developed. This estimate represents the entire project and includes allowances for risk and uncertainty (i.e., Management Reserve and Contingency). This estimate is the basis for the project’s “Performance Measurement Baseline” used for earned-value reporting.
 - Quality Gate: PMO70 (optional) – Approve Start of Construction – Cost estimates based on Final Design may incorporate some actual bids received from contractors used to establish project requirements for construction or execution.
 - Quality Gate: PMO300 – Project Closure – Establishes when the project is ready for closure. Determines final Estimate at Completion (EAC) and provides final project cost and performance reports in accordance with approved WBS.³⁴
- Avangrid documentation states that a combination of estimate types must be used to develop a comprehensive estimate. In these situations, estimators should use a combination of detailed unit-cost estimating (Type D) techniques for work that will be executed in the near future, preliminary estimating (Type C) techniques for work that is currently in planning stages but less defined, and order-of-magnitude estimating (Type A) techniques for future work that has not been well defined.³⁵ **Exhibit VII-13** summarizes suggested estimate types for “quality gates” and corresponding AACEI estimate classes.

³³ DR 315.

³⁴ DR 239 Attachment 3.

³⁵ DR 239 Attachment 3.

Exhibit VII-13
Types of Estimates for Quality Gates

Quality Gate	Suggested Estimate	Avangrid Estimate Type	AACEI Estimate Class
PM020	Estimate of costs prior to PM040	D	Class 1
	Estimate of costs prior to PM050	C	Class 2
	Total Project Cost Range	B	Class 3
PM050	Total Project Cost Range	D	Class 1

Source: DR 239 Attachment 3. Avangrid documentation does not list “quality gates” PM070 or PM0300.

- NorthStar requested a list of capital projects completed during the past five years. The intent of the request was to assess the accuracy of cost and schedule estimates and to select a sample of NYSEG and RG&E projects for a detailed review of Avangrid’s project management processes. NorthStar requested the following information about each project:
 - Brief project description.
 - Original cost estimate.
 - Last approved cost estimate.
 - Final actual cost.
 - Initial and final project start and completion dates.³⁶
- Avangrid’s original response to NorthStar’s request was entirely deficient.³⁷ Avangrid stated that:

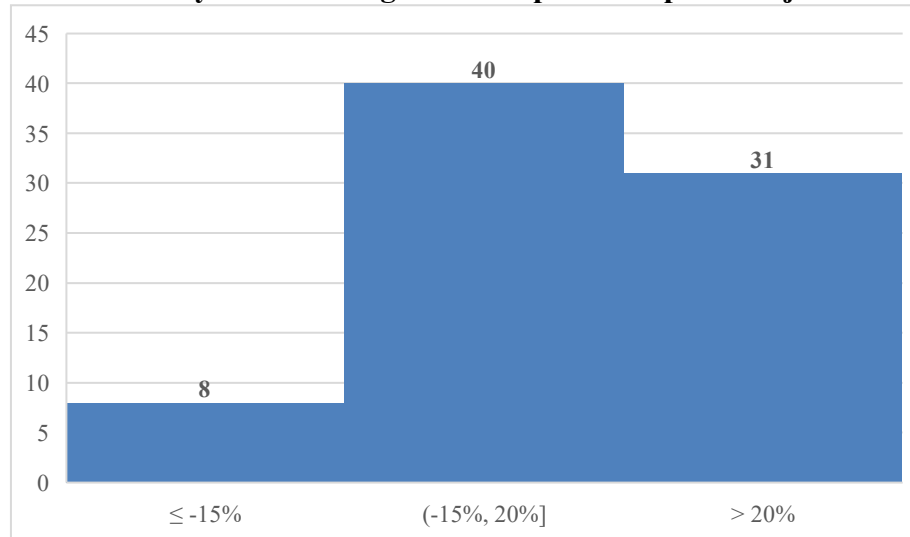
“The Original Estimate and Last Approved Estimate provided in [the document request] were from "Budget Plans" in the Investment Planning system. These records were not aligned with the Quality Gate documentation. These Budget Plans are not detailed in their description of what is being approved, and therefore, as noted previously, the records utilized were not aligned to Quality Gate documentation.”³⁸
- Avangrid provided a list of 79 completed capital projects from updated information, including 39 electric and 40 gas projects. Using AACEI estimating-accuracy ranges, NorthStar found the following:
 - Almost half, or 39 projects, landed outside estimating-accuracy range for AACEI Class 3 used for PM020 quality gate when compared to final project cost, as shown in **Exhibit VII-14**.

³⁶ DR 1049 Attachment 1.

³⁷ DR 242 Attachment 1.

³⁸ DRs 1033 to 1045.

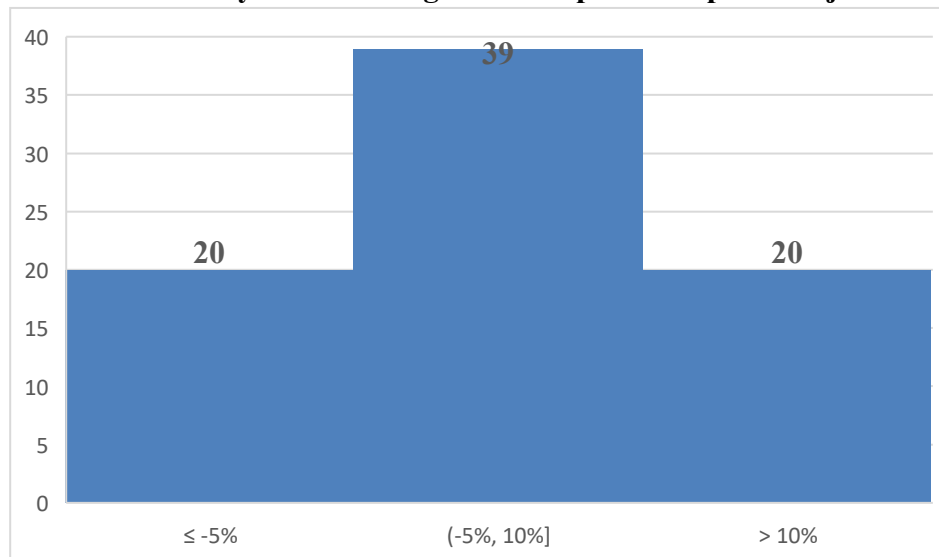
Exhibit VII-14
Comparison of PM020 Cost Estimates to Final Project Cost Using AACEI Estimating Accuracy Class 3 Range for Completed Capital Projects



Source: DR 1049 Attachment 1.

- A majority, or 40 projects, fell outside estimating-accuracy range for AACEI Class 1 used for the PM050 quality gate when compared to the final project cost, as shown in **Exhibit VII-15**.

Exhibit VII-15
Comparison of PM050 Cost Estimates to Final Project Cost Using AACEI Estimating Accuracy Class 1 Range for Completed Capital Projects



Source: DR 1049 Attachment 1.

- Further evidence of poor estimating accuracy's impact is provided in Avangrid project documentation.

“It wasn't till late summer of 2022 when the Manager of design and delivery made the decision to hand the project over to PM [name] to manage. At this point engineering design was 98% complete the budget was submitted [sic] for P23 and added to the current rate case filing [sic]. The PM reviewed the project budget and determined that the estimated budget was insufficient [sic]. It was the decision of the manager of gas design and delivery to not request additional funding till rate case was settled. In 2022 the PM requested IP to open 2023 AC so RFP's [sic] for long lead Material and construction [sic] services could be procured in order to start Construction in late spring 2023. The PM knowing the bid award would be greater then what was originally budgetd [sic] requested addittioal [sic] AC so PO could be issued to awarded contractor. PM was notified that addittonal [sic] AC we [would] requirie [sic] GSP approval. PM was notified that a Charter would be required and approved prior to GSP meeting. PM has completed the Charter with the info [necessary] for presentation. an Offset for the required additonal [sic] AC has been identified [sic] within the NYSEG Gas Capital portfolio.”³⁹

“Real Estate cost was underestimated. Did not account for real estate acquisitions.”

“Material cost was underestimated due to unrealistic assumptions.”

“There are non-standard PayCU's which encompass of \$6.75M of the bid. This amount was not accounted for in the initial construction estimate such as foundation, mobilization, vacuum excavation, and environmental controls.”

“Our initial estimates were assumed at roughly \$500k per mile, whereas the lowest bid came in at \$1M per mile. This could result from unrealistic assumptions.”⁴⁰

“The PayCU's were not accurate and some items were missing.”⁴¹

“PAYCU's were not accurate to project needs- Rock was missing for excavation. Different items were lumped [together] in one PAYCU. Caused confusion and re-negotiation of pricing.”⁴²

Avangrid develops annual capital plans using individual project cost estimates.⁴³ However, budgets often are based on estimates that are not credible and require constant revision, funding transfers or project deferral to later years.

- SOP E.CD.04.04 identifies cost-estimating methodologies based on historical project costs that are used to estimate projects of similar size and scope. When doing so, historical data should be directly related to current scope's performance characteristics.⁴⁴ Cost estimates are developed from several sources, including plant accounting records. However, NYSEG and RG&E plant accounting data lack granular

³⁹ DR 480 Attachment J.

⁴⁰ DR 479 Attachment Mii

⁴¹ DR 473 Attachment S.

⁴² DR 484 Supp 1 Attachment H.

⁴³ DR 244.

⁴⁴ DR 239 Attachment 3.

detail, which prevents calculating a precise unit-cost metric by asset type. For more information, see **Chapter IV – Budget and Finance**.

- Avangrid does not perform detailed analysis of cost-estimating accuracy.⁴⁵ Avangrid has not performed an audit of project cost-estimating accuracy during the evaluation period.⁴⁶

5. Avangrid uses multiple capital program/project-prioritization processes, all of which are deficient. Avangrid’s capital program/project-prioritization processes result in subjective determinations of importance and lack analytical relationship or standardization.

- NorthStar observed six capital program/project-prioritization processes that Avangrid used during the audit evaluation period. Various project-prioritization processes were used by Investment Planning, Electric Operations, and Gas Operations.⁴⁷
- Avangrid’s Investment Planning group’s capital program/project-prioritization methodology is used for all capital programs/projects including electric, electric generation, gas and common (e.g., IT, Facilities, etc.) investments. The prioritization process began in June 2021, led by the Investment Planning group for CY2022, CY2023 and CY2024 planned capital budgets.⁴⁸
 - The new prioritization methodology modified the qualitative approach identified in the prior management audit to introduce some quantitative inputs.
 - The modified process inputs are as follows:
 - Classification of each program and project into an investment category - Customer Focus, Safety, Reliability, Asset Condition, and Strategic and Efficiency. Each investment category receives an associated numerical “weighting”.
 - Rating of each program and project as Mandated, Significant, Moderate, or Low. Each investment impact has a corresponding numerical value. Mandated relates to regulatory or operational requirements and has the highest numerical value.⁴⁹
- Despite quantitative aspects of the modified methodology, selections of investment categories and prioritization ratings remain based on an individual’s or a team’s industry and company experience.

“While this methodology serves as a starting point for reviewing portfolios and identifying opportunities to defer or adjust project budgets to achieve constrained targets, it is not the sole basis for prioritization decisions. The company also relies upon

⁴⁵ DRs 244, 244 Attachments 1 and 2, 245, and 889 Supplement 1.

⁴⁶ DR 1090.

⁴⁷ DRs 234, 305 Attachment 1, 306 Attachment 1, 675, 675 Attachment 4.

⁴⁸ DR 234.

⁴⁹ DR 306 Attachment 1.

- subject matter expertise to fine-tune and refine prioritizations in the final decision-making process.”⁵⁰
- Certain Avangrid business areas use processes to determine prioritization ratings for their respective capital programs/projects.⁵¹
 - A prioritization methodology used by Electric Operations considers subjective factors such as “Source Documentation” and an “Adjustment Factor” which is weighted at 32 percent of a 100-percent weighting scheme.⁵²
 - “Source Documentation” considers the “quality” of the outlines used in development of regulatory filings (rate cases, Five-Year Plan, etc.), backup and justifications for projects/programs, and cost estimates.
 - “Adjustment Factor” is a subjective value used to increase the rating of specific projects and programs that may not fit specifically into any other category. Alternatively, this factor may be used as a result of qualitative discussions with business areas.
 - Other prioritization methodologies used by Electric Operations and Gas Operations require input from SMEs on program/project categorization and rating selections or depend on quality of data entered into a system.
 - Capital program/project-prioritization methodologies within Avangrid’s electric and gas operations organizations do not have any analytical relationship to the Investment Planning group’s methodology.⁵³
 - Electric Operations - Electric Operations’ prioritization methodology differs significantly from the Investment Planning prioritization process. For the 2023 budget, the original plan demonstrating full investment need was provided in the NYSEG and RG&E Five-Year Capital Investment Plan filed in March of 2022. This plan clarified that it represented the full need of electric capital program/project investment from a “reliability perspective,” and that subsequent prioritization would take place as part of filing the then-upcoming NYSEG and RG&E rate case applications. To prioritize significant reliability investment in the original plan, a different prioritization tool was developed to supplement overarching prioritization and optimize investment allocated for electric projects.⁵⁴
 - Electric Operations’ prioritization process does not consider all strategic investment categories (i.e., Customer Focus, Safety, Reliability, Asset Condition, and Strategic and Efficiency). Avangrid stated that its 2023 budget focused on “reliability investments”, as outlined in the March 2022 Five-Year Capital Plan, which detailed the total investment need for reliability, with

⁵⁰ DR 234.

⁵¹ DRs 307 Attachment 3, 675 Attachments 2 and 3 and 718 Attachment 1.

⁵² DR 307 Attachment 3.

⁵³ DRs 307 Attachment 3, 305, 415 Attachment 1, and 675.

⁵⁴ DR 307.

prioritization to be determined during the upcoming NYSEG and RG&E rate case process.⁵⁵ Reliability is important for NYSEG and RG&E, due to a history of negative revenue adjustments, as well as a 2021 benchmarking exercise in which it was stated that:

“There is limited consideration of reliability metrics in the capital planning process.”

“Electric operations knows where the challenges are, but without the rate case approved infrastructure investment, we chase a lot of our reliability programs.”⁵⁶

- Electric Operations’ prioritization list included 145 electric capital programs/projects. NorthStar compared these programs/projects with Investment Planning work plans from CY2023 to CY2024 and found that only 40 were classified as “Reliability” by Investment Planning.⁵⁷
- Electric Operations used a ranking methodology that is quite different from that of Investment Planning. Electric Operations’ scoring methodology is shown in **Exhibit VII-16**.
- Electric Operations’ program/project priority rankings, which were selected by SMEs, featured scores of 3.00 (High), 2.00 (Medium), 1.00 (Low) and 0.00 (None) for all sub-criteria listed below.

Exhibit VII-16
Electric Operations Scoring Methodology

Criteria	Criteria Weighting (%)	
Performance	50	
Sub Criteria	Sub Criteria Scale	Sub criteria Weighting (%)
Reliability	None to High	20
Resiliency	None to High	5
Asset Condition	None to High	10
Customer Impact	None to High	10
Ease of Execution	None to High	5
Criteria	Criteria Weighting (%)	
Project/Program	18	
Sub Criteria	Sub Criteria Scale	Sub Criteria Weighting (%)
CWIP Balance	None to High	8
Investment Planning Phase	None to High	5
In-Service Date	None to High	5
Criteria	Criteria Weighting (%)	
Source Documentation/Adjustment Factor	32	
Sub criteria	Sub Criteria Scale	Sub Criteria Weighting (%)
Outline	None to High	5
Source Materials	None to High	10
Financials	None to High	7
Adjustment Factor	None to High	10
Priority Score		0.00 to 3.00

Source: DR 307 Attachment 3.

⁵⁵ DR 307.

⁵⁶ DR 11 Attachment 1.

⁵⁷ DRs 307 Attachment 3 and 673 Attachment 1.

- The highest-priority program/project rating on Electric Operations' list was 2.35 out of 3.00.⁵⁸ NorthStar's review found inconsistencies between Electric Operations' and Investment Planning's prioritization ratings, as shown in **Exhibit VII-17**.

Exhibit VII-17
Comparison of Investment Planning versus Electric Operations
Program/Project Prioritization Ratings

Project ID	Project Name	Investment Planning Priority Rating	Electric Operations Priority Rating
UH-N0000204-NYSEG-ET	Gardenville Substation Rebuild	Significant	2.35
UI-NS000-NYSEG-ED	NYSEG - Storms Electric	Mandated	2.09
PRJ-003467	Aqueduct Reimagined	Mandated	1.22
PRJ-003480	Station 49 4KV to 12KV Upgrade	Significant	1.00
UH-N0000252-NYSEG-ED	Afton 34.5KV Line Addition	Significant	.69
UI-R0072-RGE-ED	Reforming the Energy Vision	Moderate	.15

Source: DRs 307 Attachment 3 and 673 Attachment 1.

- Gas Operations: Gas Operations leverages at least three different prioritization methodologies to focus resources and execute capital programs/projects.
 - Gas Transmission and Distribution System Reinforcements: Avangrid's Gas Operations group uses a separate prioritization methodology for system-improvement projects.
 - Analysis is not performed for projects contained within programs or for projects required by regulatory requirement or mandate.⁵⁹ Scoring methodology assesses a project in terms of safety/security risk, system reliability, type and number of customers affected, operating feasibility, maintenance impact, system efficiency and area load growth factors. Each factor has separate score values and weightings. Score values can range from 0 to 10, and weightings range from 15 to 10.⁶⁰
 - Avangrid has stated that Gas Operations' priority models use a scale from 515 to 1800.⁶¹ This is misleading, as some gas projects have documented minimum scores ranging from 360 to 425.
 - Gas Operations' capital project prioritization scores range from 1050 to 360.⁶² NorthStar's review of System Improvement programs identified a disconnect between Gas Operations' prioritization score and Investment Planning ratings, as noted in **Exhibit VII-18**.

⁵⁸ DR 307 Attachment 3.

⁵⁹ DR 675.

⁶⁰ DR 675 Attachment 4.

⁶¹ DR 1261

⁶² DR 675 Attachments 2 and 3.

Exhibit VII-18
Investment Planning versus Gas Operations
System Improvement Prioritization Ratings

Project ID	Project Name	Investment Planning Priority Rating	Gas Operations Priority Rating
UH-R0005567-RGE-GS	MF60 Southeast Phase 3 (Malone Rd), Install Gas Main, Roch	Significant	425
UH-R0005523-RGE-GS	MF60 Southeast Phase 1 (Mendon Gate - Rte 64), Install Gas Main, Roch	Significant	425
UH-N0005804-NYSEG-GS	Canandaigua Feeder Main	Significant	760
UH-N0005755-NYSEG-GS	W. Genesee St. Main Replacement LPM	Mandated	765
PRJ-000878	Northwest Chambers St. Reinforcement Project LPM	Mandated	550

Source: DRs 675 Attachment 2, 675 Attachment 3, and 673 Attachment 1.

- Leak-Prone Main (LPM) Program: Gas Operations also performs risk ranking supporting prioritization ratings for LPM. For NorthStar’s review of the LPM prioritization process, see **Chapter VI – Gas Operations**.
- Regulator Station Program: Gas System Planning utilizes a Health Index Scoring matrix within an Access Database called “Regulator Operational Program” to assess regulator stations on several factors and conditions. This matrix is supposed to provide an “objective” basis for prioritizing regulator projects.⁶³ Avangrid has stated that:

“Gas System Planning develops regulator station scopes throughout the year and provides them to the Projects group for further development, design and delivery. These projects are added to the regulator modernization program on a continuous, rolling basis, so there is not a year-by-year prioritization list available.”⁶⁴

- The Regulator Operational Program uses the Health Index Scoring Matrix to assess regulator stations, and the matrix provides an objective basis for prioritizing regulator projects, yet no prioritization list exists to focus Avangrid/NYSEG/RG&E resources.

⁶³ DR 675.

⁶⁴ DR 675.

6. The Avangrid Investment Planning group’s program/project prioritized list for NYSEG and RG&E is not executed. Avangrid manages to an annual capital budget and, ultimately, to a corporate earnings target.

- NYSEG’s and RG&E’s planned capital program/project investments are provided in **Exhibit VII-19** by Calendar Year (CY) and Category, as well as by Rating and Category.

Exhibit VII-19
NYSEG and RG&E Prioritized Capital Programs/Projects Investments from CY2022 to CY2024 by Rating and Category

Category/Rating	Mandated	Significant	Moderate	Low	Total
Electric	1,249,474,690	1,250,433,943	321,047,763	1,517,938	2,822,474,334
Common	329,642,246	88,380,277	109,398,979	18,109,555	545,531,057
Gas	387,425,711	61,304,192	121,714	-	448,851,616
Total	\$1,966,542,646	\$1,400,118,412	\$430,568,456	\$19,627,493	\$3,816,857,007

Source: DRs 673 Attachment 1.

- As shown in **Exhibit VII-20** below, the total number of planned capital programs/projects from beginning of each calendar year from 2022 to 2024 was 618.⁶⁵

Exhibit VII-20
Number of Prioritized NYSEG and RG&E Capital Programs/Projects in the Work Plan from 2022 to 2024 by Rating

Capital Programs/Projects Beginning of CY 2022, 2023, and 2024					
Category/Rating	Mandated	Significant	Moderate	Low	Total
Electric	141	126	67	6	340
Common	73	58	69	15	215
Gas	43	19	1	0	63
Total	257	203	137	21	618

Source: DRs 673 Attachment 1

- NorthStar compared the beginning CY capital program/project work plans for NYSEG and RG&E electric, gas and common programs/projects from CY2022, CY2023 and CY2024, with actual costs for programs/projects for calendar year end (CYE) of CYE2022 and CYE2023. Programs/projects are considered “in-flight” for 2024, as shown in **Exhibit VII-21**.
 - As shown in **Exhibit VII-21** below, a total of 618 projects appeared in beginning work plans for NYSEG and RG&E electric, gas and common investments.⁶⁶
 - Almost 30 percent of these projects, or 176, were not included in CYE2022 or CYE2023 – or were identified as “in-flight” or being worked on in 2024.⁶⁷ Of these 176, 168 were categorized as electric or common capital projects.

⁶⁵ DR 673 Attachment 1.

⁶⁶ DR 673 Attachment 1.

⁶⁷ DR 673 Attachment 1 and DR 674 Attachment 1.

- Approximately 65 percent, or 112 projects, with a priority rating of mandated (38) or significant (74) were not listed in CYE2022 or CYE2023 – nor were they listed as “in-flight” for 2024.

Exhibit VII-21

Comparison of the Number NYSEG and RG&E Prioritized Capital Programs/Projects at the Beginning versus End of 2022 to 2024 by Rating

Capital Programs/Projects Planned at the Beginning of each CY 2022 to CY2024					
Category/Rating	Mandated	Significant	Moderate	Low	Total
Electric ⁶⁸	141	126	67	6	340
Common	73	58	69	15	215
Gas	43	19	1	0	63
Total	257	203	137	21	618
Number of Prioritized Capital Projects/Programs in the Work Plan with Budgets but not Worked on from CY2022 to CY2024*					
Category/Rating	Mandated	Significant	Moderate	Low	Total
Electric	18	45	22	4	89
Common	17	25	28	9	79
Gas	3	4	1	0	8
Total	38	74	51	13	176
Number of Remaining Prioritized Capital Programs/Projects in the Work Plan From CY 2022 to CY2024*					
Category/Rating	Mandated	Significant	Moderate	Low	Total
Electric	123	81	45	2	251
Common	56	33	41	6	136
Gas	40	15	0	0	55
Total	219	129	86	8	442

Source: DRs 673 Attachment 1 and 674 Attachment 1.

* As of February 2024.

- Overall value of 176 capital programs/projects originally included in the prioritized work plan, but not advanced during CY2022, CY2023, or as of February 2024, reached over \$470M. This is further illustrated in **Exhibit VII-22** below.

Exhibit VII-22

Value of NYSEG and RG&E Prioritized Programs/Projects Budgeted but Not Worked on from CY2022 to CY2024*

Category/Rank	Mandated	Significant	Moderate	Low	Total
Electric	39,821,971	292,643,602	55,058,657	349,927	387,874,157
Common	17,029,254	21,182,191	28,478,989	5,020,000	71,710,434
Gas	7,943,138	3,432,819	121,714	-	11,497,670
Total	\$64,794,363	\$317,258,611	\$83,659,359	\$5,369,927	\$471,082,261

Source: DRs 673 Attachment 1 and 674 Attachment 1.

*as of February 2024

- Avangrid also added over 720 capital programs/projects during each year from CY2022 to CY2024, as provided in **Exhibit VII-23**. These capital programs/projects were not

⁶⁸ Includes Electric Generation.

included in the original prioritized work plans for CY2022, CY2023 or CY2024. Value of these investments reached approximately \$241M, as shown in **Exhibit VII-24**.⁶⁹

Exhibit VII-23
Number of NYSEG and RG&E added Capital Programs/Projects from CYE 2022 to 2024* by Rank

Category/Rank	Mandated^	Significant^	Moderate	Low	Total
Electric	462	92	15	2	571
Common	28	20	51	2	101
Gas	27	27	2	0	56
Total	517	139	68	4	728

Source: DR 674 Attachment 1.

*as of February 2024.

^362 project classified as “mandated” or “significant” are described as “Customer Projects” meaning customer funded.

Exhibit VII-24
Actual Cost of NYSEG and RG&E Added Capital Programs/Projects from CYE 2022 to 2024*

Category/Rank	Mandated	Significant	Moderate	Low	Total
Electric	(12,881,852)	131,926,542	1,177,481	(187,560)	120,034,613
Common	86,020,831	2,224,753	6,020,967	33,341	94,299,892
Gas	17,031,593	9,303,000	8,425	-	26,343,018
Total	90,170,572	143,454,295	7,206,874	(154,218)	240,677,523

Source: DR 674 Attachment 1.

*as of February 2024.

- Avangrid did not show a material budget variance for NYSEG and RG&E, despite removing 176 projects and adding 720 in 2022 and 2023, as shown in **Exhibit VII-25**.

Exhibit VII-25
Comparison of Capital Program/Project Budget to Actual for 2022 and 2023.

2022			2023		
Budget	Actual	% Difference	Budget	Actual	% Difference
\$1,155,215,227	\$1,081,767,390	-6.4%	\$1,156,473,893	\$1,204,440,344	4.1%

Source: DR 673 Attachment 1 and 674 Attachment 1.

- Avangrid reviews project spend to prioritize corporate earnings.⁷⁰ For more information, see **Chapter IV – Budget and Finance**.

⁶⁹ Over 192 of the 728 projects have a negative or \$0 balance from 2022 to February 2024. Approximately 95 percent, or 182 of the 192 projects, were ranked “Mandatory” or “Significant” with a negative or \$0 balance.

⁷⁰ DR 209 and 306 Attachment 1.

7. Avangrid has not integrated CLCPA criteria into its prioritization methodology.

- Avangrid has stated that it is working on ways to incorporate relevant components of CLCPA into project-prioritization methodology (i.e., projects located in disadvantaged communities (DACs)).⁷¹

8. NYSEG and RG&E interests are not represented during Avangrid capital program/project portfolio-planning or annual prioritization processes.

- Avangrid has stated that due to significant levels of capital investment and the complexity of its business, an approval and governance process to evaluate and monitor investments related to business objectives and regulatory requirements is essential.⁷² Governance committee oversight during portfolio-planning processes is summarized in **Exhibit VII-26**.

Exhibit VII-26
Avangrid Capital Program/Project Governance Committees

Committee Name	Scope	Membership	Meeting Frequency
Strategic Review Group (SRG)	Provides technical approval for an electric investment. Discusses and approves technical and engineering aspects of T&D programs/projects. Transmission projects equal to or greater than \$1M. Distribution projects equal to or greater than \$500k.	Integrated System Planning Transmission Planning Process & Technologies Operations Smart Grids Projects NWA	Monthly
Electric/Gas Strategic Planning and Approval Group (ESP/GSP)	Reviews and approves investments for inclusion in the plan, financial and execution approval and changes to any investments already approved. Reviews and approves/conditionally approves/holds/rejects all investments equal to or greater than \$500k “out of tolerance.”	Regulatory VP by OPCO Business Area VPs in Operations, Projects, Gas Investment Planning Senior Director	Bi-Weekly
Investment Review Group (IRG)	Reviews and approves investments for inclusion in plan. Provides executive visibility, collaboration and input into significant investment plan proposals and changes.	Networks CEO, OPCO Presidents, and Senior Leadership Team	Monthly

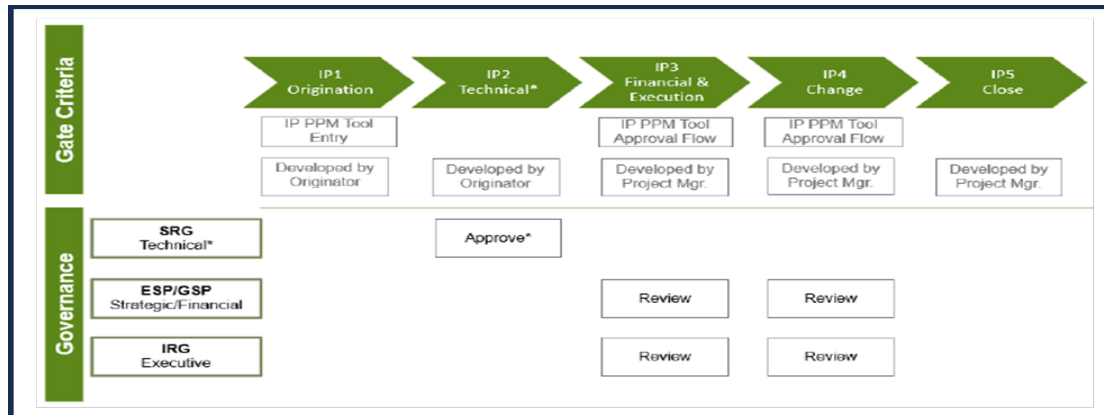
Source: DRs 306 Attachment 1 and 311 Attachment 1.

⁷¹ DR 238.

⁷² DR 306 Attachment 1.

- SRG and ESP/GSP governance committee members are Avangrid employees. IRG committee members are also Avangrid employees except for regulated utility CEOs, who are employees of their respective regulated utilities.
- Governance committee oversight activities during the investment planning process is shown in **Exhibit VII-27**.

Exhibit VII-27
Capital Portfolio Management and Planning Process and Governance Committee Activities



Source: DR 306 Attachment 1.

- IRG does not adjust capital program/project scope or costs.⁷³ NorthStar requested meeting minutes from the IRG; however, Avangrid did not provide these documents.⁷⁴
- Avangrid's Investment Planning group facilitates the project-prioritization process that was implemented in June 2021 for all regulated operating companies.⁷⁵ This process is used to determine final proposed capital program/project portfolio and associated budgets for each operating company. The process is depicted in **Exhibit VII-28**.

⁷³ DR 1025.

⁷⁴ DR 1026.

⁷⁵ DR 306 and 306 Attachment 1.

Exhibit VII-28

Investment Planning Capital Program/Project Prioritization and Budget Process Timeline



Source: DR 306 Attachment 1. Dates are approximate.

- Avangrid documentation states:

“The Capital Project Prioritization is performed yearly at the beginning of the budget season after a 10-year planning kickoff is conducted across [sic]. Capital project prioritization is the process of rating the strategic value of each project, program, and portfolio, in order to maximize the overall strategic value of the company’s capital investments.

Strategic value, as defined here, is the degree to which a project, program or portfolio is in alignment with our corporate priorities and strategy.”⁷⁶

- During the capital programs/projects portfolio-planning process, various Avangrid business areas present programs/projects to governance committees for review and approval, as shown above in **Exhibit VII-28**.
- Each Avangrid business area selects investment categories and prioritization ratings on its respective projects.⁷⁷
- Operating Company Presidents review final capital program/project portfolio and provide updates during the “President’s Review” stage.
- NorthStar requested updates to the capital plan from the President’s Review. In response, Avangrid stated:

“The President’s Review is a review of the final proposed portfolio after the Vice Presidents review and adjustments have been made. While the President would reserve the right and ability to make adjustments, there have been no adjustments made from

⁷⁶ DR 306 Attachment 1.

⁷⁷ DR 306.

the President’s review in the period of 2021 through 2023 as the VP’s [sic] of the various business areas have already come to consensus.”⁷⁸

9. Avangrid’s record management for completed NYSEG and RG&E capital projects is deficient. Reviewed documentation for completed projects was often incomplete or not available. Avangrid could not demonstrate a functioning and robust project-management process.

- Avangrid has extensive project management procedure documentation to guide planning and execution of capital projects. However, almost half of procedures have not been revised for more than five years, including some that date back over a decade.⁷⁹ A process to update procedures has been slow, with no schedule of completion or sense of urgency noted at any ISO 9001 and ISO 14001 management review meetings.⁸⁰
- Avangrid’s SOP.E.CD.09.10 Document Management for Engineering and Capital Delivery (Electric and Gas) defines a record as a document stating results achieved or providing evidence of activities performed.⁸¹ Avangrid’s record-retention schedule shows the retention period for project documentation as “P” – permanent.⁸²
- Based on review of project-management procedures, NorthStar requested a selection of capital project documentation, such as Work Breakdown Structure, detailed cost estimates, project schedules, earned-value reporting, project closure reports (PCR)/forms, etc., for a selection of completed electric and gas projects.⁸³ Avangrid was not able to produce most of the documents requested, as seen in **Exhibit VII-29**.

Exhibit VII-29
Requested Project Management Documentation for Select Completed Capital Projects

Project	Commodity	WBS	Cost Estimate				Project Schedule	Project Closure Documents	Earned Value Report
			PMO20	PMO50	PMO70*	PMO300			
UH-R0000070	Electric	NA	NA	Yes ⁸⁴	NA	NA	NA	NA	NA
UH-N0000040	Electric	NA	NA	Yes	NA	NA	NA	NA	NA
UH-N0005626	Electric	NA ⁸⁵	NA	Yes	NA	NA	Yes	Yes^	NA
UH-N0000210	Electric	Yes	Yes ⁸²	Yes	NA	NA	NA	Yes^	NA
UH-R0005313	Gas	NA	NA	NA	NA	NA	NA	NA	NA
UH-N0005830	Gas	Yes	NA	NA	NA	NA	NA	NA	NA

⁷⁸ DR 790.

⁷⁹ DRs 239 Attachments 1-12 and 542 Attachments 1-2.

⁸⁰ DRs 472 Attachment Qi and Attachment Qi-1.

⁸¹ DR 239 Attachment 1.

⁸² DR 885 Attachment 1.

⁸³ DRs 239 Attachments 1 to 12 and 470 to 477.

⁸⁴ All Project Charter and PMP estimates are at a summary level.

⁸⁵ Listed in DR as responded, but not provided by Avangrid.

UH-N0005021	Gas	NA	NA	NA	NA	NA	NA	NA	NA
UH-N0006160	Gas	Yes	NA	NA	NA	NA	NA	NA	NA

Source: DRs 470 to 477. NA – Not available

* Optional

^Summary PCRs - missing elements noted in SOP.P.E.04.06.

- A sample of Avangrid’s responses to NorthStar requests for project documentation includes the following:
 - Detailed Project Cost Estimates: “NA [Not Available] started prior to requirement.”⁸⁶ “The Companies do not maintain any additional detailed cost estimates.”⁸⁷
 - Project Performance Reports: “NA [Not Available] no PPR retention prior to 2019.”⁸⁸
 - Performance Measurement Baseline: “NA [Not Available] completed prior to Primavera P6 implementation.”⁸⁹
 - Project Schedule reports (schedule trend analysis, critical path report, milestone status, project schedules, etc.): “NA [Not Available] legacy MS project schedules not retained after transition to Primavera P6.”⁹⁰
 - Cost Management documentation (e.g., Cost-trend and forecast analysis, cost-control KPIs, contingency status reports, etc.): “NA [Not Available] since project was completed prior to analytics and dashboarding of KPIs were available.”⁹¹ “NA [Not Available] since project is complete and there is no contingency remaining.”⁹² “NA [Not Available] no variance comments retained prior to 2019 for Electric.”⁹³
- NorthStar found incomplete information in Project Charters and Project Management Plans. Sections such as Alternatives Analysis, Risk Management Plan and Register, Planning Strategy and Stakeholder Matrices lacked information or were not completed at all.⁹⁴
- Project Charters and Project Management Plans do not include relevant benefits analysis. Instead, they include aspirational statements of benefits. Examples include the following:

“Gas System Planning has identified an opportunity to rebuild the three distribution systems for a higher MAOP (60psi), rebuild both the Chambers and Hornby Road

⁸⁶ DRs 474, 475, 476, and 477.

⁸⁷ DRs 903 Supplement, 904 Supplement, 905 Supplement, and 906 Supplement.

⁸⁸ DR 471.

⁸⁹ DR 470, 471, 473, 474

⁹⁰ DRs 470, 471, 473, 474, 476

⁹¹ DRs 470, 471, 472, 473

⁹² DRs 470, 471, 472, 473, and 476.

⁹³ DR 471.

⁹⁴ For examples, see DRs 471 Attachments K and Attachment Niii, 472 Suppl Attachment K-1, 473 Attachment J and Attachment Suppl Attachment K-1, 478 Attachment J, 479 Attachment J and Attachment K, 480 Attachment J, 481 Attachment J, 482 Attachment J, 483 Attachment K, 484 Attachment J.

regulator stations, and connect the systems together would provide many benefits.”⁹⁵ No specific list of the “many” benefits were provided, no analysis to quantify these “many” benefits, and no documentation if these “many” benefits actually materialized.

“Improved reliability for approximately 5000 customers under normal line configuration but the line is also used to support additional customers under contingency configurations.”⁹⁶ Improved reliability for 5,000 customers is not quantified .

- Furthermore, a 2021 benchmark study noted the following from an interview included in the study.

“There is no quantification in SAIDI/SAIFI benefits behind each major capital project. I am not sure the new rate case will resolve our network reliability issues.”⁹⁷

- Quality reports to management for each completed electric and gas capital project were not provided to NorthStar. Contractor performance evaluations (CPE) are specified in SOP.P.04.14. A CPE is required to document Safety, Health, Environmental, and Quality performance for contractors working on Avangrid projects. Trigger points for a CPE are contract/service completion, project completion or significant events. No CPE reports were provided to NorthStar.
- Avangrid did provide a Non-Compliance Reports (NCR)/Supplier Corrective Action Request (SCAR) report by vendor without a project identifier.⁹⁸ According to SOP.P.E.9.10A “EDM Filing Structure”, each electric project should have NCRs and SCARs within the project folder.⁹⁹ When questioned about gas projects, Avangrid referred to the NCR/SCAR report or responded: “NA [Not Available] started prior to requirement.”¹⁰⁰
- Earned-value reports – Avangrid follows an earned-value procedure for gas and electric businesses, SOP.E-CD.04.11 “Planning and Performance Measurement System”.¹⁰¹ NorthStar requested earned-value reports for completed capital projects. Avangrid did not provide earned value reports for these projects, despite project documentation stating that the earned-value method (EVM) would be used to create Schedule and Cost Performance Index reports.¹⁰² Examples include the following:

UH-R0000070 - "The earned value method is going to be used to compare the Planned Cost vs. the Actual Cost of the work developed; with that, Project Team is going to be

⁹⁵ DR 478 Attachment J

⁹⁶ DR 472 Attachment J.

⁹⁷ DR 11 Attachment 1.

⁹⁸ DR 472 Attachment Q.

⁹⁹ DR 239 Attachment 1.

¹⁰⁰ DR 474, 475, 476, and 477.

¹⁰¹ DR 239 Attachment 3.

¹⁰² DRs 470 to 477.

able to create the Schedule performance index (SPI) and the Cost Performance Index (CPI) that measure the performance of the project as a function of time and cost.”¹⁰³

UH-N0000040 - “The earned value method is going to be used to compare the Planned Cost versus the Actual Cost of the work developed; with that, Stephentown Project Team is going to be able to create the Schedule performance index (SPI) and the Cost Performance Index (CPI) that measure the performance of the project as a function of time and cost.”¹⁰⁴

- Avangrid reports project performance as “percent complete”.¹⁰⁵ Avangrid stated that it calculates percent complete in the following manner:

“To calculate % Complete (Column O) for DR 243 Attachment 1 CONFIDENTIAL, the project actual cost to date (through September 2023) was divided by the end of project (EOP) total cost projection.”¹⁰⁶

- Tracking program and project dollars already spent compared to the remaining budget does not provide meaningful performance, cost management and does not demonstrate earned value for expenditures.
 - Avangrid began an initiative with Primavera P6 to include EVM reporting in recent select capital projects.¹⁰⁷ However, without an industry-recognized WBS, the value of the EVM reporting initiative is unclear.¹⁰⁸ For more information, see Conclusion 1 of this chapter.
- During a recent rate case for a NYSEG and RG&E affiliate in a neighboring state, Avangrid could not provide sufficient documentation to support plant additions.

“Specifically, the Company offered limited supporting documentation that would aid in a prudency analysis, such as documents that demonstrate the project needs, potential project alternatives, initial or detailed project engineering estimates, project scope changes (cost or timing), and internal approvals related to the above materials. Although the Company contends that it has such information within its control and uses it (at least monthly) as part of its own capital investment planning and execution process, it did not submit such information in this proceeding. Interrog. Resp. OCC-193; Interrog. Resp. RSR-26, Att. 1, pp. 6-10; Hr’g Tr., Feb. 22, 2023, 734:16-20. Rather, the Company submitted only rudimentary planning documents that described its own internal capital planning process instead of providing a comprehensive breakdown of plant additions that would enable the Authority to scrutinize each project

¹⁰³ DR 470 Attachment K.

¹⁰⁴ DR 471 Attachment K.

¹⁰⁵ DR 243 Attachment 1.

¹⁰⁶ DR 485

¹⁰⁷ DRs 478 Attachment Piii 5, 479 Attachment Piii 5, 480 Attachment Piii 5, 482 Attachment Piii 5, and 484 Attachment Piii 5.

¹⁰⁸ See Conclusion 5 below.

(or, at least, a representative sample) and make an appropriate prudence determination.”¹⁰⁹

- Avangrid’s Internal Audit SOP states:

“Internal organization audits shall be conducted annually.”¹¹⁰

- Avangrid internal audit group has not audited the project management function, processes or record-management functions generally or specifically for capital projects during the audit period.¹¹¹ NorthStar did not review ISO certification requirements.

10. Avangrid does not have a method to track benefits achieved for all NYSEG and RG&E capital programs/projects.

- Avangrid has stated that it does not have a process to track benefits following the completion of an electric project.¹¹²
- In addition, Avangrid has stated that for gas projects there are several methods for measuring benefits. Outside of greenhouse-gas-emission filing that would demonstrate some amount of improvement due to the LPM program, other examples suggest what Avangrid *could* do, rather than what it *actually does* to track benefit realization for certain gas projects.

“If a project is being undertaken due to pressure issues, the benefit realization can be identified by the comparison of system pressures before and after the implementation of the project. Increased system pressure provides greater customer reliability against system pressure fluctuation.”

“If the project is being executed to extend a main, it is in response to customer demand for gas service. We can review whether the original customer or customers who requested the service actually connected and/or if additional customers connected.”¹¹³

11. Avangrid does not have formal, documented processes for managing NYSEG and RG&E electric and gas interference/public improvement work – there is no basis to control, manage or improve coordination of these projects.

- Interference refers to the presence of utility facilities within public right-of-way or on public structures such as bridges, which obstruct or stand in the way of water main, sewer or roadway reconstruction work.

¹⁰⁹ Decision in the Application of the United Illuminating Company to Amend Its Rate Schedule, Docket No. 22-08-08, August 25, 2023, pg. 14.

¹¹⁰ DR 239 Attachment 1, Internal Audit SOP.P.09.03.

¹¹¹ DRs 1090, 1102, and 1203.

¹¹² DR 917.

¹¹³ DR 917.

- In New York, Avangrid’s primary stakeholders for interference/public improvement projects are Monroe County, New York State Department of Transportation (NYSDOT) and the City of Rochester.¹¹⁴
- Gas Operations and Electric Operations lack formal procedure documentation for managing interference/public improvement projects.¹¹⁵
- NorthStar requested a list of all complaints received from municipalities or agencies related to coordination of interference and public improvement projects. Avangrid responded that it has not received any formal complaints during the audit period.¹¹⁶ However, Avangrid does not proactively perform post-project surveys with municipalities or agencies to identify process improvements or other issues in planning, coordination or execution of interference and public improvement work.¹¹⁷
- NorthStar requested information on process improvements associated with public improvement and interference projects, as well as internal performance measures. Avangrid’s process improvements focused on meetings with stakeholders. Specifically, improvements focused on increasing the number of meetings – for example, moving from annual to biennial frequency – and addressing structure and content of meetings (i.e., subject area, length of meeting time, and resources involved, etc.) for interference projects. Avangrid did not provide any performance measures related to interference/public improvement projects.¹¹⁸
- Interference and public improvement project work is reactive. Avangrid does not initiate planning for upcoming municipal interference projects; rather, Avangrid is notified of municipal projects through various means, including letters from municipalities, customer service notifications, phone calls directly to engineers, email and standing meetings with larger municipalities and agencies.¹¹⁹
 - For Gas Operations, internal communication between Gas System Planning and Gas Design and Delivery occurs upon notification of municipal projects. Plans from municipalities or their consultants are received and circulated between the two Gas groups.¹²⁰
 - For Electric Operations, Avangrid has stated that it manages all requests through a new service application process. Any request for service comes through the Call Center. The request then follows the process outlined in the "New Service Application Process." Avangrid’s new service application documentation does not address interference projects.¹²¹

¹¹⁴ DR 1088.

¹¹⁵ DR 1088 and 1088 Attachment 1.

¹¹⁶ DR 1094.

¹¹⁷ DR 1092.

¹¹⁸ DR 1089.

¹¹⁹ DR 1088.

¹²⁰ DR 1088.

¹²¹ DR 1088 Attachment 1.

- NYSEG and RG&E experienced over 270 incidents of infrastructure damage from municipal workers or municipal contractors working on public improvement projects from 2017 to 2023. Avangrid collected approximately \$210K on 92 incidents over the same time period.¹²²
- Avangrid does not receive long-term capital project plans from municipalities or government agencies.¹²³

12. Avangrid does not consistently follow its own procedures for project outreach for NYSEG and RG&E capital program/project construction.

- In an undated document titled “Outreach for Capital Construction Projects”, Avangrid stated that its goal for capital construction project outreach efforts (including public improvement and interference projects) is to establish, nurture and maintain relationships with community stakeholders by providing ongoing, timely and transparent information throughout every phase of a project.¹²⁴
- Avangrid’s project outreach efforts work to ensure that every project is designed and engineered to mitigate potential disruption or inconvenience to communities as Avangrid works to improve network resiliency and reliability.
- Avangrid’s Project Outreach document states that:

“When a new project is initiated, the Project Outreach Team and project leaders collaborate and coordinate efforts to create a custom outreach plan designed to minimize impacts to our communities while reducing risk to the project’s scope, schedule, and budget. The Project Outreach team identifies any potential obstacles or challenges that might impact our communities, regardless of the project size or scope.”¹²⁵
- NorthStar requested project outreach documentation for completed select gas and electric capital projects that required Avangrid to coordinate with municipalities (**Exhibit VII-30**). Out of 10 projects NorthStar reviewed, the Avangrid provided services to only one (UH-R0005473).

**Exhibit VII-30
Capital Projects Selected for Project Outreach Review**

Project ID	OPCO	Commodity	Actual Cost	Project Start Date	Project Outreach Service Provided?
UH-R0005313	RG&E	Gas	\$1.4M	June 2018	No
UH-N0005830	NYSEG	Gas	\$1.6M	August 2020	No

¹²² DR 1095 Attachments 1 and 2.

¹²³ DR 1267.

¹²⁴ DR 734 Attachment 1.

¹²⁵ DR 734 Attachment 1.

UH-N0005021	NYSEG	Gas	\$3.9M	February 2017	No
UH-N0006160	NYSEG	Gas	\$2.1M	April 2022	No
UH-N0000210	NYSEG	Electric	\$36.9M	June 2016	No
UH-R0000681	RG&E	Gas	\$40.6M	July 2017	No
UH-N0000546	NYSEG	Gas	\$39.3M	September 2016	No
UH-R0005473	RG&E	Electric	\$39.2M	May 2019	Yes
UH-R0000126	RG&E	Electric	\$15.0M	September 2020	No
UH-N0005626	NYSEG	Electric	\$7.7M	August 2018	No

Source: DRs 242 Attachment 1, 735 Attachment 1, and 1084.

- Project outreach documents chosen for review came from a Project Outreach procedures document and example documentation supplied by Avangrid (e.g., door hangers).¹²⁶ For the single project where outreach services were provided (UH-R0005473), Avangrid states that many requested project outreach documents either were not developed or not yet implemented at the time the project was started. However, the procedure document Avangrid supplied was undated. Avangrid did not provide evidence of any outreach documents or services that were associated with the project.

13. Avangrid Project Outreach group does not budget or charge projects when outreach services are provided to NYSEG and RG&E capital projects.

- NorthStar requested project outreach budget and actual costs for services and explanation of variances. Avangrid responded, for the one project in our selection where outreach services were provided (UH-R0005473), that:

“Project Outreach Budget: No specific line item for Project Outreach in the budget. Actuals: NA Explanation for variances: NA”¹²⁷

14. Avangrid’s infrastructure and IT capital project information-reporting to DPS on behalf of NYSEG and RG&E is appropriate and shows sufficient transparency.

- NorthStar obtained a listing of actual expenditures for completed infrastructure and IT capital projects¹²⁸ and the Capital Investment Plan Annual Variance Reports for NYSEG and RG&E.¹²⁹ The team compared the two documents to evaluate whether there is consistency between what the company internally reports (actual expenditures for completed projects) and what Avangrid reports externally to DPS (Variance Reports) on behalf of NYSEG and RG&E. NorthStar chose 2022 as a sample year and filtered for any projects with expenditures during that year. A total of 12 projects which were inconsistent between the two reports from a total of approximately 900 projects listed on both. Small discrepancies are to be expected given timing differences for when reports are compiled.

¹²⁶ DR 734 Attachments 1 and Supplemental Attachments 14, 15, 16, 17, and 18.

¹²⁷ DR 1084.

¹²⁸ DR 674 Attachment 1. Two AMI projects were included in the Actual Expenditures for Completed Projects file, but not in the Annual Variance Report file (UH-N0000596-NYSEG-CM & UH-R0000636-RGE-CM).

¹²⁹ DR 1013.

- Projects listed in each document were largely comparable. As such, NorthStar did not find evidence of a lack of transparency to DPS in Avangrid's reporting of capital projects for NYSEG and RG&E.
- The aggregate dollar values of expenditures between the two files were also comparable. NorthStar did not reconcile each individual project; rather, the North Star team evaluated whether aggregate spending was comparable between the two reports.

D. RECOMMENDATIONS

1. Develop industry-accepted Work Breakdown Structures (WBS) for capital programs/projects and use WBSs in initial phases of project justification and conceptual estimating. Continue refinement as a project progresses.
 - 1.1. Develop well-defined work packages that can be used to track and measure project performance based on earned value.
 - 1.2. Plan work in logical work groupings or packages and subdivide into smaller work groupings.
 - 1.3. Ensure that activities required to perform work in each group are identified and defined, and that dependent relationships are established.
 - 1.4. Formalize use of WBS elements by all project participants in their respective areas of responsibility and as an identification tool for project-management performance measurement.
 - 1.5. Use new WBSs in procurement/contracting activities and specify WBS in contractor framework agreements.
 - 1.6. Use new WBSs for project costing and as a means to assess impact of programmatic changes in funding levels on work content, schedules and contractual support.
 - 1.7. Prepare cost estimates for each WBS element to assist budgeting and project validation.
 - 1.8. Integrate new WBSs with Avangrid's accounting systems, project cost-management systems and schedule-management system (Primavera P6).
 - 1.9. Integrate master work plans and detailed contractor schedules/activities into new WBS to permit integration of schedule information and to facilitate review of status reports and change proposals.
 - 1.10. Refine detailed project estimates initially prepared by WBS element and follow manner in which project work was planned, scheduled, estimated, funded and executed.

- 1.11. Keep all final, detailed program/project WBSs in project folder for regulatory and audit purposes.
2. Address deficiencies in project estimating by making process improvements.
 - 2.1. Formally assess process used to develop and update capital program/project cost estimates and develop detailed study. Submit detailed study to DPS.
 - 2.2. Formally document in detail development of all electric and gas program/project cost estimates at each level of estimate according to Avangrid's SOP.E-CD.04.04: Cost Management Standard Operating Procedure and at various stages of project life cycle.
 - 2.3. Formally document in detail project cost-estimate reviews at each level of estimate.
 - 2.4. Continuously verify accuracy of estimates versus actual project costs and maintain record of updates to cost-estimating tools.
 - 2.5. Keep all detailed cost estimates in program/project folder for regulatory and audit purposes.
3. Standardize project-prioritization process across all Avangrid departments that provide services to NYSEG and RG&E. Record and retain meeting minutes for all governance committees involved in project-prioritization process.
4. Integrate CLCPA requirements into electric and gas capital project-prioritization process/algorithm. Review requirements and prioritization process/algorithm with DPS.
5. Identify and document all tangible benefits for each capital program/project as part of Project Charters and Project Management Plans. Develop and implement method to track and report project benefits for life of program/project. Provide benefit realization reports to DPS for each completed program/project.
6. Conduct an independent, third-party audit with DPS oversight of Avangrid's record-management practices that includes electric and gas program/project records.
7. Develop project plan and schedule and assign resources to update all Avangrid QMS procedure documentation. Include incentive compensation metrics for VPs of Electric and Gas Operations, respectively, to complete documentation updates. Review plan, schedule and incentive compensation metrics with DPS.
8. Engage an independent monitor to oversee electric and gas program/project planning, management and delivery. Key responsibility of the independent monitor is to review and report to DPS Staff on effectiveness of capital program/project planning, capital budgeting processes and program/project management, plus program/project cost effectiveness, efficiency, appropriate cost assignment, benefit realization and tracking, and other information. Include DPS in RFP development, vendor proposal review and selection, and contracting. Shareholders should be responsible for the cost of the independent monitor.

9. Improve coordination and management of public improvement and interference projects.
 - 9.1. Develop and implement procedure documentation for coordination of electric and gas public improvement and interference projects with municipalities and agencies. Integrate with Project Outreach group's procedures.
 - 9.2. Actively solicit short- and long-term capital plans from key municipal and agency stakeholders.
 - 9.3. Work with DPS to develop annual post-project survey for public improvement and interference projects to be delivered to municipalities and agencies upon project completion.
 - 9.3.1. Incorporate results into continuing process-improvement efforts.
 - 9.3.2. Provide annual report of survey results and process-improvement initiatives/progress to DPS.
 - 9.3.3. Include completed survey metric as part of incentive compensation for VPs delivering services to municipalities and agencies. Review survey completion metric to be included in incentive compensation plan with DPS.
10. Include all project outreach costs in capital program/project cost estimates. Directly charge all actual project outreach costs to capital programs/projects so that booked capital costs reflect actual project costs.
11. Initiate an independent review with DPS oversight to determine if Avangrid is following its own project management policies and procedures on select, completed gas projects over \$500K and select, completed electric projects over \$1M up to CY2023 to quantify the cost of unreasonable management.

VIII. WORK MANAGEMENT

This chapter addresses Avangrid's work management on behalf of NYSEG and RG&E.

A. BACKGROUND

An effective work management program provides a utility with a benefit that can be directly tied to improved performance and significant cost savings for the following reasons:

- Work planning improves efficiency and effectiveness in the use of human resources.
- The utility is better able to align its workload with available resources and determine optimum work force for each area or function, often translating to reduced labor costs.
- Work management supports the budgeting process by identifying and quantifying workload requirements for planned activities. Work management also assists in determining a time frame for activities consistent with the utility's ability to finance the work.
- Employee utilization is improved because managers have the tools to monitor and distribute resources depending on workload.
- Efficiency is improved by completing more work or higher quality work with the same number of people.
- Effectiveness is improved by focusing available work hours on higher priority tasks and delaying or eliminating less important or unnecessary work.
- Work management provides the tools needed to benchmark performance against other utilities.
- Data from consistent reporting gives management necessary information for labor negotiations that can define better work rules.

Despite these benefits, many utilities still do not have in place a comprehensive and effective work management program.

The Comprehensive Management and Operations Audit Of New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation, Case No. 16-M-0610, was completed and submitted in November 2018. A redacted report was filed in February of 2019.¹ Highlights of Avangrid's work management at that time included the following:

- A field workforce mobility application was in development and expected to go live in the first quarter of 2018. This would automate the dispatch of work orders, allowing

¹ [NYSDPS-DMM: Matter Master](#), Case 16-M-0610, Redacted report filed 2/7/2019.

crews to receive daily work assignments through mobile devices. At the time, printed work packets were created and provided to crews each morning (Chapter 29 – Work Management).

- In 2015, NYSEG and RG&E established an Integrated Planning and Scheduling group within the Electric T&D organization. This group was charged with overseeing planning and scheduling of all maintenance and construction work for NYSEG and RG&E field workers. (Chapter 29 – Work Management).

Avangrid employs numerous contractors on or near its electric and natural gas facilities. These contractors work either directly for Avangrid (NYSEG and RG&E) or for independent parties. Risk management associated with third-party contractors making inadvertent contact with utility infrastructure is addressed through several programs, as outlined below:

- Call Before You Dig/811 Program
- Public Awareness Programs
- Underground Locating Program
- Damage Prevention Vehicle Program²

Avangrid has developed a Contractor Safety Guide for all contractors. The Guide provides safety requirements that contractors and subcontractors must abide by to perform work at Avangrid facilities and worksites.³

Work management recommendations from the most recent management audit report included the following:

- Recommendation 29.1: Avangrid should configure the process of prioritizing and categorizing work in the SAP system to provide numerical values tied to the activity types and categorizations. Numerical values would provide an additional level of rigor to ensure that the highest priority jobs and activity with the highest severity level are always elevated in the backlog. We recommend that guidelines for completing the work within a set time frame be established by priority level and category. This will assist in the proper forecasting of resource requirements to accomplish work in the backlog as estimated work hours fluctuate based on demand.

Avangrid modified the implementation plan for this recommendation:

- The initial implementation scope and plan filed July 19, 2019, did not reflect the actual audit recommendation.
- Implementation scope and plan as of January 29, 2021, stated: “Currently Gas Operations is in the process of moving all work orders (paper forms) to an electronic format. This is done by utilizing a third-party Cloud Application System for some of the work and SAP for emergency response type work orders.”⁴
- The actual completion date for the project was recorded as June 2020.

² DR 176

³ DR 252 Attachment 1

⁴ [NYS DPS-DMM: Matter Master](#), NY Management Audit Implementation Plan Update January 29- 2021.

- The final deliverable included a plan to outline a schedule for all forms being converted to an electronic format, along with scheduled meetings to train DPS staff.
- Note that neither the implementation of recommendation 29.1 nor the final deliverable is relevant to the above recommendation.
- Recommendation 29.2: “Avangrid should automate and integrate into the SAP WMS all work orders currently residing on paper-based jobs/inspection documents or in Excel spreadsheets. This will ensure that all work can be planned and aggregated in a comprehensive backlog.”
 - Please see the implementation update above.
- The audit report did not contain a recommendation numbered 29.3.
- Recommendation 29.4: “Gas Operations should establish a similar Monthly Planning and Scheduling Meetings with a review of KPIs as is currently performed by Electric Operations. This includes the development of Gas Operations metrics related to:
 - A list of all work orders (> \$20,000) (or a figure more pertinent to Gas)
 - Identify work hours in various stages
 - Schedule adherence/productivity (three-month performance)
 - % schedule adherence
 - Drivers for non-adherence; hours worked outside the schedule
 - % schedule full
 - Non-productive hours
 - Discuss status of large customer projects”
- Implementation scope and plan as of January 29, 2021, stated: “Create documentation of process including formulation and calculation of metrics/KPI’s and Implement new process, monitor for effectiveness, adjust as necessary.”
- The actual completion date for the project was recorded as December 2020.

B. AUDIT SCOPE ITEMS

- Assess the impact of changes to work management processes since the prior management audit.
- Evaluate contractor oversight and other measures taken to prevent third-party damage to utility infrastructure (including facilities owned by other utilities) and assess the accuracy of damage prevention performance data and the effectiveness of recent improvement efforts.
- Evaluate coordination with municipalities regarding public improvement and interference projects. (Moved to Project Management)

C. FINDINGS AND CONCLUSIONS

1. Two unregulated Avangrid service companies perform and manage the operational activities of NYSEG and RG&E.

- NYSEG and RG&E do not perform traditional utility functions. An extraordinary portfolio of services is provided by the two unregulated Avangrid, Inc. service companies: Avangrid Management Company, LLC (AMC) and Avangrid's subsidiary company – Avangrid Service Company (ASC).⁵
- AMC provides “corporate” services including:
 - Physical and Cyber Security
 - Legal Services
 - People and Organization (HR)
 - Information Technology
 - General Services
 - Control Services
 - Risk Management
 - Corporate Communications
 - Internal and External Audit
 - Purchasing
 - Office Services
 - SAP Platform
 - Insurance Services
 - Fleet Management
 - General Administration
- ASC provides “technical” services including:
 - Gas Operations and Engineering
 - Electric Planning and Operations
 - Asset Management
 - Finance and Operations Performance
 - Emergency Preparation/Management
 - Projects (Project Management)
 - Process and Technology
 - Digital Planning
 - Regulatory and Investment Planning
 - Customer Service
 - CLCPA and Smart Grid Innovation

2. It is not possible to determine what improvements, if any, resulted from the prior audit of Avangrid's work management.⁶

- Planned implementation activities submitted to the DPS following the prior audit do not correlate to the actual recommendations.
- Prioritizing and categorizing work in the SAP system to establish numerical values tied to the activity types and categorizations – recommendation 29.1 – was not addressed in the implementation plan.
- The implementation plan deliverable for recommendation 29.2 – a plan to outline the schedule for all forms being converted to an electronic format as well as scheduled meetings to train DPS staff – does not address automation and integration of SAP WMS work orders.

⁵ DR 26, page 19

⁶ [NYSDPS-DMM: Matter Master](#), NY Management Audit Implementation Plan Update January 29- 2021.

- Formulation and calculation of metrics/KPIs and implementation of a new process – recommendation 29.4 – cannot be confirmed based on responses to audit inquiries and does not include a Gas Operations Monthly Planning and Scheduling Meeting to review KPIs.

3. The impact of changes to work management processes since the prior management audit have been negligible according to Avangrid’s response to audit inquiries.

- Avangrid has stated:

“The work management process by which work is generated and Gas Operations receives it in the field has not changed substantively since the last audit. However, a new work management process for contractor work associated with Inside Service Line Inspections (ISLI) has been implemented.”⁷

“The work management process by which work is generated and Electric Operations receives it in the field has not changed substantively since the last audit. In a future work management process for network operations, the relationship between material and outsourced services is being standardized to improve resource management and traceability of services performed. This process is in the progressive implementation phase, where outsourced workers will use a portal connected to SAP to record the services performed to be evaluated by Avangrid.”⁸

4. Avangrid does not use accepted industrial definitions of work management or report work performed directly for NYSEG and RG&E. Responses to NorthStar work management inquiries in this area consisted of oversimplifications.

- Avangrid’s description of workforce productivity, measurement and reporting to NYSEG and RG&E does not provide a clear basis for how work is managed. More importantly, Avangrid does not recognize the regulated utilities as bona fide clients for products and services provided.
- NorthStar requested an explanation and reports of how workforce productivity is defined, measured and reported to NYSEG and RG&E for the following services:
 - Fleet Management
 - Purchasing
 - Electric Operations
 - Gas Operations
 - Quality
 - General Services

⁷ DR 247

⁸ DR 247

“There is no standardized reporting for workforce productivity for the services provided from Avangrid to affiliated operating companies.”⁹

- Work definition, measurement and reporting was described as follows:
 - Fleet Management - Fleet productivity is defined as by the number of hours applied to a work order versus number of hours applied to the garage Analytical Order. Fleet productivity is measured as part of a fleet staffing analysis and a downtime report. Workforce productivity is not reported to RG&E or NYSEG.
 - Purchasing - annual performance reports are provided for combined Avangrid purchasing KPI results and backup data.
 - Electric Operations – Avangrid electric operations employees are allocated to the operating companies they work for, not to Avangrid, therefore there are no existing reports related to workplace productivity for services provided.
 - Gas Operations – Avangrid workforce productivity is defined on a day to day or event-driven basis. Time is allocated appropriately to the respective OPCO. Completion of work is not formally reported to NYSEG or RG&E.
 - Quality – Quality is a service provided at a global level and is responsible for the overall management of quality processes including but not limited to ISO-9001.¹⁰ There is currently no report for workforce productivity.
 - General Services - For all internal employees of General Services Management functions, workforce productivity is defined, measured, and reported through the annual Performance Review process managed by Human Resources. For all external employees (contractors) of General Services Management functions, workforce productivity is defined, measured, and reported through periodic Performance Review processes managed by the vendors, with feedback provided by internal managers to vendor managers.
- NorthStar requested an explanation and reported examples of how work is assigned, scheduled, completed, and reported for the following services:
 - Fleet Management
 - Purchasing
 - Electric Operations
 - Gas Operations
 - Quality
 - General Services

⁹ DR 896

¹⁰ These were Avangrid statements. ISO 9001 is a globally recognized standard for quality management systems (QMS). It provides a framework for organizations to establish, implement, and maintain a QMS that helps them meet customer expectations and improve their performance. DR responses did not elaborate on, or verify its utilization.

“There is no standardized reporting for work assignments, scheduling, and completion for the services provided from Avangrid to affiliated operating companies.”¹¹

- Work assignment, scheduling, completion, and reporting was described as follows:
 - Fleet Management - Work is assigned by Fleet Supervisor daily to each mechanic. At RG&E, work is scheduled by a monthly calendar sent to Operations, and at NYSEG work is scheduled with Operations on a weekly basis by a Fleet Supervisor working with the Operations Management team. Work is deemed completed when a mechanic finishes the vehicle required maintenance and a test drive is completed. Once completed, work is logged, and the driver of the vehicle is notified.
 - Purchasing - Work is assigned based on procurement categories and the value of the award. Purchasing procedures detail the responsibilities of the requesting business area and the Purchasing organization.
 - Electric Operations - Avangrid employees are requested to provide support to the electric operations team during a storm or emergency event. All Avangrid employees have a storm role and provide support when requested. The storm or emergency event is considered complete/performed when customers’ power is restored.
 - Gas Operations – Avangrid workforce productivity is defined on a day to day or event-driven basis. Time is allocated to the respective regulated utility. Completed work is not formally reported to NYSEG or RG&E.
 - Quality - Quality is a service provided at a global level and is responsible for the overall management of quality processes including but not limited to ISO-9001. There is currently no report for work assignments, scheduling, or completion.
 - General Services - For all General Services Management functions, work is assigned and performed, based on the scope of responsibilities, business areas, and operating companies defined for each job function or program. Work is dispersed accordingly and scheduled and completed based on set expectations of deadlines set by stakeholders. Within the Property Management function of General Services, if there is a facility related issue, the Facilities Management System (FACIL) is utilized to schedule and assign work tasks. For example, issues in an NY building are reported in FACIL, and assigned and scheduled with an employee in the area to complete the work necessary to mitigate the issue. Completion of work is not reported to RG&E or NYSEG.

¹¹ DR 897

5. Responses to work management and current service level agreements (refer to Chapter III – Governance and Management) cannot support charges from AMC and Avangrid for services charged to NYSEG and RG&E.

6. Avangrid’s responses to changes in its work management processes have been contradicted in its responses to NorthStar inquiries.

- NorthStar requested descriptions of changes to the work management processes since the prior management audit.¹² Avangrid responded:

“The work management process by which work is generated and Gas Operations receives it in the field has not changed substantively since the last audit.”

“The work management process by which work is generated and Electric Operations receives it in the field has not changed substantively since the last audit.”

- On the same day as the request referenced above, NorthStar requested a description of any changes to work management systems and processes since the prior management audit.¹³ The same Avangrid respondents described the following systems efforts listed below, and referred to the response noted above, which claimed there were no substantive changes to management processes as noted above.

- Field Workforce Mobility (FWM) Gas
- FWM Electric
- Field Force
- Field Design
- Contractor Portal

7. Avangrid describes five work management related system implementation efforts, but these do not address fundamental work management elements such as work definition, assignment, scheduling or performance reporting.¹⁴

Field Workforce Mobility (FWM) Gas

- Avangrid stated:

“FWM [Gas] aims to deliver improvements in efficiency, accuracy, and compliance for NY gas operations, ultimately driving better business outcomes and supporting the organization's strategic objectives.”¹⁵

¹² DR 247

¹³ DR 249

¹⁴ DR 247, 249 and DRs 1015 – 1023.

¹⁵ DR 1015

In 2017, the Companies implemented LocusView Forms to transition certain paper documents to electronic forms. LocusView was expanded, and subsequently encompassed all of Gas Operations Mandated inspection work.¹⁶

In June 2023, the Companies began transitioning to a new SAP FWM based system, allowing users to view work completed and work due in a visual dashboard. Additional functionality is being deployed, starting [starting] in October 2023. Future functionality will provide for subsequent phases over the next several months and will lead to a partial replacement of LocusView Forms.¹⁷

FWM Electric

“FWM [Electric] is an existing solution for executing Construction and Maintenance Work Orders created in the Global SAP platform, as well as ad-hoc work, locating them in the map, attaching documents, forms, or media, registering time entries and another additional functionality.”¹⁸

“FWM is a solution that was previously able to run in the Windows operational system. With the migration to the new single device tablets (Android Operational system), there was a need to develop the application to be compatible with it and with the screen size of the device.”¹⁹

- Highlights included:
 - Application upgrade from Windows to Android devices
 - No functionality change
 - Processes from Windows version improved
 - New screens, dropdown lists, material data, forms and reports

Field Force

- Limited information was provided for the Field Force initiative.²⁰
 - As of December 2023, the tool used to schedule and dispatch work to field workers performing construction, maintenance and inspections was no longer supported by the vendor. Salesforce Field Service was chosen as a solution and will require reconfiguration of the system to work with operating standards and integrate with the SAP system that houses service appointments and work orders.
 - Implementation described included four activities: Iterations 1 – 4.

¹⁶ DR 249 and fact verification

¹⁷ DR 249 and fact verification

¹⁸ DR 249

¹⁹ DR 1017

²⁰ DR 249 and 1019

Field Design

“Avangrid Electric Distribution is looking to improve the process of field planning design and work order development while improving system reliability with the use of mobile design tools, standardized designs and engineering analysis.”²¹

“The process for field design currently is inconsistent across regions. Field planners use everything from pencil and paper, manual calculations, measuring wheels, and some handheld electronic tools that work with pole loading analysis software. The older methods of design and engineering are more commonly used with outdated standards books along with manual input into SAP.”

“The new field design technology will include a standardized design software “platform” with seamless interface to SAP and ESRI GIS systems, for the creation of construction work orders in compliance with Avangrid and industry standards. The platform will provide mechanical and electrical analysis tools to verify standards compliance across OpCo’s.”

- Avangrid describes this as a work in progress and has not gone live with the system. As a result, no changes have been made. The expected go-live date for the first implementation was February 2024.²² The Field Design improvement timeline showed initiation in mid-2022 and projected completion in 2025.²³

Contractor Portal

- The Contractor Portal Project was described as:

“Identification, implementation, and enhancement of the Contractor Portal tool within small programs across Avangrid to produce visibility and traceability into the financial expenditures of Avangrid's framework agreements pertaining to Overhead distribution construction work.”²⁴

- Contractor Portal Project work started in 2022. The new Contractor Portal system, based on Fiori and Odata systems from Avangrid’s internal IT group and the Software Factory vendor Wipro, consists of implementing 11 different Functional Design Specification modules to improve the process of assigning, completing, invoicing, and payment receipt of planned field work. The new system will improve communication between contractors and project managers, which also can provide visibility and traceability into Avangrid’s use of framework agreements.²⁵
- The Contractor Portal/Fiori configuration has been developed, including the Fiori back-end system links and URLs based on existing functional design specifications.

²¹ DR 1021

²² DR 249

²³ DR 2021 and Attachments

²⁴ DR 1023 Attachment 4

²⁵ DR 1023 Attachment 1

Enhancements have been submitted to draft new Functional Design Specifications based on new business requirements.²⁶

“The Contractor Portal developments have been transported into the production environment and tested. The technical go live is complete.”²⁷

- Status as of April 2024 indicated that no users were in production, Gas was no longer included, and Electric Distribution inclusion was in question.²⁸ Projected completion of the pilot program remained as September 2024.²⁹

8. Based on responses to audit information requests, the five Avangrid work management-related system implementation efforts evaluated exhibit multiple deficiencies.³⁰

- No system project description or status reporting provided quantitative economic justification.
- System project management approvals have not been addressed.
- Implementation cost management has not been addressed, and cost increases/overruns appear common and without justification.
- Implementation schedules have often been extended or show current challenges to completion.
- Progress reporting has been limited to select updates.
- Schedule changes and extensions have not been supported by explanations.
- Avangrid’s responses addressing savings and improvements have been aspirational, generalized expectations, failing to indicate any intent to track claimed improvements.³¹ Examples include the following:

“FWM [Gas] has developed an innovative SAP transaction that enables a direct interface with inspection data. Furthermore, FWM has designed comprehensive reports for the yearly audit, ensuring clear and distinct inspection data.”

“While quantifiable savings have not yet been realized, we anticipate cost reductions through the elimination of LocusView licenses and improve records compliance.”

²⁶ DR 249 and DR 1023 Attachment 1

²⁷ DR 249 and DR 1023 Attachment 1

²⁸ DR 1023 Attachment 2

²⁹ DR 1023 Attachment 2

³⁰ DRs 247, 249 and DRs 1015 – 1024 and Attachments

³¹ DR 1024

“FWM Electric tool for field operations can benefit the business by enhancing efficiency, improving productivity, and supporting decision-making.

- Enhanced Communication - Seamless communication between field workers and the office. Improved Time and Attendance Tracking - Time tracking supports accurate recording of work hours on a job.
- Reporting - This real-time data collection improves the accuracy and timeliness of reports, aiding in better decision-making and performance analysis.
- Performance Monitoring and Analytics-
- The tool provides detailed analytics and performance metrics, allowing managers to monitor key performance indicators (KPIs) and identify areas for improvement. This continuous monitoring helps in making informed decisions and implementing strategies for better performance.”³²

“The [Field Force] project aims to reach beneficial contributions on the field services planning, scheduling, and dispatching for the mobility tools as well as implementing a new mobility solution integrated with this system. The expected benefits for the business are:

- Streamline the data processing and analyzing, to guarantee a more agile and flexible field services, reducing travel and time restoration.
- Maximize the capacity to collect and combine field services data across the several business areas involved.
- Capture accurate information from/to the field services and keep the systems integrated and updated for a better decision making.
- Consolidate and organize the data by its location, to support safe operations and to provide more accurate staff and material allocation.
- Harmonization of the process, evolving a common process model across the Avangrid and enabling the standardization of different applications by Process/Roles.
- Transform the Company to a data driven company.
- Costs and travel time reduction, through agile and accurate resource/material scheduling.
- More accurate materials’ predictions, mitigating part of the impact of the materials shortage or overstock.”³³

- Field Design:

“To eliminate and reduce time spent in SAP by the designer to create work orders and sketches. A mobility tool will enable the designer to perform the field functions and translate the field information into SAP to an executable Work Order and sketch. Also, the PayID template is created at the onset not after the work order is created. The tool aligns with the planning/scheduling for contractor work engineering/construction and allows for the reconciliation of the PayID engineering MSAs with the work that is being

³² DRs 247, 249 and DRs 1015 – 1024 and Attachments

³³ DRs 247, 249 and DRs 1015 – 1024 and Attachments

performed. The tool will drive the ability to manage and track productivity of the field engineer. The anticipated benefit is a reduction in time spent from field work to work order creation, up to 50% reduction. Implementation of this tool will drive consistent end product; sketches, PayID templates, and quicker executable SAP work orders.”

“The new [Contractor Portal] system will bring several new functionalities as well as reducing manual paper flow and improved consistency between business groups. One of the key capabilities is the automation of the communication between the contractors and their respective OpCo. Included, is the ability to monitor key activities in real time and open visibility of framework usage on a secured portal compliant with corporate security requirements instead of utilizing manual processes as is currently being done. This will improve security in communications, provide the functionality of traceability and improve accountability.”³⁴

- Additional coverage of Avangrid IT management can be found in **Chapter XI – Information Systems**.

9. Avangrid contractor oversight procedures focus on compliance with safety rules.

- Avangrid’s Contractor Safety Guide (Guide) provides a chronological outline of roles and responsibilities for Avangrid personnel and its contractors.³⁵ Contractor safety oversight is driven by the Safety, Health, Environmental and Quality organization within the Avangrid Networks Operations, Planning and Coordination organization.³⁶
- The Guide specifically addresses the following:
 - Documents at pre-bid meetings, pre-construction meetings, safety meetings, and safety briefs.
 - Project Safety Plans
 - Worker Qualifications
 - Contractor Orientation
 - Incident Reporting³⁷
- Policies and procedures related to cost, schedule and quality are considered project management and addressed in project management procedures. NorthStar discusses Avangrid project management in **Chapter VII – Project Management**.³⁸

10. Avangrid’s Contractor Safety Guide addresses areas of contractor oversight.³⁹

- Avangrid has established administrative and management requirements described in the following seven topic areas:

³⁴ DRs 247, 249 and DRs 1015 – 1024 and Attachments

³⁵ DR 252 Attachment 1

³⁶ DR 1 Attachment 1 and DR 1067 Attachment 1

³⁷ DR 252 Attachment 1

³⁸ DR 239 and DR 239 All Attachments

³⁹ Seven Principles for Managing Contractors, <https://www.ecoonline.com>

- Accountability
- Pre-qualification requirements
- Pre-bid meetings
- Clear Scope of Work
- Contractor Risk Assessment and Method Statements
- Proper site orientation by Avangrid
- In-field presence

11. Avangrid relies on the following five key programs to reduce excavation damages:

- Call Before You Dig/811 Program – Avangrid participates in the National 811/Call Before You Dig Program. A requestor receives a ticket number and pertinent utility information.⁴⁰
- Public Awareness Programs - NYSEG and RG&E conduct in-person training sessions with UDig NY contractors throughout the year, using the Paradigm training platform. The companies also host excavator breakfasts.
- Underground Locating Program – Avangrid maintains contracts with vendors who have demonstrated expertise in accurately locating and marking underground gas and electric facilities. These vendors must also maintain an audit program that ensures timeliness, accuracy and safety performance reporting.
- Damage Prevention Vehicle Program (DPV) - In 2008, Avangrid designed and established the DPV program. Avangrid's program features 24 drivers, one dispatcher and two supervisors at each utility. Drivers are dispatched to 811-UDig NY locations to inspect excavation sites and ensure that contractors are following safe digging practices. Avangrid also trains and qualifies a number of its drivers to verify mark outs.
- Ticket Management System – NYSEG and RG&E use the ticket management system Utilisphere (Irth Solutions) as the main engine to track tickets, damages and audits. Utilisphere's risk scoring system includes an algorithm to assess and assign a risk score to each New York excavation ticket. This score helps prioritize DPV drivers more effectively, focusing on higher-risk activities. Utilisphere also tracks and analyzes DPV driver audits. This system generates safety reports for practices identified during audits and serves as a tool for quickly detecting trends and patterns that impact accuracy and safety.⁴¹

12. System damage by third parties has increased from 2019 to 2023, particularly at RG&E.

- As shown in **Exhibit VIII-1**, excavation errors have increased since 2019.

⁴⁰ <https://call811.com/Before-You-Dig>

⁴¹ DR 176, DR 176 Attachments and <https://www.otmlocating.com/services-damage-prevention-vehicles>

- Utilities have limited control of third-party excavator activity in the field. Two tools available to the utilities are the DPV program and public awareness programs.
- Avangrid has underspent Public Awareness budgets since 2019. Underspending budgeted levels suggests there are additional opportunities to improve safety.

**Exhibit VIII-1
3rd Party Contractors
Damages per 1,000 Tickets**

	2019	2020	2021	2022	2023
NYSEG					
No-Calls	0.32	0.30	0.32	0.19	0.19
Mismarks	0.32	0.30	0.32	0.32	0.29
Excavation Error	0.81	0.99	0.93	0.97	1.00
Total	1.45	1.59	1.57	1.48	1.48
RG&E					
No-Calls	0.23	0.25	0.23	0.30	0.33
Mismarks	0.33	0.52	0.31	0.41	0.42
Excavation Error	0.55	0.48	0.53	0.67	1.03
Total	1.11	1.25	1.07	1.38	1.78

Source: NYSPSC 2023 Pipeline Safety Performance Measures Report, [NYSDPS-DMM: Matter Master](#)

- Incidents of contractor system damage increased from 2019 to 2012 at NYSEG, as shown in **Exhibit VIII-2**.⁴² In 2023, damages returned to levels reported in 2019.
- From 2022 to 2023, damages decreased at NYSEG and RG&E, and the number of inspections significantly increased.

**Exhibit VIII-2
Contractor Damages**

	2019	2020	2021	2022	2023
NYSEG Damages per 1000 Tickets	0.03	0.10	0.12	0.05	0.03
RG&E Damages per 1000 Tickets	0.04	0.06	0.03	0.08	0.02
Total Number of Inspections	n/a	n/a	937	1,793	5,013

Source: NYSPSC 2023 Pipeline Safety Performance Measures Report, [NYSDPS-DMM: Matter Master](#)

D. RECOMMENDATIONS

1. Develop an integrated work management system covering all NYSEG and RG&E Gas and Electric operations, maintenance and construction resources based on engineered time standards. This system should cover routine operations, repetitive maintenance activities, planned work and support requirements, while also providing continuous feedback on workforce effectiveness. The system should be in an easy-to-use format expressed in man-hours, along with the combined employee and contractor capacity available, supported by

⁴² DR NYSPSC 2023 Pipeline Safety Performance Measures Report, , [NYSDPS-DMM: Matter Master](#) and DR 1077 Attachment 1

real-time reporting of capacity utilization. The system should include the following specific elements:

- 1.1. Documentation of work level versus resource histogram development and work plan process
 - 1.2. Enhanced methods to calculate workforce capacity and utilization
 - 1.3. Expanded workforce coverage in reports
 - 1.4. Documentation of processes for establishing workforce levels
 - 1.5. Documentation of criteria for adding contractor capacity
 - 1.6. Real-time variance reporting for O&M and project costs
 - 1.7. Tracking performance targets versus actuals.
2. Develop management information reporting and organizational reporting relationships to support integrated work management system.
 3. Develop formal reports on trends covering NYSEG and RG&E workload levels, workforce productivity and utilization. Analysis of these trends should identify high-performing functional areas, along with areas needing improvement. This should serve as a foundation for developing strategies to improve workforce performance.
 4. Integrate reported information covering NYSEG and RG&E workload levels, workforce productivity and utilization with SLA recommendations contained in **Chapter III – Governance and Management**.
 5. Establish formal processes to use work management data as part of annual business planning for NYSEG and RG&E operations and maintenance.
 6. Refine formal work management practices for NYSEG and RG&E Gas and Electric engineering and design functions. Work management systems should include appropriate system tools to support various individual and distinct engineering functional processes and integrate with SLA recommendations contained in **Chapter III – Governance and Management**. Elements that should be formalized include the following:
 - 6.1. Scheduling
 - 6.2. Prioritization and planning
 - 6.3. Resource allocation and leveling
 - 6.4. Performance measurement
 - 6.5. Budget planning and control
 - 6.6. Vendor tracking
 - 6.7. Document/drawing control
 - 6.8. Records management
 - 6.9. Procurement management

6.10. Time reporting.

7. Develop and report on overtime targets and performance metrics for NYSEG and RG&E Gas and Electric operations and maintenance organizations. These metrics should be based on economic analyses and verified industry norms.
8. Annually review the design of monitoring and controlling reports to improve their usefulness.

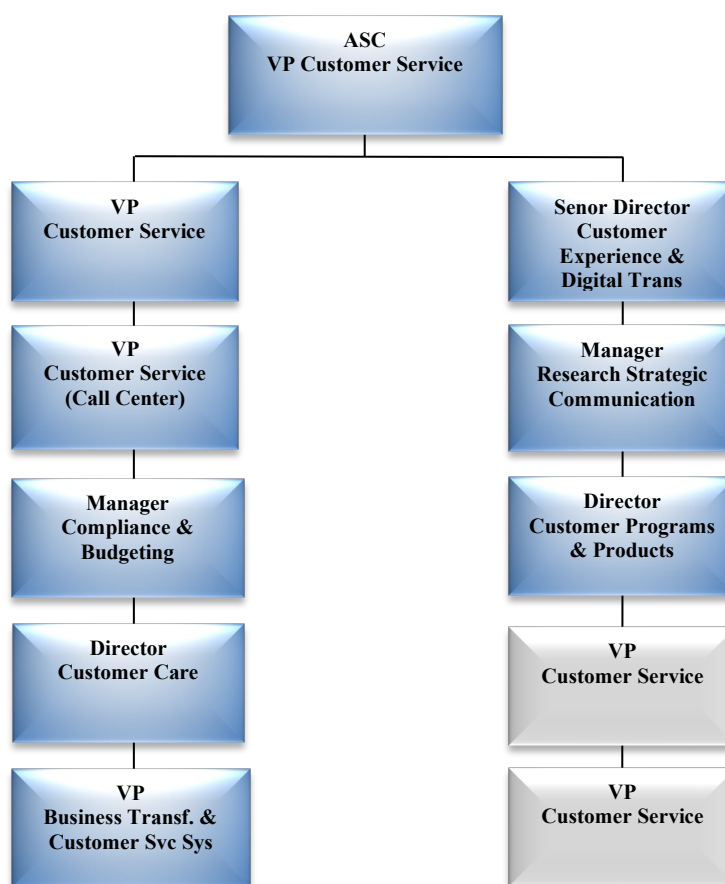
IX. CUSTOMER OPERATIONS

This chapter addresses controls, processes, systems, and effectiveness of Avangrid's Customer Operations activities performed on behalf of NYSEG and RG&E.

A. BACKGROUND

NYSEG and RG&E Customer Operations are directed by Avangrid's Senior Vice President (SVP), Customer Service who oversees multiple utilities. Reporting structure under the SVP is shown in **Exhibit IX-1**. The Avangrid Networks SVP has ten (10) direct reports, seven of whom support New York utilities on an allocated basis.

Exhibit IX-1
Avangrid Service Company Customer Service ^[Note 1]



Note 1: Personnel designated in gray have minimal or no responsibilities for NYSEG or RGE.
Source: DR 1055 Attachment 1 (pg. 1)

Avangrid's Customer Service team supporting NYSEG and RG&E includes: 98 ASC employees, 609 assigned NYSEG employees, and 172 assigned RG&E employees.¹

The organization shows two positions with the same title of Vice President (VP) of Customer Service. One position is responsible for Call Center Operations, and the other for Special Projects, with oversight responsibility for the New York AMI Project.² For purposes of this audit, scope areas associated with Customer Operations for NYSEG and RG&E fall primarily within the following responsibilities:

- The VP Customer Service (Call Center – New York) has 697 (June 2024) team members, covering the following areas:³
 - Billing and Recovery
 - Customer Relations Center
 - Customer Service Field Operations
 - Meter Services
 - Customer Escalations
 - Special Projects / Programs
 - Customer Service Compliance
- The Director of Customer Care provides vendor oversight. Call Center vendors provide 256 resources as of June 2024.⁴

Customer Service Regulations

New York utilities are governed by Title 16 (Public Services) of the New York Codes, Rules and Regulations (NYCRR). Chapter I Rules and Procedures, Subchapter B provides procedures and requirements concerning consumer protections.

- Part 11 contains the Home Energy Fair Practices Act (HEFPA) and Energy Consumer Protection Act. HEFPA was enacted in 1981 to provide protection for electric and gas residential customers in services, billing and payment procedures. Subsequent amendments to 16 NYCRR extended HEFPA protection to consumers served by large private water companies (1986), incorporated the shared meter law (1995), and extended HEFPA protections to transactions between residential customers and Energy Service Companies (ESCOs) (2002).⁵
- Part 12 provides Consumer Complaint Procedures.

¹ DR 1266

² Orientation, DR 1055 Attachment 1

³ Orientation Presentation (slide 95), DR 1 Attachment 1, DR 1055 Attachment 1-2

⁴ DR 1055 Attachment 1-2

⁵ <http://utilityproject.org/wp-content/uploads/2013/12/HEFPA-Chapter-Final-1231131.pdf>

- Part 13 are Rules Governing the Provision of Service by Gas, Electric and Steam Corporations to Nonresidential Customers, establishes rules governing provision of service to non-residential customers.

In general, both Parts 11 (residential) and 13 (non-residential) address the following:

- Provision of service, including requirements for written applications, security deposits, denials of service and timelines for initiation of service.
- Late payment and other charges
- Deferred payment arrangements.
- Meter reading and billing, including estimated bills, back-billing and levelized (or budget) billing.
- Bill content and notification requirements.
- Termination, disconnection and suspension of service.
- Reconnection of service.
- Complaint handling.
- Part 11 also includes additional procedures and special protections for residential customers threatened with disconnection due to lack of payment. These protections do not apply to non-residential customers.

Exhibit IX-2 provides a listing of the Part 11 and 13 provisions.

Exhibit IX-2
Title 16 NYCRR Parts 11 and 13 Provisions

Part 11 (Residential Customers)		Part 13 (Nonresidential Customers)	
11.1	Purpose		
11.2	Applicability of rules	13.1	Applicability of rules and definitions
11.3	Applications for residential service	13.2	Applications for service
11.4	Termination or disconnection of residential service	13.3	Termination of Service
11.5	Residential service--special procedures		
11.6	Voluntary third-party notice		
11.7	Service to entire multiple dwellings		
11.8	Service to two-family dwellings		
11.9	Reconnection of service	13.4	Reconnection of service
11.10	Deferred payment agreements	13.5	Deferred payment agreements
11.11	Budget or levelized payment plans	13.6	Levelized payment plans
11.12	Residential service deposits	13.7	Security deposits
11.13	Meter readings and estimated bills	13.8	Meter reading and estimated bills
11.14	Backbilling on residential accounts	13.9	Backbilling
11.15	Late payment and other charges	13.10	Late payment and other charges
11.16	Contents of bills	13.11	Contents of bills
11.17	Notification requirements	13.12	Notice requirements
11.18	Emergency disconnections of residences	13.13	Disconnection without notice
11.19	Inspection and examination of utility apparatus	13.14	Inspection and examination of utility apparatus
11.20	Complaints to the utility	13.15	Complaint-handling procedures
11.21	Emergency hotline		
11.22	Waiver	13.16	Severability
11.23-11.29	(Reserved)		
Shared Meter Regulations			

Part 11 (Residential Customers)		Part 13 (Nonresidential Customers)	
11.30	Definitions		
11.31	Commission's designee		
11.32	Service to shared meter account		

Source: Title 16 NYCRR.

Exhibit IX-3 provides an overview of typical delivery tariffs assigned to mass markets such as residential and commercial customers.⁶ The utilities identify rates by a “Service Class” (SC) number and “Title”.⁷ Rate structures between the NYSEG and RG&E show the following commonalities:

- Both the utilities have developed rates for residential and non-residential customers. Non-residential customers include commercial and industrial customers.
- Residential and very small non-residential customers have simplistic tariffs that include customer charge and commodity rates (per kWh or per therm).
- Remaining non-residential customers (separated by demand level) are charged for electric delivery based on demand, energy and a flat customer charge.
- The largest customer class (500 kW at NYSEG and 300 kW at RG&E) has mandatory time-of-use demand charges. As tariffs contain delivery charges, these charges are captured in two ways: a meter charge and, for NYSEG, on-peak demand, and for RG&E, the maximum demand incurred.
- Residential and very small non-residential customers have default per-kWh rates with the option of time-of-use tariffs. These are designed for larger users in these classes.⁸

There are two considerations in the application of rates:

- Billed on the correct tariff – Fixed customer costs (billing and meter) vary by size of the customer. The larger the customer, the larger the monthly fixed customer charge (e.g. the CC for NYSEG SC 2 is \$45 and for SC 7 is \$325). The utility has a responsibility to recoup revenue based on customer’s actual usage over time. This eliminates over- or under-collection.⁹
- Billed on the most advantageous tariff – for residential and very small full-service non-residential customers that are large users (over 1,500 kWh per month) within their class and may receive both their energy and delivery from the utility, the time that energy is used becomes a consideration. Customers who can shift energy use from electric

⁶ There are two utility components to a customer bill – delivery and energy/gas. Energy/gas can be procured from either the utility or a third-party supplier. The term “full service” applies to those customers that receive both delivery and electricity/gas from the utility.

⁷ Service Class is the type of customer (residential/non-residential) and size. Service Class and Title are “highlighted” in the first two columns of Exhibit IX-3.

⁸ <https://www.rge.com/account/understandyourbill/pricing> and <https://www.nyseg.com/w/electricity-pricing-and-tariffs>

⁹ <https://www.rge.com/account/understandyourbill/pricing> and <https://www.nyseg.com/w/electricity-pricing-and-tariffs>

vehicle charging, pool filter/pumps, dishwashing and clothes-washing to off-peak hours are offered an opportunity to reduce energy costs through time-of-use rates (TOU). Smart meters are typically more expensive than traditional utility meters. The break-even requires a customer to offset energy costs with the increased cost of the meter. Much of this will change with the New York Advanced Meter Infrastructure (AMI) implementation.

Exhibit IX-3
Common Service Classifications (SC)

NYSEG							
Electric				Delivery Charges			
SC	Title	Type	Applicability	CC ¹	Energy	Demand	Reactive
1	Residential	Default	N/A	Fixed	per kWh		
2	General Service	Default	5 kW to 500 kW	Fixed	per kWh	per kW	per kVAh ²
3	Primary Service - 25 kW or More	Default	25 kW to 500 kW	Fixed	per kWh	per kW	per kVAh
6	General Service	Default	Less than 5 kW and less than 2,000 kWh per month	Fixed	per kWh		
7	Large General Service – TOU ³	Default	Greater than 500 kW	Fixed		On-Peak kW	per kVAh
8	Residential -Day Night	Optional	> 1,000 kWh per month	Fixed	Day/Night per kWh		
9	General Service – Day/Night	Optional	< 5 kW and > 1,000 and < 2,000 kWh per month	Fixed	Day/Night per kWh		
12	Residential Service with TOU	Optional	Greater than 35,000 kWh per year	Fixed	3 time periods - kWh		
Gas				Delivery Charges			
SC	Title	Type	Applicability	CC	Usage		
1	Residential	Default	Residential	3 therms	Per therm - 2 Tiers		
2	General Service	Default	Non-Residential	3 therms	Per therm - 3 tiers		
RG&E							
Electric				Delivery Charges			
SC	Title	Type	Applicability	CC	Energy	Demand	Reactive
1	Residential	Default	Residential	Fixed	per kWh		
2	General Service - Small	Default	Less than 12 kW and less than 3,000 kWh per month	Fixed	per kWh		
3	General Service - >100kW	Default	100 kW minimum	Fixed	per kWh	per kW	
4	Residential - TOU	Optional	Two pricing options: Above and below 24,750 kWh per year	Fixed	Peak/Off-peak per kWh		
7	General Service - 12 kW min	Default	Above 12 kW and above 3000 kWh per month	Fixed	per kWh – 2 Tiers	Fixed	
8	Large General Service - TOU	Default	Greater than 300 kW	Fixed		per kW	per kVAh
9	General Service - TOU	Optional	Available to SCs 2, 3, and 7	Fixed	Peak/Off-peak per kWh	per kW ⁴	
Gas				Delivery Charge			
SC	Title	Type	Applicability	CC	Usage		
1	All	Default	All customers	3 therms	Per therm - 4 Tiers		

Source: <https://www.rge.com/account/understandyourbill/pricing> and <https://www.nyseg.com/w/electricity-pricing-and-tariffs>

Note 1: CC = monthly charge, for electric-customer charge and for gas-service charge.

Note 2: kVAh – kilovolt-ampere-hour.

Note 3: TOU – Time of Use split into 3/2 periods: on-peak, mid-peak, and off-peak or on-peak and off-peak.

Note 4: Includes a demand charge and a meter charge based on demand.

Estimated Billing

Estimated bills are the result of two causes: (1) A mid-period bill between bi-monthly reads and (2) Inability to obtain an actual read. NYSEG and RG&E read most customer meters on a bi-monthly basis. This results in six meter reads per year.¹⁰ This practice allows half the meters to be read each month, which reduces labor costs. To prevent unmanageably large bills, particularly in the winter heating months, estimated bills are developed for the month between the bi-monthly reads.

At NYSEG and RG&E, estimated bills are calculated using the same methodology, regardless of cause. NYSEG and RG&E's bill-estimation methodology was filed with the New York DPS on April 9, 2009 in accordance with 16 NYCRR Section 11.13 (a)(1). The basic construct is shown in **Exhibit IX-4**.

Exhibit IX-4
Bill Estimation Methodology

Customer Type	Methodology
Nonresidential non-heating	1. <u>Average Daily Usage (ADU) multiplied by Days in Current Billing Period</u> – ADU is calculated as the usage from the most recent previous actual-to-actual meter-reading period, divided by the number of days in the billing period. ADU is then multiplied by the number of days in the current billing period to determine estimated usage. If a previous actual read is not available, then: 2. <u>Average of Customer Service Classification</u> - Estimate will be developed based on the average usage of the customer's service classification.
Nonresidential heating	1. <u>ADU multiplied by Days in Current Billing Period</u> - ADU is calculated as the usage from the actual-to-actual meter-read during a period one year ago, divided by the number of days in the billing period. ADU is then multiplied by the number of days in the current billing period to determine estimated usage. If a previous actual read is not available, then: 2. <u>Average of Customer Service Classification</u> - Estimate will be developed based on the average usage of the customer's service classification.
Residential	1. <u>ADU multiplied by Days in Current Billing Period</u> - ADU is calculated as the usage from the actual-to-actual meter-read during a period one year ago, divided by the number of days in the billing period. The ADU is then adjusted for heating customers as follows: • ADU is adjusted for Base Load. Base Load is the constant daily amount of commodity used regardless of weather. A ratio of average summer month to winter month ADU is calculated. A ratio of 100 percent or more results in no change to ADU. • Ratios of less than 100 percent are applied to the ADU to determine Base Load. The difference between Base Load and ADU, which represents the heating component, is then further adjusted for the change in heating degree days from the previous year. • Base load and the weather adjusted use are summed to create a new ADU. • ADU is then multiplied by the number of days in the current billing period to determine estimated usage. If a previous actual read is not available, then: 2. <u>Average of Customer Service Classification</u> - Estimate will be developed based on the average usage of the customer's service classification.

Source: DR 845 Attachment 1

¹⁰ DR 844

Exhibit IX-5 explains how the weather-adjusted ADU should be applied for residential customers.

Exhibit IX-5
Residential Estimation Adjustments for Weather

Natural Gas Customer Estimation Methodology likely using natural gas heat	Summer	Winter
Natural Gas Bill	<u>Quadrant 1G</u> Base Load – no adjustment in ADU	<u>Quadrant 2G</u> Base Load plus Weather Adjusted Heating Consumption
Electric Bill	<u>Quadrant 3G</u> Base Load – no adjustment in ADU	<u>Quadrant 4G</u> Base Load – no adjustment in ADU

Electric Customer Estimation Methodology likely using electric heat	Summer	Winter
Natural Gas Bill	<u>Quadrant 1E</u> Base Load – no adjustment in ADU	<u>Quadrant 2E</u> Base Load – no adjustment in ADU
Electric Bill	<u>Quadrant 3E</u> Base Load – no adjustment in ADU	<u>Quadrant 4E</u> Base Load plus Weather Adjusted Heating Consumption

Source: DR 845 Attachment 1 and NorthStar Analysis

Shared Meter Regulations

A “shared meter,” also referred to as diversion of service, occurs when a utility meter that measures gas, electricity or steam service to a tenant’s dwelling also measures service to areas outside the dwelling. This can include another apartment or common-area lighting. The tenant pays for service to both the rental unit and the outside areas.¹¹

Section 52 of the New York Public Service Law, also referred to as the New York Shared Meter Law, was enacted on October 24, 1991. The law specifies a tenant’s rights, as well as responsibilities of the property owner and utility if a customer believes they are involved with a shared-meter condition. Utility responsibilities include the following:

¹¹ NY Shared Meter Law.

- Notification to owner – A utility must notify the owner that a complaint was received and explain the owner’s responsibilities.
- Investigation – A utility must conduct an investigation of the premises to evaluate the complaint.
- Determination – Within 30 days of the complaint date or receipt of information, a written determination shall be completed.
- Change in billing – Change of responsible party to the owner if the owner does not cooperate with investigation or does not correct shared-meter condition.
- Reparations – Billing of owner for past shared-meter costs plus penalties.

In 2023, Avangrid developed a common process for NYSEG and RG&E. The process involved the development of the following:

- Common forms
- Common training materials
- Common computer drive
- Common analysis¹²

Shared-meter investigations are the responsibility of the Field Customer Service groups reporting to the VP of Customer Services (NY) as shown in **Exhibit IX-1**. NYSEG has three analysts and relies on meter technicians from Meter Services for field Verification. RG&E has two analysts that do both analysis and investigations of shared meters.

Customer Complaints

In 2002, the Office of Consumer Services (OCS) developed a Quick Resolution System (QRS) guide to facilitate timely resolution of customer concerns. Under the QRS, complaints to DPS are forwarded to the utility for resolution. Complaints are classified as QRS. A QRS case is reclassified as a Standard Resolution Solution (SRS) if a customer is dissatisfied with the utility’s attempt to resolve the issue and contacts the DPS within 60 days, or if the utility does not respond to Executive Correspondence within five days). For a QRS complaint, the utility investigates the complaint, responds to the customer and notifies OCS of the resolution.

For an SRS, once the utility receives the SRS complaint from OCS, they must do the following:¹³

¹² IR 23

¹³ <https://dps.ny.gov/service-provider-guides> (QRS Ver 2.5 April 2015)

- Contact the customer within two hours if the matter is related to a collections issue or a service outage. All other customers must be contacted no later than close of the next business day.
- Provide detailed resolution to Executive Correspondence within five days of receipt.
- Resolve matter with customer within 10 calendar days.
- Provide timely status report to OCS.
- Afford customer protections under 16 NYCRR Part 12, including §12.3 which requires continuation of utility service, providing all monies owed to the utility have been paid, except those monies that the customer is disputing.

If a customer is not satisfied with results of a DPS investigation, they may request an informal hearing or review. Requests must be made within 15 days of DPS' initial decision. If the utility and the customer are unable to settle the complaint, the DPS hearing officer will make a decision. If the customer believes the informal hearing officer's or reviewer's decision is wrong, the customer can appeal the decision within 15 days. Appeals are decided by the NYSPSC.¹⁴

DPS compares complaint-response performance of NYS utilities using two metrics:

- **Customer Service Response Index (CSRI)** – CSRI reports on the level of customer service and responsiveness of each utility. The CSRI is based on the following four metrics:¹⁵
 - The Consumer Satisfaction Metric (CSM) is a ratio of the number of initial complaints to the number of escalated complaints in the reporting month.
 - The Complaint Response Time Metric (CRM) is the average number of days it takes a service provider to respond to initial complaints closed in the reporting month.
 - The Escalated Complaint Response Time Metric (ERM) is the average number of days it takes a service provider to respond to escalated complaints closed in the reporting month.
 - The Pending Case Metric (PCM) is the average age of all cases awaiting response, determined on the last day of the reporting month.
- **Escalated Complaint Rate** – A utility's QRS and SRS complaints are converted into a complaint rate, which allows the reader to compare performance regardless of the company's customer base size. The escalation rate is a measure of how successful a utility is in satisfying their customer upon receipt of an initial complaint made through the OCS. This rate represents the average number of escalated complaints received per month per 100,000 customer accounts.

¹⁴ NYS DPS Guide to Filing Complaints about your Regulated Utility Service

¹⁵ <https://dps.ny.gov/system/files/documents/2023/04/csri-guide.pdf>

Negative Revenue Adjustment and Customer Service Performance Mechanism

The NYSPSC requires major electric and gas utilities to submit a monthly (CSPI) report consisting of the following metrics: Appointments, Adjusted Bills, Telephone Answer Response, Estimated Bills, Customer Satisfaction, and Customer Complaints. In addition, an annual Customer Service Performance Mechanisms (CSPMs) report is filed for certain measures negotiated in rate proceedings that are subject to negative revenue adjustments (NRAs) if under-performance occurs.¹⁶

Negative revenue adjustments (NRA's) can occur if certain customer-service metrics are not met. These measures are negotiated in individual utility rate case proceedings. **Exhibit IX-6 and Exhibit IX-7** outline NYSEG and RG&E CSPM metrics.

Exhibit IX-6

NRA Customer Service Performance Mechanism Metrics (2018 to 2020)

	2018		2019		2020	
Metric	Target	Actual	Target	Actual	Target	Actual
NYSEG						
PSC Complaint Rate per 100,000	<1.00	0.85	<1.00	0.33	<1.00	0.30
Customer Interaction Service Index	≥89.50%	91.0%	≥89.50%	91.0%	≥89.50%	90.9%
Calls Answered in 30 seconds	≥63.00%	64.9%	≥63.00%	63.3%	≥63.00%	68.7%
Estimated Meter Reads	≤6.10%	6.0%	≤6.10%	6.08%	≤6.10%	10.0%
RG&E						
PSC Complaint Rate per 100,000	<1.4	0.72	<1.4	0.17	<1.4	0.31
Customer Interaction Service Index	≥88.00%	91.4%	≥88.00%	90.3%	≥88.00%	92.2%
Calls Answered in 30 seconds	≥77.0%	78.2%	≥77.00%	75.7%	≥77.00%	77.8%
Estimated Meter Reads	≤6.0%	6.0%	≤6.0%	6.24%	≤6.0%	11.5%

Source: DR 270, Case 15-E-0283 et al., Case 22-E-0317 et al.

Exhibit IX-7

NRA Customer Service Performance Mechanism Metrics (2021 to 2023)

	2021		2022		2023 Stub Period Jan- April		2023 Post Stub Period May- Dec	
Metric	Target	Actual	Target	Actual	Target	Actual	Target	Actual
NYSEG								
PSC Complaint Rate	<1.00	0.42	<1.00	1.49	<1.00	6.45	<1.4	4.05
Contact Satisfaction	>89.50%	90.6%	>89.5%	84.7%	>89.50%	82.50%	>87.0%	86.40%
Percent of Calls Answered in 30 seconds	>70.00%	70.5%	>70%	43.2%	>70.00%	47.67%	>70%	85.50%
Estimated Bills	<6.76%	9.68%	<6.76%	12.6%	<6.76%	11.48	<6.76%	4.27%

¹⁶ Case 15-M-0566 and Case 22-E-0317 et al.

	2021		2022		2023 Stub Period Jan- April		2023 Post Stub Period May- Dec	
Metric	Target	Actual	Target	Actual	Target	Actual	Target	Actual
NYSEG								
RG&E								
PSC Complaint	<1.00	0.33	<1.00	3.37	<1.00	8.1	<1.00	4.27
Contact Satisfaction	>88.00%	91.0%	>88.00%	80.4%	>88.00	75.00%	>88.00	83.40%
Percent of Calls Answered in 30 seconds	>70.00%	75.8%	>70.0%	41.61%	>70.00%	53.87%	>70.0%	87.00%
Estimated Bills	<15.65%	25.58%	<15.65%	27.9%	<15.65%	16.08%	<15.65%	9.89%

Source: DR 270, Case 15-E-0283 et al., Case 22-E-0317 et al.

Statewide Low-Income Program

In January 2015, the Commission initiated a proceeding to examine low-income programs offered by major electric and gas utilities in New York. This proceeding standardized low-income utility programs to reflect best practices where appropriate, streamlined the regulatory process, and ensured consistency with the Commission's statutory and policy objectives.

On May 20, 2016, the NYSPSC adopted a framework for design of low-income programs, adopting a policy that seeks to limit energy costs to no more than 6 percent of household income. The Commission recognized that reaching all 2.3 million low-income households in New York would involve establishing new partnerships and new ways for utilities to identify and enroll eligible customers.

On February 17, 2017, the NYSPSC approved implementation plans with modifications for NYSEG and RG&E (and several other utilities). The order provided direction related to the following:

- Eligibility/Enrollment
- Benefit Levels (i.e. bill discount design)
- Levelized Billing requirement (budget billing)
- Program Budget (2 percent of total electric or gas sales to end-use customer)
- Arrear forgiveness
- Reconnection Fee Waivers
- Program Reporting Evaluation (quarterly filing)
- Coordination with Other Programs (NYSERDA, DER)
- Customer Outreach Education Strategies

NYSEG and RG&E refer to their low-income program as the Energy Assistance Program (EAP). The EAP monthly bill credit is referred to as Low Income Rate Reduction (LIRR).¹⁷

Marketing and Outreach

The NYSPSC has increased its focus on utility activities related to customer outreach and education, such as coverage related to rights and responsibilities, gas safety, payment assistance and energy savings.

B. AUDIT SCOPE ITEMS

- Evaluate modifications to customer operations internal controls and processes since the prior management audit.
- Examine the accuracy of reports filed with the Commission, including the systems used to generate the reports, and assess any planned changes to the reporting process.
- Evaluate shared meter investigation processes, resources, and documentation (PSL §52).
- Review the Companies' processes, procedures and controls designed to ensure the accuracy and timeliness of customer bills, including bill estimation procedures and efforts to minimize the number of estimated bills (16 NYCRR 13.8).
- Review how the Companies monitor and manage complaint levels, work backlogs, billing and metering issues and other performance problems.
- Evaluate the process to determine whether customers are on the proper rate or qualify for a different rate, and determine steps taken to notify customers if they are on an incorrect rate or qualify for a different rate.
- Assess the Companies' outreach and marketing to customers regarding energy efficiency, low-income, consumer protections, and assistance programs.
- Review how the Companies monitor staffing trends and measure the performance of hiring, retention, and training efforts.
- Evaluate the Companies' procedures related to scams and scam callers. Determine if contact center personnel are trained to handle customers impacted by scams, including the hearing impaired. (Added by DPS staff under customer complaints)
- Assess how the Companies ensure the quality of energy efficiency portfolio performance data. (moved from **Chapter V - Electric Operations**)

¹⁷ DR 437 Attachment 1 and Attachment 3.

C. FINDINGS AND CONCLUSIONS

1. Since the prior management audit, The Residential Rights and Responsibilities booklet has been updated to include a provision to suspend disconnection for nonpayment during extreme heat. However, previous audit recommendations associated with 16 NYCRR § Part 11 & 13 controls have not been fully addressed, and additional areas of deficiencies such as Timing of Service, Service Termination Notice, Security Deposits, Deferred Payment Agreements, Annual Notification of Rights were observed.
 - NYSEG and RG&E do not have separate training material for each utility. Training material is created by Avangrid Human Resources for the New York utilities. Overall, Avangrid training material covers a wide range of customer operations functions but lack formal version control within the documents to determine basic information – such as when material was changed, what material was changed, reviewers, approvers etc., making it impossible to determine when process changes were made during the audit period.¹⁸ Avangrid provided a supplemental log showing Training Material changes since April 2023, and Job Aid changes since September 2023.¹⁹
 - HEFPA-related controls have not changed substantially since the prior audit, with the exception of the addition of temperature protections (extreme heat protections) to the Tariff.²⁰ Extreme heat protection verbiage as found within the utilities’ Residential Rights and Responsibilities booklet:²¹
 - Extreme heat protections: We will suspend residential disconnection for nonpayment when temperatures are forecasted at 85 degrees Fahrenheit or above for a geographic operating region where we provide service.
 - The United States National Weather Service is used to determine forecasts and any resulting regional pauses or residential service disconnections.
 - NorthStar assessed and reassessed business practices ensuring compliance with 16 NYCRR § Part 11 & 13. Results are shown below in **Exhibit IX-8**.

Exhibit IX-8
16 NYCRR Part 11 and 13 Compliance Assessment (Select Regulations)

Regulation Abstract	2018 Compliance Assessment	2023 Compliance Assessment
Service Application and Provision of Utility Service		
Timing of Service – Eligible applicants must receive service within 5 business days for residential customers and 10 business days for non-residential customers from receipt	Based on the number and nature of customer complaints, it is not clear the extent to which Avangrid has systematic processes in place to effectively manage the overall	Between 2018 and 2023 there were 1,231 QRS and 76 SRS complaints related to delayed service and there were 175 QRS

¹⁸ DR 269.

¹⁹ Fact Verification IX-13, 286-290.xlsx

²⁰ Case 16-M-0610 2017 Comprehensive Management and Operations Audit of NYSEG and RG&E, November 2018.

²¹ Residential Rights and Responsibilities, 2024.

Regulation Abstract	2018 Compliance Assessment	2023 Compliance Assessment
of completed oral or written application, unless the applicant specifies a later time, or the utility is precluded from acting because of adverse circumstances. Extension of Facilities to Provide Service – Utilities must provide service to new residential customers within 100 feet of free overhead electric line to their residential building (500 feet of overhead distribution line and 100 feet of service line).	process in order to complete facilities installations in a timely fashion. Between 2014 and 2016 there were 270 QRS and SRS Complaints involving delays or problems with the extension of facilities.	and 22 SRS related to relocation of facilities.²² Enhancements appear to be made to allow applicants to apply for service online via utility website. Communication process is not documented/formalized between the group that responds to customer complaints and group that holds responsibility within the specific operational area.
Written Notification of Service Denial – Utility must give the applicant prompt written notice of its denial within 3 business days of receipt of the application for service. The written notice must state the reason(s) for the denial and precisely what the applicant must do to qualify for service; inform the applicant of his right for investigation and review of the utility’s denial by NYSPSC; provide contact information. Notice must be either hand-delivered or mailed. If mailed, the utility must try to contact the applicant by phone immediately.	Avangrid has but does not send them unless customers request them. Recommendation to change business practice is included in prior management audit.	Training material dated June 2023 indicates a manual process to send denial of service letters. There is no indication that a system control is in place to ensure applications not approved in 3 business days are deemed denied. Training material is not version controlled.²³
Service Classification Placement (Non-Residential) – A conspicuous notice advising the customer that questions are designed to assist utility in placing customer on proper and most beneficial service classification etc.	NYSEG’s form lacks service classification notice information required under 16 NYCRR13 (b)(2)(i). RG&E’s form contains the information but does not notify customers that they may be eligible for service under more than one classification.	Training material dated September 2023 indicates that new contract customers moving in will be billed on the variable rate and placed on a pricing option that is determined by their service class. Customers can switch to ESCO at any time. Avangrid did not specify what information the utility solicits from the customer to determine most beneficial service classification nor did the company provide a conspicuous notice.²⁴ Customer Rates are discussed in a separate section of this Chapter.
Meter Reading and Usage Estimation		

²² DR 619 Attachment 1.

²³ DR 269 Attachment 100.

²⁴ DR 269 Attachment 94 and 96.

Regulation Abstract	2018 Compliance Assessment	2023 Compliance Assessment
Meter Reads and Estimated Bills – Estimated Bills are discussed in a separate section of this Chapter.	NYSEG’s meter estimation rate averaged 4.8% between 2009 and 2016 and was fairly stable during this period. RG&E’s estimation rate rose from 2.0% in 2009 to 6.8% in 2015, before declining to 3.6% in 2016.	NYSEG and RG&E strive to manually read meters once every two months. The percentage of estimated bills calculated is therefore incremental to this number. During the 2017-23 timeframe NYSEG bill estimation rate ranged between 6.28% and 12.58% and RG&E ranged between 8.01% and 27.86% per the reported numbers within the Customer Service Performance Metrics filing.
Efforts to Obtain Meter Readings After Consecutive Estimates (Residential) – HEFPA defines an escalation process to obtain customer readings. When a utility has rendered estimated bills for a period of four months or two billing periods, efforts may include (but not limited to) making an appointment to gain access to the meter, offering customer to read the meter themselves and phone in a meter reading, and providing a card to the customer to record and return to distribution utility.	Avangrid waits six months, instead of four, before beginning the process of sending “no-access” messages to residential customers, and it sends letters warning of “no-access” fees after 10 months, rather than eight as required by HEFPA. Review of the timing of non-residential “no-access” letters indicates these are also sent later than applicable New York rules require. Recommendation to change business practice is included in prior management audit.	During the pandemic, NYSEG and RG&E did not send out no access letters causing non-compliance with HEFPA guidelines for back billing.²⁵ “Employees and company contractors did not enter homes to read meters during periods in 2020, 2021 and 2022 because it was critical to protect the health of all concerned by minimizing in-person contact during the COVID-19 pandemic.”²⁶
Account Billing and Payment		
Service Termination for Non-Payment: Proper notice requires that the utility mail (or serve personally) a customer final notice of termination and allow no less than 15 calendar days before the disconnection date shown on the notice. A utility may not issue or send a customer a final disconnection notice until at least 20 days have passed since the date the payment was due. The final disconnection notice may specify the date payment is due, provided that such date does not occur before personal service of the bill or three days after the mailing of the bill.	By indicating on utility bills that they are “due upon receipt,” Avangrid is able to stay within the boundaries of the New York rules while mailing final termination notices within one month of customers receiving a bill. However, this fairly aggressive dunning procedure may explain why nearly half of the 7,124 customer complaints to the NYSPSC during the years 2014–2016 listed “final termination notice” as the root cause of the complaint.	Customer bills do not indicate a date that payment is due but rather ambiguously states “due upon receipt”. A customer may reasonably infer that the payment due date is not a set date but can be made any time prior to the “Late Fees After” date (which is 23 days after the bill statement date) and typically around 7 days before the next bill statement date. The utility “Final Termination Notice” is set for 18 days after bill statement date. Using the above implied dates, termination notices are issued prior to 20 days passing from when the payment was due.²⁷

²⁵ DR 621 Attachment 7.

²⁶ DR 987.

²⁷ DR 264 Attachment 1.

Regulation Abstract	2018 Compliance Assessment	2023 Compliance Assessment
Therefore, the termination date cannot be set until 35 days has passed from non-payment date with earliest termination possible on the 36 th day.		
Security Deposits (Residential) – No utility shall require any <u>new</u> residential customer to post a security deposit as a condition of receiving utility service, unless such new customer is seasonal/ short-term. A utility may continue to demand deposits as a condition of receiving utility service from: customers who are seasonal/short-term, delinquent, had service terminated, disconnected or suspended for nonpayment during the preceding six month, fail to provide reasonable proof of identity provided a hearing has been held pursuant to PSL section 36(2) and required findings have been made by the commission. No utility shall require security deposits from any person known to be a recipient of public assistance, SSI, or additional State payments, 62 years of age or older (unless service suspended for nonpayment. Within preceding six months).	Avangrid’s written security deposit procedures are consistent with HEFPA and related New York rules applicable to non-residential deposits. Although the procedures as written are consistent with the rules, when we reviewed deposits taken during the month of September 2017, we found that the reason documented for requesting deposits from residential applicants was often indicated as “new customer.” HEFPA does not permit utilities to request deposits from residential applicants simply because they are new customers. In addition, despite that the circumstances under which deposits may be requested are noted in the New York rules and available as deposit reasons in the Customer Care (Information) System (CCS), we found the reason listed for almost 20% of the deposits requested during September 2017 was an unspecified “other.”	Avangrid’s training material dated June 2023 is mostly consistent with NYCRR regulations applicable to residential and non-residential deposits except for the practice of requiring security deposits for customers that fail to provide proof of identity (residential deposits).²⁸ The utility cannot require deposits for those that fail to provide reasonable proof of identity unless a hearing has been held pursuant to PSL section 26(2) and required findings have been made by the commission.
Deferred Payment Agreement Contents of Offer – Every offer of a deferred payment agreement shall inform the customer of the availability of a deferred payment agreement for eligible customers, set forth generally the minimum terms to which such customer is entitled, explain that more generous terms may be possible, and specify the telephone number and the times to call in order to discuss agreement.	The written procedures are consistent with HEFPA and related non-residential rules. Stated maximum down payments and monthly installments are consistent with the rules, and agreements contain required down payments and installments. However, the agreements do not directly explain to non-residential customers that terms more generous than the standard amounts may be possible, as required by 16 NYCRR 13.5(c).	No changes have been made. HEFPA enables utilities to customize / negotiate DPA’s to achieve an agreement that is fair and equitable considering the customer's financial circumstances. Utility practice show customers in arrears are typically offered two choices: the standard agreement or may qualify for the \$10 DPA. There is no indication that customization of payment agreements is a business practice for non-residential customers.²⁹
Annual Notification of Rights – Every utility shall, at the time service is initiated to a residential customer and at least annually thereafter, by a	Not assessed.	For customers receiving paper bills, brochure is inserted. For customers enrolled in eBill, a link to the Energy Library is

²⁸ DR 269 Attachment 99.

²⁹ DR 269 Attachment 123, DR 988

Regulation Abstract	2018 Compliance Assessment	2023 Compliance Assessment
notice accompanying a regular bill or in a separate mailing, provide residential customers with a summary of their rights and obligations under the Home Energy Fair Practices Act, the Energy Consumer Protection Act of 2002 and this part.		included where brochures are available to view. NorthStar does not agree that a link on an eBill to a library meets the definition of notice being provided for the purpose of meeting the Annual Notification of Rights notice criteria. This places the action on the customer themselves.

Source: 16 NYCRR § 11&13, https://dps.ny.gov/system/files/documents/2022/10/hefpa_brochure_12-08.pdf, Rights of Residential Gas and Electricity Customers Public Utility Law Project – 8th Edition,

- NorthStar’s assessment of controls indicates areas of partial compliance or process deficiencies associated with Timing of Service, Service Termination Notice, Security Deposits, Deferred Payment Agreements, and Annual Notification of Rights.
- Prior management audit recommendations continue to show areas of concern. Two recommendations put forth to address areas of non-compliance with 16 NYCRR § Part 11 & 13 included the following:³⁰
 - As required by HEFPA, send letters to all residential service applicants who are denied service, explaining why service has been denied.
 - Begin adding no-access messages to all customer bills two billing cycles earlier than is currently done (e.g. after four months without a meter reading instead of after six months), as required by HEFPA 11.13(b). Send no-access letters to non-demand non-residential customers at eight months without a meter reading, as required by 16 NYCRR 13.8(c)(1), rather than waiting 10 or 12 months as indicated in written procedures (See response to OC-123, attachment 13, p.7, and response to OC-149, Attachment 6). Send no-access letters to all customers beginning at eight months, rather than 10 or 12 months, from the most recent meter reading. Add message to the first non-residential letter notifying customer of a no-access fee if access to meter is not provided, as required by 16 NYCRR 13.8(c)(3), rather than waiting until second letter.
- Other areas where process breakdown has or may occur:
 - Avangrid training material contains conflicting information as to current practice regarding service denials and mailing letters.³¹
 - During the COVID-19 pandemic, NYSEG and RG&E did not send out no-access letters, and they then back-billed customers. This was non-compliant with HEFPA guidelines. Customers who filed complaints received some bill credit.³²

³⁰ Case 16-M-0610 2017 Comprehensive Management and Operations Audit of NYSEG and RG&E, November 2018.

³¹ DR 269 Attachment 94.

³² DR 621 Attachment 7.

2. The utility performs monthly analysis and reporting to determine if customers are at the correct rate. However, the letter to the customer advising them of a rate change does not contain sufficient information.

- Each month, an automated report is run for NYSEG and RGE that includes accounts that may require a rate change based on previously billed consumption. A customer service representative reviews accounts listed in the report and determines if a rate change is required. A letter is sent to the customer advising them of the rate change.³³
- Rate changes are based on the two largest energy/demand readings over the past 12 months.³⁴
- Completion of the monthly report review is dependent on overall workload. ASC's goal is to complete the review each month, but late spring and summer have higher levels of billing-exception workload. Rate changes and the letter are completed instantaneously after review.³⁵
- The ASC processes rate changes in both directions. Customers that qualify for a lower demand bracket (e.g., a 500 kW customer is now a 100 kW customer) are notified, as well as customers who qualify for a higher demand bracket (e.g., a 100 kW customer is now a 500 kW customer).³⁶
- The letter is clear that a rate change to a specific tariff will occur in the next billing period.³⁷
- The letter is void of:
 - Current rate schedule – NYSEG only
 - Requirements of current rate schedule – NYSEG only
 - Detailed reason for change (e.g. demand on your facility was 512 kW, exceeding 500 kW twice in the past 12 months) – both RG&E and NYSEG
 - Requirements of new rate schedule – NYSEG Only³⁸

3. Utilities provide minimum support to determine if customers are using the most beneficial rate.

- Avangrid notifies customers in a rate change letter:

“Please keep in mind that the particular rate you selected, or on which you were placed, may not remain the best rate for you over time. We encourage you to

³³ DR 272.

³⁴ https://www.nyseg.com/documents/40132/5890332/PSC120ServiceClassification_7_11-2023.pdf/fd481f75-74e0-8272-8392-1aa921489a06?t=1699372072277

³⁵ DR 1179 and DR 1269.

³⁶ DR 272, DR 272 Attachments 1 to 15, DR 848, and DR 848 Attachments 1-62.

³⁷ DR 272 Attachment 1.

³⁸ DR 272 Attachments 2 and 7.

review your account periodically. Ultimately, you are responsible for the selection of the rate most advantageous to you and/or for which you qualify.”³⁹

- In the Rights and Responsibilities Rate Summary provided annually to customers:⁴⁰

“The Companies’ analysis is focused on checking that customers are only on rates for which they are eligible, not to determine if there is a better optional rate. As indicated in the Companies’ tariffs, and as part of the annual Rights & Responsibilities Rate Summary document, customers are notified that they are responsible for their rate classification and should contact Customer Service if they wish to have a review”⁴¹

- Avangrid states that residential customers may also find the optional TOU rate through the companies’ websites. NorthStar’s review of the websites found it nearly impossible to locate. It does not appear in the following website menus:
 - Smart Energy
 - Smart Energy>Energy Options
 - Smart Meters

In order to find information on TOU rates the customer must use the following convoluted method:

- Go to utility home page
- Select Account
- Select any option
- Select Account in menu string below the menu
- Select Pricing
- Select Time-of-Use Service Rate under Additional Resources at the bottom of the page⁴²

4. NorthStar found that the estimating procedure is not fully implemented in customer bills.

- NorthStar reviewed a sample of residential customer bills. The sample included bills that have and have not been estimated with the base load adjustment method described in **Exhibit IX-4**.⁴³ NorthStar found:
 - Customer bills which should have received a base-load adjustment described in **Exhibit IX-4**, did not.⁴⁴

³⁹ DR 272 Attachment 1.

⁴⁰ <https://www.nyseg.com/support/energylibrary>

⁴¹ DR 849.

⁴² DR 1176, www.NYSEG.com and www.RGE.com

⁴³ DR 1064 and 1065.

⁴⁴ DR 1065 Attachment 2.

- Avangrid was unable to supply customer bills that have received a base-load adjustment.⁴⁵
- Avangrid does consider ADU for summer and winter estimates.⁴⁶
- Avangrid correctly calculates estimated bills using ADU from the year before.⁴⁷

5. Monetary impact to customers associated with Avangrid not complying with the bill-estimation procedure are minimal and temporary if an actual read is obtained after estimate. Consequences are customer inconvenience, which may increase customer complaint volume.

- Consecutive estimated bills provide greatest uncertainty.
- Any variances in estimates are corrected with next meter read – this stresses importance of timely and actual reads.
- **Exhibit IX-9** provides the utilities’ performance in percent of estimated reads. DPS and Avangrid have changed the metric calculation every two years. It is difficult to determine improvements.
- In 2021, the metric was changed from estimated reads to estimated bills. The impact would increase number of estimates. Any bill that has one of the commodities estimated counts as an estimated bill. Prior to 2021, meters were counted, so a dual-commodity customer could have an actual read and an estimated read.
- In 2023, the estimated bill metric began excluding facilities where the utility did not have access to the meter.⁴⁸

**Exhibit IX-9
Residential Meter Reading Performance**

Year	NYSEG	RG&E	Metric
2019	6.4%	14.5%	Estimated reads
2020	10.2%	16.4%	Estimated reads
2021	9.7%	25.6%	Estimated bills
2022	12.6%	27.9%	Estimated bills
2023	6.7%	11.7%	Estimated bills excluding no access

Source: DR 270 Attachment 1, DR 1198, and DR 1232 Attachment 1

⁴⁵ DR 1064

⁴⁶ DR 1065

⁴⁷ DR 1065 All Attachments.

⁴⁸ DR 1198.

6. Until 2023, Avangrid has not demonstrated managerial oversight of NYSEG and RG&E shared-meter investigations.

- No management-level reports were provided for review.⁴⁹
- RG&E uses a manual paper process, where investigations are stored in hard copy files. A review of limited available records provided by RG&E demonstrates attention to detail, complete documentation and good customer service.⁵⁰
- NYSEG maintains lists of shared-meter investigations, but none of the actions taken by NYSEG have been captured electronically. NYSEG could not provide field investigation reports.⁵¹
- NorthStar found insufficient record retention. Avangrid's record-retention schedule does not specifically identify shared-meter investigations. Shared-meter investigations involve generation of correspondence to customers and landlords. Customer correspondence under Retention Schedule 004-12, Retention Code R0004490 dictates a life-of-the-system retention period.⁵²

7. Based on limited available information, the utilities generally complete investigations and provide determination letter within 30 business days.

- In the period between 2018 and 2022, 1,588 shared meter investigation were conducted.⁵³
- Avangrid provided a sample of data from 27 NYSEG investigations. In 23 of the 27 investigations, the 30-business day requirement was met.⁵⁴
- Avangrid provided a sample of data from 10 RG&E investigations. In eight of the 10 investigations, the 30-business day requirement was met.⁵⁵
- Oftentimes, the metric is missed due to customer or owner missing the appointment.

8. Avangrid Customer Operations functions include outsourced services and staff augmentation for Call Center Support, CDG Billing Support, Billing Exception Support, and RG&E meter reading. Between 2018 and 2023, outsourcing costs have almost tripled, and internal costs have doubled.

- Operationally within Customer Operations, NYSEG and RG&E are managed as regional utilities. Managers are responsible for both NYSEG and RG&E, and utilize

⁴⁹ DR 292 and DR 292 Attachments 1-3.

⁵⁰ DR 296 Supplement 1.

⁵¹ DR 851 Supp 1.

⁵² DR 292, DR 296 Supplement 1 Attachment 1, DR 851 all attachments, DR 851 Supp 1, DR 885 Supp1.

⁵³ DR 298 Supp 1 Attachment 1.

⁵⁴ DR 296 Attachment 1.

⁵⁵ DR 296 Supplement 1 Attachment 2.

Avangrid processes, procedures and systems. Avangrid employees within the organization may have responsibility for one or both utilities.⁵⁶

- Meter Reading at NYSEG is performed by NYSEG Union employees, but is performed by a vendor at RG&E. Contact center representatives have primary responsibility for either NYSEG or RG&E but may cross over for overflow support. Billing personnel at NYSEG are union members, but may be utilized for RG&E work. RG&E billing personnel are not union members, so they cannot be utilized by NYSEG.⁵⁷
- Avangrid Customer Operations is heavily supplemented by outside vendor services for Call Center Support, CDG Billing Support, Billing Exception Support, and RG&E Meter Reading. Outsourcing utility functions has continued to increase year over year with significant increase of over 50 percent each year in 2022 and 2023.⁵⁸
- Internal and External Call Center staffing cost comparisons between 2018 and 2023 show total internal costs have approximately doubled, from 2018 to 2023. Similarly, external costs have also approximately doubled, from 2018 to 2023, while call volume in 2023 is comparable to 2018 levels.⁵⁹
- NYSEG and RG&E do not report any direct internal labor costs recorded to SAP General Ledger (GL) accounts. Internal labor costs were provided in aggregate, without GL codes.⁶⁰
- Virtualization of Avangrid Call Centers was one of many initiatives under Avangrid's Forward 2020-Plus Plan. The plan recommended modernizing customer service capability through a combination of consolidating and virtualizing the seven distinct customer-care call centers and outsourcing non-customer-facing activities. In addition, technology enhancement to support a more automated customer experience from the web through back-end systems was recommended.⁶¹ As of the end of 2023, the following have been completed:
 - Consolidate the seven customer care centers for Avangrid Networks into three.
 - Enhance current customer core technology to reduce manual effort associated with certain customer inquiries.
 - Utilize Robotic Process Automation (RPA) across customer service to reduce overall manual efforts.⁶²

⁵⁶ DR 1055 Attachment 1.

⁵⁷ DR 456.

⁵⁸ DR 545 Attachment 8, DR 664 Attachment 2 (Billing Support), DR 544 Attachment 5

⁵⁹ DR 545 Attachment 8 (Call Center Vendor Costs), DR 638 Attachment 1 (Internal), DR 501 (Call Center)

⁶⁰ DR 499.

⁶¹ DR 11 Attachment 1.

⁶² DR 1238.

9. Avangrid does not have appropriate controls for customer service outsourcing and augmented staffing invoice review and approval, or contract management. The company also has a process disconnect between budgets and contracted work.

- NorthStar observed issues with controls for invoice review, contract management and budgeting during review of outsourcing and staff augmentation expenses.
- The following examples of invoice issues were observed:
 - Avangrid could not substantiate call-center charges for NYSEG and RG&E. Avangrid did not provide any invoices from the primary Call Center Vendor requested by NorthStar for testing. Reports show total outsourced call center spend to the vendor between 2018 and 2023 for NYSEG and RG&E combined. The vendor is contracted to support multiple Avangrid entities (CMP, CNG, NYSEG, RG&E, SCG, and UI).⁶³
 - A vendor invoiced a “CO Fees” in an amount that is not a chargeable fee listed in the contract.⁶⁴
 - Invoices are not easily distinguishable between CDG Billing Support and Billing exceptions support (services provided by same vendor). For example, the same PO number is used for June 2022 charges. Invoice details are lacking for 2020 and 2021 years. Resource detail on invoice support does not include position level to cross reference with contract rates. Engagement Leader charges appear on invoices for the timeframe where the contract indicates the Engagement Leader time will not be charged.⁶⁵
 - Meter Reading invoices do not provide an explanation of missed performance metrics. Total invoice amount is recorded in Avangrid’s accounting system - transaction records do not differentiate between labor services charges and performance penalty credits.⁶⁶
- The following examples of issues were observed with contract management and contract value monitoring:
 - Contracts do not include contract / PO numbers.⁶⁷
 - Vendor name on the contract does not match vendor name on financial summary data.⁶⁸ There is no dba or other reference on the contract to indicate any relationship between companies.⁶⁹
 - Avangrid contract with the vendor shows a large time lag between agreement made date of December 21, 2020, and executed date of February 3, 2021. Accounting

⁶³ DR 545 Attachment 4 and Attachment 9.

⁶⁴ DR 664 Attachment 3.

⁶⁵ DR 664 Attachment 1,3, DR 664 Supp Attachment 1, Fact Verification Supplemental IX-24 499-503.

⁶⁶ DR 544 Attachment 3.

⁶⁷ DR 664 Attachment 2, DR 545 Attachment 8, DR 664 Attachment 5.

⁶⁸ DR 545 Attachment 5 and 8.

⁶⁹ DR 545 Attachment 1-3.

transaction data also indicate payments were made to vendor for services prior to contract execution.⁷⁰

- PO numbers are hand-corrected on majority of invoices for meter-reading services.⁷¹
 - Change orders are not all numbered.⁷²
 - Contract value for CDG Billing and exception processing services and four change orders between 2021 and 2023 total \$6,687,467. Actual charges exceed \$10M.⁷³
- The following examples related to contracts and budgets misalignment also were noted:
 - Billing Exception Support Services (non-CDG billing support) budget amounts are \$0 for all years. Actual costs for 2022 to 2023, indicated the work was not budgeted for, even though contracts had been executed for the work.
 - Manual CDG Billing Support shows a large variance between budget and actuals for 2022 and 2023.⁷⁴
 - Call Center Support Services also shows a large variance between budget and actuals, most notably for 2023, with a combined NYSEG and RG&E total budgeted cost for a call center vendor and reports showing actual cost variance.

10. Despite increased spend, some metrics have not improved, and negative revenue adjustments (NRAs) persist. Challenges continue in customer satisfaction and complaints.

- Refer to the background section of this chapter for each utility’s customer service targets and performance level for each year between 2018 and 2023.
- The customer service performance indicator (CSPI) report shows that the companies struggled to return to pre-COVID performance levels, with several service-quality metrics triggering a negative revenue adjustment (NRA) between 2018 and 2023. In addition, all metrics were missed during 2022 and 2023 (four metrics were missed pre-stub 2023, and two metrics post-stub 2023).
- Failure to meet Customer Service metrics resulted in negative revenue adjustments (NRAs) for performance in 2019, 2022 and 2023. 2022 and 2023 were most significantly impacted, with \$14.6M and \$18.6M in NRAs. NRA amounts for each utility are shown in **Exhibit IX-10**.

⁷⁰ DR 664 Attachment 1.

⁷¹ DR 544 Attachment 3.

⁷² DR 664 Supp Attachment 1.

⁷³ DR 664 Attachment 2, DR 4664 Attachment 1 and Supp Attachment 1.

⁷⁴ DR 664 Attachment 2.

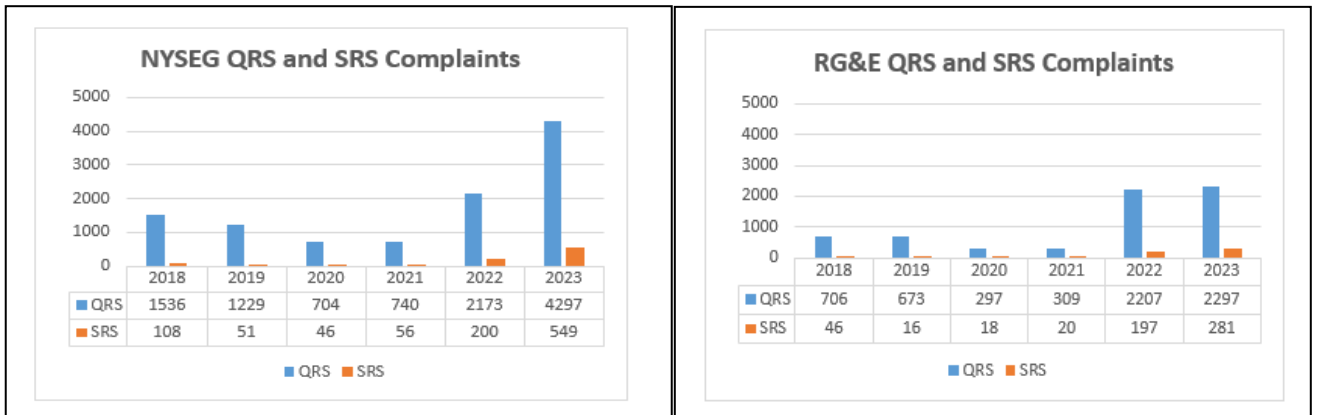
Exhibit IX-10
NYSEG and RG&E Negative Revenue Adjustments from 2018 to 2023 (\$)

NRA	2018	2019	2020	2021	2022	2023
NYSEG						
NYSPSC Complaints					\$2,400,000	\$5,175,198
Contact Satisfaction					\$3,200,000	\$5,175,198
% Calls Answered in 30 seconds					\$1,720,000	\$571,850
Estimated Meter Reads missed target			\$1,400,000	\$750,000	\$1,400,000	\$466,712
Subtotal:	\$0	\$0	\$1,400,000	\$750,000	\$8,720,000	\$11,388,958
RG&E						
NYSPSC Complaints					\$2,000,000	\$3,322,923
Contact Satisfaction					\$2,000,000	\$3,322,923
% Calls Answered in 30 seconds		\$350,000			\$1,000,000	\$332,226
Estimated Meter Reads missed target		\$175,000	\$900,000	\$900,000	\$900,000	\$100,195
Subtotal:	\$0	\$525,000	\$900,000	\$900,000	\$5,900,000	\$7,078,267
Total:	\$0	\$525,000	\$2,300,000	\$1,650,000	\$14,600,000	\$18,367,225

Source: Case 22-E-0317/Case 22-G-0317 (NYSEG) & Case 22-E-0319/Case 22-G-020 (RG&E), DR 270

- Improved performance is noteworthy for the Percent Calls Answered in 30 seconds metric and Estimated Meter Reads metric in the latter half of 2023 (post-stub 2023) period.
- The most significant increase in Negative Revenue Adjustments (NRAs) is attributable to metrics for NYSPSC Complaints and Contact Satisfaction with NRAs totaling \$14.6M in 2022 and \$18.5M in 2023 for these two metrics.
- **Exhibit IX-11** displays the total number of NYSEG and RG&E QRS and SRS complaints.
 - NYSEG QRS complaints have increased approximately four times and RG&E's have increased approximately three times between 2018 and 2023.
 - NYSEG SRS complaints have increased approximately five times and RG&E's have increased approximately six times between 2018 and 2023.

Exhibit IX-11 QRS & SRS Complaints from 2018 to 2023



Source: DR 619

- A review of all NYSEG and RG&E SRS escalated complaints in 2023 indicates that approximately 75 percent of complaints are associated with billing issues (high bill, bill delay, inaccurate bill, estimated bill, back-billing and refund requests for overpayments) for each utility. Remaining top issues encompass service suspension/term/block threat, delayed new service, net metering, service class, intermittent out of service, budget, and tree trimming.⁷⁵ As AMI continues to be implemented, complaints attributable to meter misreads and estimated meter reading should decrease.

11. Customer complaints highlight challenges faced by representatives in achieving first-call resolution, effectively resolving customer issues, and the absence of feedback mechanisms to improve operations.

- NorthStar randomly selected 20 escalated complaints (SRS), 10 from each NYSEG and RG&E, to review case file information. None of the case files contained customer complaint closeout letters or garnered root causes of customer issues that would allow for trending or feedback to responsible area for continuous improvement.⁷⁶
- A summary of observations from the NYSEG and RG&E case files is below:
 - Missing dates: Some QRS response dates and SRS response dates.
 - Case Closeout: Cases closed without evidence of SRS response or customer letter confirmed to be sent (DPS send letter and Avangrid does not always obtain a copy for file closeout purposes).⁷⁷
 - Incomplete case files: Generally, files do not include information such as usage and billing history or the communication log between customer and Avangrid representative.

⁷⁵ DR 619.

⁷⁶ DR 620 and 621.

⁷⁷ Fact Verification

- Internal actions: No internal follow-up is noted to fix root causes of issues such as determining why a customer was double-billed for service or why a safety-inspection record was missing from the system.
 - Actions to resolve customer problems: Opportunities to solve customer issues not taken, such as asking the customer to take a picture of their meter to determine if usage was reasonable or if meter was not misread.
 - Service level: Inability to meet service-level response time.⁷⁸
- Starting in 2024, weekly meetings were held to discuss customer escalation, known as the CRC – NYSPSC Weekly Review. Case discussions reflect the following:
 - Difficulty in first-call resolution, as indicated by extensive number of times the customer calls without problem resolution and multiple call transfers.
 - Call Center Representatives incapable of solving customer issues and lack of research and follow-up to assist customer.
 - Reasons given for escalated complaints were from the perspective of why a customer issue became an SRS complaint and, in most cases, lacked internal feedback to the responsible (root-cause) department within the company.⁷⁹
 - An Avangrid escalation task force started in May 2023, with 42 individuals, including six from the Customer Escalations Core Team. Small-group team meetings were held to train representatives on QRS, SRS or a combination of both. This included training to use the original customer escalation tracker and the DPS site, along with how to respond to each type of case.⁸⁰
 - For most of the audit period, the complaint tracking process was completed manually through data entry in spreadsheets. A new web-based NYSPSC Case Tracker went live in June 2023 and has removed most manual tracking labor. Other process improvements understood to have occurred include the following:
 - Escalation Task Force Microsoft Teams chat created.
 - SRS templates created and stored in folders.
 - Internal review of responses prior to submitting DPS.
 - Sample responses provided to those working on complaint responses.⁸¹
 - Post-audit period shows incoming NYSPSC cases have dropped approximately in half (as of May 7, 2024).⁸² A weekly meeting is held to review overall incoming volume, review expectations and discuss select cases. However, in these meetings, the focus is on what the customer representative could have done differently to prevent the

⁷⁸ DR 620, DR 621.

⁷⁹ DR 622 Attachment 1.

⁸⁰ DR 986.

⁸¹ DR 986.

⁸² DR 986 Attachment 4.

customer complaint getting escalated to the NYSPSC and does not indicate what further actions are taken within Avangrid to resolve the root-cause of the issue.⁸³

12. Avangrid does not retain records of NYSEG and RG&E customer bills between management audits.

- Avangrid was not able to produce customer bills spanning the full audit period. In particular, residential bills requested for purposes of low-income program review were not available for 2018-2021. The latest bill date available continued to move as the audit progressed. Avangrid has stated that its computer system retains customer bills for only two years.⁸⁴ System screen print information (that was not the equivalent of a customer bill) was provided as a substitute.⁸⁵ Another data response stated that customer bills are accessible for 13 months.⁸⁶ A supplemental response dated May 24, 2024, stated that the last bill available in the system that can be viewed is from July 2022.⁸⁷
- Avangrid's record retention schedule does not capture specific requirements for retaining NYSEG and RG&E customer billing information.⁸⁸

13. NYSEG and RG&E Low-Income tariffs are incomplete, and therefore do not align with intended business process. Qualifying programs are missing from Tariffs, EAP forms and training documents. Tariffs lack provision to allow for automatic enrollment of customers through the bi-annual Office of Temporary and Disability Assistance (OTDA) file-match process. Tariff language for annual renewal eligibility requirement is not comprehensive. Tariff does not define Tier 4 placement requirement.

- Since the last management audit, NYSDPS initiated a statewide standardization of utility Low-Income Programs.⁸⁹
- **NYSPSC Qualifying Programs** – NYSEG and RG&E tariffs have some misalignment with guidance provided by NYSPSC for qualifying programs. NYSPSC directed all utilities to open their low-income discount programs to households that currently receive a Home Energy Assistance Program (HEAP) benefit, regardless of fuel or benefit type –and to expand eligibility to include other public assistance programs besides HEAP.
- **Exhibit IX-12** compares NYSPSC qualifying programs with NYSEG and RG&E tariffs and the Energy Assistance Program (EAP) customer form. As shown, tariff for program eligibility is missing the Utility Guarantee/Direct Vendor programs, TANF and Safety Assistance. The Tariff for Program Tier Placement is missing Federal

⁸³ DR 968 Attachment 4.

⁸⁴ DR 441.

⁸⁵ DR 441.

⁸⁶ DR 751.

⁸⁷ DR 751 Supp.

⁸⁸ DR 885 Supp 1 Attachment 1.

⁸⁹ Case 14-M-0565.

Lifeline qualifying programs, Utility Guarantee/Direct Vendor programs, TANF and Safety Assistance. The EAP customer form is missing the Utility Guarantee/Direct Vendor programs, TANF and Safety Assistance.

Exhibit IX-12
NYSPSC Qualifying Programs vs NYSEG and RG&E Tariffs

NYSPSC Energy Assistance Program Eligibility	NYSEG and RG&E Tariff Eligibility	NYSEG and RG&E Tariff Program Tier Placement	NYSEG and RG&E EAP Customer Form
Home Energy Assistance Program (HEAP)	Yes	Yes	Yes
Lifeline Telephone Service Program (Lifeline)	Yes	Yes	Yes
Supplemental Nutrition Assistance Program (SNAP)	Yes (Federal Lifeline Qualifying Programs)	No (Federal Lifeline Qualifying Programs)	Yes
Medicaid			Yes
Veterans Disability or Survivors Pension			Yes
Supplemental Security Income (SSI)			Yes
Federal Public Housing Assistance			Yes
Bureau of Indian Affairs General Assistance (if living on tribal lands)			Yes
Head Start (if living on tribal lands)			Yes
Tribal TANF (if living on tribal lands)			Yes
Food Distribution Program on Indian Reservations (if living on tribal lands)			Yes
Utility Guarantee / Direct Vendor programs	No	No	No
Temporary Assistance for Needy Families (TANF)	No	No	No
Safety Net Assistance	No	No	No

Source: NorthStar Analysis, <https://dps.ny.gov/system/files/documents/2023/10/energy-affordability-program.pdf>

Consumer Eligibility - Universal Service Administrative Company (usac.org)

<https://www.usac.org/lifeline/consumer-eligibility/>, Leaf No's - 150.3 Rev 4, 105.5 Rev 4, 86.24 Rev 4, 84.3 Rev 4, 86.24 Rev 4, NYSEG & RG&E EAP Statement Leaves.

<https://www.nyseg.com/documents/40132/5890497/FINAL%2BNPPF001%2BNYSEG%2BEnergy%2BAssistance%2BProgram%2BApplication%2BDesign%2B02.28.22.pdf/be84ebd0-9b5c-42ce-c7fa-e6733d810862eb4bbc02-206a-6b10-a19b-0fd3783fe954> (rge.com)

- Training documents dated July 2022, November 2023 and July 2023 indicate that program changes took place effective September 1, 2021. Training documents were not provided prior to July 2022. Similar to tariffs and EAP form, the training document is missing expanded eligibility programs.
- NorthStar's review of program eligibility within training documents shows that TANF and Tribal TANF are not separately distinguished. Training documents are missing Utility Guarantee/Direct Vendor programs, Safety Net Assistance, and some Federal Lifeline-qualifying programs, such as (Federal Public Housing Assistance, Bureau of Indian Affairs General Assistance and Head Start (if living on tribal lands)).⁹⁰

⁹⁰ DR 437 Attachment 1.

- NYSEG and RG&E tariffs are missing a provision to allow for automated customer enrollment through the bi-annual OTDA file-matching process.⁹¹
- NYSEG and RG&E tariffs are missing a provision for customer eligibility renewal for customers enrolled via qualifying programs. Tariffs are limited to HEAP and federal Lifeline.
 - Prior to each HEAP season, a customer who has not received a HEAP benefit in the preceding 12 months shall be removed from the Low-Income Program.
 - A customer currently enrolled in the Low-Income Program must provide documentation every 12 months to verify that they are still receiving benefits through the Federal Lifeline Program.
- Low-Income Program Discount Statement tariffs are missing language for Tier placement of customers enrolled based on qualifying programs – apart from HEAP and the Federal Lifeline program. In addition, tariffs do not define requirement criteria for Tier 4 placement.⁹²

14. Administration and management of NYSEG’s and RG&E’s Low-Income Program is deficient. Record management and program quality are lacking. Avangrid is unable to report total discounts/credits by Tier level.

- NYSEG and RG&E refer to their Low-Income Program as the Energy Assistance Program (EAP). The EAP included in the monthly bill credit is referred to as a Low-Income Rate Reduction (LIRR).⁹³
- NorthStar assessed management of the Low-Income Program and found the following:
 - The program has no dedicated overarching manager (as of September 22, 2024 a dedicated Low-Income Manager has been hired).⁹⁴
 - A comprehensive, version-controlled, end-to-end process and procedures for program administration do not exist.
 - Program quality assurance is lacking.
 - Program practices do not align with tariff for annual removal of ineligible customers and budget billing.
 - Bill discounts are applied as credits against delivery charges, impacting tax calculations.
 - Several manually processed applications and proof of program eligibility could not be located.

⁹¹ Leaf No’s - 150.3 Rev 4, 105.5 Rev 4, 86.24 Rev 4, 84.3 Rev 4, 86.24 Rev 4, NYSEG & RG&E EAP Statement Leaves.

⁹² NYSEG & RG&E EAP Statement Leaves.

⁹³ DR 437 Attachment 1 and Attachment 3.

⁹⁴ Fact Verification

- Avangrid is unable to report total discounts/credits by Tier level. Avangrid does not consider this type of reporting to be a requirement as part of the Order adopting Energy Affordability Policy Modifications in Case 14-M-0565.⁹⁵
- **Program Administration** - The program does not have an overarching Program Manager. Nor does it have comprehensive, end-to-end, formally documented processes for program administration, quality, document storage/security, or record retention. Program responsibility resides with Revenue Recovery department. This team is responsible for posting HEAP payments and processing self-certification applications. The Low-Income representatives at NYSEG and RGE are responsible for processing self-certification applications. The Customer Service Center of Excellence (Business Support & Solutions) processes the OTDA file match with assistance from the Revenue Recovery team.⁹⁶
- **Enrollment** – Program practices show that NYSEG and RG&E customers can be enrolled in the EAP in three ways:⁹⁷
 - Receive a HEAP payment - The NYS Office of Temporary and Disability Assistance (OTDA) sends HEAP payments to the companies. Avangrid’s SAP CCS system is designed to automatically enroll customers in the LIRR program when a HEAP payment posts to their account.⁹⁸
 - Self-Certify – The customer must complete an application and provide necessary documentation.
 - File match – OTDA sends a file that includes a list of customers receiving assistance to the companies to match with active customer accounts.
- **Removal** – NYSEG’s and RG&E’s annual Low-Income program removal process for non-eligible customers is not developed. Avangrid initially indicated that customers are removed annually from the program as required (in alignment with tariff renewal requirements).⁹⁹ Further inquiry found the companies had not removed customers from the program in compliance with tariff requirements. The companies further clarified that they first began to remove customers in phases in Q4 of 2023 for customers who did not receive HEAP payments after November 1, 2021, did not self- certify and were not on the OTDA match file. Additional removal efforts are planned prior to the 2024-2025 HEAP season.
- **Budget Billing** – NYSEG and RG&E Tariffs state: “A customer enrolled in the Low-Income Program shall be billed in accordance with Rule 4.P.(1) Budget Billing of this Schedule.”¹⁰⁰

⁹⁵ Fact Verification

⁹⁶ DR 438, Fact Verification.

⁹⁷ DR 438.

⁹⁸ DR 437 Attachment 2.

⁹⁹ DR 749.

¹⁰⁰ Tariff Leaf No. 150.3 et al.

- In addition, NYSEG's and RG&E's Low Income Implementation plan states: "The Companies will also begin enrolling all eligible customers into Budget Billing upon approval of the Companies' Low Income Implementation Plan."¹⁰¹ NorthStar's review of eight new customer enrollments (one example provided for each Tier by utility) shows only one of four NYSEG customers enrolled in budget billing (a Tier 4 customer) and one of four RG&E customers enrolled in budget billing (a Tier 2 customer) – indicating that new program customers are not consistently enrolled in budget billing.¹⁰²
- The Tariff indicates that if a customer falls into arrears, they shall be removed from Budget Billing in accordance with Rule 4.P.(1)(b) of this Schedule. Once the customer resolves the arrears, they can be re-enrolled in Budget Billing. The Tariff does not state that a customer will be denied budget billing if they are in arrears at time of Low-Income Program enrollment.
- **Discount** – Some discrepancies exist between the Low-Income Program Implementation plan and actual implementation.¹⁰³
 - Discussion within the implementation plan refers to "bill discounts." Actual implementation shows that customers do not receive a discount on their bill, but rather a credit against the delivery charge – which impacts tax calculations differently than if typical bill discounts occurred.
 - The implementation plan states that the companies propose a fixed-discount approach consistent with that proposed in the Low-Income Order. Actual implementation shows that, for electric and gas, the discount amount is not a fixed amount but varies depending on the number of days in a billing cycle.¹⁰⁴
- **Program Reporting** – Program-reporting capabilities are limited. The companies are unable to provide program reporting of total discount amounts by tier level. Avangrid has stated that they do not track these data by Tier.¹⁰⁵ Reporting of manually processed applications and tier level was also inaccurate.¹⁰⁶
- NorthStar selected 36 manually processed NYSEG applications and 20 manually processed RG&E applications across a range of eligibility groups to assess evidence of application and customer eligibility documentation.
- A summary of selections requested versus documentation provided is shown in **Exhibit IX-13**.

¹⁰¹ Case 14-M-0565 September 15, 2016.

¹⁰² DR 449.

¹⁰³ Case 14-M-0565 September 15, 2016, DR 441.

¹⁰⁴ DR 441 Attachment 8.

¹⁰⁵ DR 753, DR 753 Attachment 2.

¹⁰⁶ DR 443 Attachment 1, DR 600, DR 757.

Exhibit IX-13
Low Income Eligibility vs Utility Documentation

	Eligibility Program	# Applications Selected	# Received Applications Provided	# Signed Applications Provided	# Applications with Appropriate Supporting Material with Date
NYSEG					
2023	VA Assistance	2	2	2	2
2023	SNAP	10	10	8	10
2023	HEAD Start	1	1	1	1
2022	Lifeline	6	2	2	6
2022	Federal Housing	11	6	6	9
2022	Survivor Benefits	2	1	1	1
2022	Head Start	3	3 [Note 1]	3	0
2021	SSI	1	0	0	0
Subtotal:		36	25	23	29
% Subtotal:			69%	64%	81%
RG&E					
2023	SSI	1	1	1	1
2023	Medicaid	4	4	4	3
2023	HEAP	4	4	4	4
2023	Federal Housing	1	1	1	1
2022	Lifeline	4	2	2	2
2022	Federal Housing	4	3	3	2
2022	Survivor Benefits	1	0	0	0
2021	HEAP	1	0	0	0
Subtotal:		20	15	15	13
% Subtotal:			75%	75%	65%
Total:		56	71%	68%	75%

Note 1: Received more Head Start applications than requested, removed additional from count.

Source: DR 433, DR 600, DR 757

- Review of NYSEG and RG&E enrollments in **Exhibit IX-13** found issues with record retention and quality of application processing, as described below:¹⁰⁷
 - NYSEG
 - EAP applications were provided for 69 percent of enrollments.
 - For EAP applications provided, the application was not signed for two enrollments.

¹⁰⁷ DR 600 and DR 757.

- For one account with missing documentation, NYSEG states the application and documentation were not received, but the customer advocate verbally verified the customer was on SSI.¹⁰⁸

- RG&E

- The EAP application was provided for 71 percent of enrollments.
- For EAP applications provided, the applications were all signed.
- Proof of Medicaid was not provided for one enrollment. New York State Health Essential Health Plan enrollment was provided instead – which is not on the list of qualifying documentation.
- Letter from public housing is not dated for one enrollment.

15. In 2022, Avangrid’s reported spend on Energy Affordability and Seasonal Communications was significantly lower than planned. Additionally, several unplanned outreach methods for Energy Efficiency resulted in significant overspend.

- NYSEG and RG&E are required to file annual outreach and education plans with the DPS Office of Consumer Services each spring. These reports include prior year budget-versus-actuals and current year planned spending and activities.¹⁰⁹
- For 2022 budget-versus-actuals, NorthStar performed an in-depth review to compare reported versus planned initiatives and spend to determine alignment. **Exhibit IX-14** shows each initiative category and planned delivery method versus actual for 2022. The reported information shows the spend for Energy Efficiency is more than double of what was planned, and planned methods of communication changed from Bill Inserts to multi-channel. In addition, the budget for Energy Affordability and Seasonal Communications was significantly underspent.

Exhibit IX-14
NYSEG and RG&E Outreach and Education Annual Report
Planned Methods vs Reported Methods

Initiative Category	2022 Planned Methods	2022 Reported Methods	2022 Planned Spend	2022 Reported Spend
Customer Service	• Direct Mail (envelope, teasers, mailings) • Email (affordability, seasonal, service related, other) • Newsletters (EnergyLines, bill inserts) • Other (on hold messages)	• Direct Mail (envelope, teasers, mailings) • Email (affordability, seasonal, service related, other) • Newsletters (EnergyLines, bill inserts) • Other (on hold messages)	\$421,671	\$615,350

¹⁰⁸ DR 600.

¹⁰⁹ DR 351.

Initiative Category	2022 Planned Methods	2022 Reported Methods	2022 Planned Spend	2022 Reported Spend
Energy Affordability	• Brochures / Flyers • Direct mail • Other (Outbound Calls, subscriptions, seminars)	• Brochures / Flyers • Direct mail • Other (Outbound Calls, subscriptions, seminars)	\$50,251	\$14,170 28% of planned spend
Energy Efficiency	• Bill Inserts	• Bill Inserts • Brochures / Flyers • Direct mail • Email • Web and Digital Media • Other	\$200,000	\$457,518 229% of planned spend
Seasonal Communications	• Other (Outbound calling)	• Other (not defined)	\$75,000	\$6,271 8% of planned spend
Service-Related Communications	• Bill Inserts • Direct Mail • Media • Web and digital media • Other	• Bill Inserts • Direct Mail • Media • Web and digital media • Other	\$725,660	\$730,015
Other Communications	• Brochures / Flyers • Direct mail • Media	• Direct mail • Media	\$101,362	\$92,112
Outreach Events	• No Outreach amounts in submission	• Spend not defined	\$0	\$39,976
	2022 Total:		\$1,573,944	\$1,955,414
		Energy Affordability and Seasonal Communications	\$125,251 or 8% of budget	\$20,441 or 1% of spend
		Energy Efficiency	\$200,000 or 13% of budget	\$459,518 or 23% of spend

Note 1: Majority of spend planned for this method.

Source: Case 17-M-0475 (2024 NYSEG and RG&E Outreach and Education Plan 2024)

16. SAP transaction detail for outreach and education spending supported amounts reported in the annual Outreach and Education Plan. However, the annual reporting process is very manual.

- NorthStar requested SAP detail to support outreach and education spend. Avangrid provided three SAP data extracts to support actual spend by the following groupings:
 - Customer service, service-related.¹¹⁰
 - Energy affordability, seasonal communications and outreach events.¹¹¹

¹¹⁰ DR 626 Attachment 1.

¹¹¹ DR 626 Attachment 2.

- Energy efficiency and outreach events.¹¹²
- **Exhibit IX-15** shows both planned and reported spend for Outreach and Education, as submitted to DPS for 2021-2023, compared to Avangrid SAP data.

Exhibit IX-15
NYSEG and RG&E Customer Education and Outreach
2021 to 2023 Reported Plan vs Reported Actuals vs SAP Actuals (\$)

Category	Annual Submission Planned Spend	Annual Submission Reported Actual Spend	Total SAP [Note 1]	\$ Diff Reported Spend vs SAP	% Diff Reported Spend vs SAP
NYSEG					
2021	\$1,471,625	\$1,097,577	\$1,081,116	(\$16,461)	1%
2022	\$1,095,801	\$1,327,447	\$1,317,534	(\$9,913)	1%
2023	\$1,565,558	\$1,381,381	\$1,393,297	\$11,916	-1%
RG&E					
2021	\$835,416	\$499,203	\$500,797	\$1,594	0%
2022	\$478,461	\$627,956	\$613,957	(\$13,999)	2%
2023	\$713,583	\$585,467	\$597,597	\$12,130	-2%

Note 1: Amounts represent combined data from all three SAP extracts provided.

Source: DR 351 Attachment 1 (pg. 114, 219), Case 17-M-0475 2024 Outreach & Education Plan, DR 626 Supp Attachment 1.

- SAP extracts supported reported spend amounts within a small variance.. NorthStar did not perform transaction testing to make any further conclusions.¹¹³
- The annual reporting process is completed manually outside of SAP to identify applicable transactions for reporting purposes. Overall quality of response indicates that Avangrid has difficulty reporting spend for Outreach and Education.¹¹⁴
- For their 2024 Outreach and Education plan submission, NYSEG and RG&E changed the presentation of budget and spend compared to prior years to conform to DPS's template. Notable changes include the following:¹¹⁵
 - 2023's filed Outreach and Education plan reported on seven initiative categories: Customer Service, Energy Affordability, Energy Efficiency, Seasonal Communications, Service-Related Communications, Other Communications, Outreach Events. The plan also outlined planned methods of spend in the following areas: bill inserts, brochures/flyers, direct mail, educational videos, email, media, newsletters, web and digital media, and other.
 - 2024's filed Outreach and Education plan eliminated initiative-category spend, as well as planned methods of spend. The 2024 plan also aggregated reporting into three high-level categories: outreach events, outreach materials and outreach methods.

¹¹² DR 626 Attachment 3.

¹¹³ DR 351 Supp2 Attachment 1-3

¹¹⁴ DR 626 Attachment 1-3.

¹¹⁵ DR 265, Case 17-M-0475.

- 2024's prior year actuals were also presented in the report, with the new groupings, and not in alignment with 2023's planned spend – impacting transparency and comparisons between planned versus actual.

17. Avangrid primarily uses traditional outreach methods for customer outreach and education. Efforts associated with campaign tracking are evident. Avangrid shows limited use of social media to promote low-income programs.

- Avangrid's primary means of communication for customer education and outreach include the following:
 - Energy Lines Newsletter – Monthly newsletter provided as a bill insert for customers who receive a paper bill and as a website link for e-bills. NorthStar's review of the newsletter confirms a mix of topics discussed each month, highlighting customer tools and alerts, safety, AMI, energy efficiency, rebates, HEAP, EAP, project share, COVID-19 bill relief, budget billing and mobile app enrollment. However, the EAP description does not define eligibility or refer to an application, whereas HEAP does.
 - Bill Messages – Include verbiage for online calculator to compare ESCO and utility cost of supply.
 - Hold Messages – Referring customers to website for free tools to help understand energy usage and reduce costs.
 - Email Campaigns – Examples of 14 email campaigns for both NYSEG and RG&E were provided for campaigns between 2021 and 2023.¹¹⁶
- NorthStar requested examples of campaign tracking and analytics, and results were provided for three targeted email campaigns and results were Email campaign results showed sends varying from 818 customers to 82,472 customers, while open rates ranged from 45 percent to 64 percent and click through rates ranged from 2 percent to 12 percent.¹¹⁷
- A review of 2023 social media efforts indicates that the utilities use Facebook and "X" to communicate with customers. However, few posts address topics such as EAP and HEAP.

18. Reported Outreach Events indicate that NYSEG and RG&E participate in a broad mix of activities, but material distribution and outreach impact are not tracked. Some Outreach Events resemble corporate relations activities.

- A review of Outreach and Education events indicates a broad range of activities classified as outreach.
- NorthStar's review of reported annual outreach events (566 events) between 2021 and 2023 indicates that NYSEG and RG&E participated in a broad range of activities. These include DSS presentations, networking meetings, county official meetings,

¹¹⁶ DR 350 Attachment 10, 14-16.

¹¹⁷ DR 355 Attachment Supp 1-8

festivals, community meetings, community events, job fairs, etc., with a wide range of target audiences, such as seniors, town committees, the general public, students, low-income customers, community members, human services organizations, etc.

- Within the annual report, the required utility outreach event schedule does not include defined content requirements beyond date, event, location, sponsored by, and target audience. Overall, outreach events are sparsely described – they typically do not state what content/material was provided, what educational topics were explored, or how many customers were engaged or given information. Such information should be captured by Avangrid. The DPS template should not serve as a limitation to what the utility tracks.
- **2021 Outreach Events:**
 - One hundred twelve events were reported. Twenty-three events indicate the customer as the target audience, and six name the general public as the target audience. Events descriptions are brief and do not explicitly state what was presented to the customer. Examples of customer events include health fairs, Humana at the Ross Park Zoo, county baby showers and fire district open houses. Meetings between employees and human services organizations, as well as other government meetings, are captured as events.¹¹⁸
- **2022 Outreach Events:**
 - One hundred fifty-two events were reported. Thirty-one events were coded as customer events. Seventeen are NYSEG AND RG&E events related to AMI communication.
 - The majority of events were county agency networking meetings.
 - Thirty-five meetings were virtual.
 - Meetings with government officials, councils, career fairs and job fairs resemble corporate relations activities.
- **2023 Outreach Events:**
 - Three hundred two events were reported, such as community events, meetings, food banks, etc.
 - Fifty-seven events did not specify a target audience.
 - Fifty-six events were coded as related to energy efficiency, 25 of which were energy kit distribution events.
 - Thirty events were municipal or county meetings.
 - Meetings with government officials, councils, employee fairs, job fairs and virtual town halls resemble corporate relations activities.

¹¹⁸ DR 351.

19. Avangrid's CSPI metric reports created on behalf of NYSEG and RG&E are inaccurate and there are issues with the underlying model used to calculate the metrics reported to the NYSPSC. NYSEG's and RG&E's monthly CSPI metric workpapers feature modeling errors, unsubstantiated adjustments and ineffective quality controls. The measure of percent of Adjusted Bills is misleading, as it doesn't include bills withheld from issuance.

- Customer Service Performance Index metrics (CSPI) are required to be filed by regulated New York utilities. These metrics consist of the following: Appointments Made/Kept, Adjusted Bills, Telephone Answer Response, Estimated Bills, and Customer Satisfaction. NorthStar selected two months (June and December 2022) of reported metrics to compare with Avangrid's raw data, process and procedures. NorthStar also compared metrics to DPS Office of Consumer Services (OCS) definition guidance for metric calculations.¹¹⁹ All raw data provided was referenced as original, saved and not re-run data.¹²⁰
- NorthStar's review found issues with the model, unsubstantiated count adjustments, and customer bill delays that are not conveyed in the reporting:
- **CSPI Metric – Appointments Made / Appointments Kept:** OCS defines an appointment as a scheduled meeting between a utility and a customer, in which a date, time or time frame is agreed upon by both parties. The measure only applies to appointments where the customer (or their representative) is required to be present to provide access. For metric purposes, appointments are considered missed if the utility appointment window has passed, regardless of whether the utility completed the work.
 - **Appointments Made:**
 - NYSEG's June 2022 workpapers include unpopulated cell formulas, as well as hard-coded results in cells that cause misidentification of appointment entries.¹²¹
 - NYSEG's December 2022 workpapers show cell formula ranges missing lines of data.¹²²
 - **Appointments Kept:**
 - The Appointments Kept count is impacted by unpopulated cell formulas in the metric workpaper.
 - For adjustments made to the Appointment Kept count, NYSEG's June 2022 workpaper does not provide sufficient explanation for adding 63 additional Appointments Kept (144+63=207 reported). Ad hoc documentation was provided to support the reclassification of 9 additional appointments.¹²³

¹¹⁹ DR 270, DR 349, DR 631, Case 15-M-0566 Customer Service Metrics Manual (Rev February 22, 2017).

¹²⁰ DR 349.

¹²¹ DR 631 Attachment 2.

¹²² DR 631 Attachment 3.

¹²³ Fact Verification IX 41, 960-961

- Neither NYSEG nor RG&E provided sufficient evidence to support the fact that appointments reclassified from missed to kept met the OCS definition of kept.¹²⁴
- **CSPI Metric - Adjusted Bills:** OCS defines an Adjusted Bill as a second or subsequent bill a utility renders to a customer to correct an initial bill issued for the same billing period.¹²⁵ Based on this definition, any time a bill is re-issued for the same billing period, it qualifies as a bill adjustment.
 - If bills are not issued in a timely manner, held until further review and then corrected, these bill counts are not reported within this metric and no other metric captures delay in bill issuance.
 - Avangrid uses system logic to prevent customer bills from being issued until further review occurs. This may result in a significant delay – and because bill-delay is not a CSPI metric, DPS does not have visibility to this fact.
 - Billing delays may be attributable to a number factors. For example, constraints caused by customer service workforce shortages and increased volume of bills that require manual intervention by an employee or contractor, such as CDG billing. A review of CDG billing in **Exhibit IX-16** indicates that Avangrid does not track the number of bills issued on time, the number of bills delayed, or the total number of bills.¹²⁶

Exhibit IX-16
NYSEG and RG&E CDG Bills

Year	# Customers	# Hosts NYSEG	# Hosts RG&E	# Satellites	# Bills Issued on Time	# Bills Delayed	Total # Bills
2020	27,364	80	23	27,234	Not Tracked		
2021	37,201	114	29	37,201			
2022	54,011	127	42	54,011			
2023	63,133	137	58	63,133			

Source: DR 1006

- A customer bill will also be delayed (and not included in the metric count of “Adjusted Bills”) if the system flags it for an “implausible” read. If the implausible read was the result of an estimated bill calculation, it would be included in the Estimated Bill metric. However, if it was a result of an actual meter read, it would not. Workstream status reports show that as of the work week November 27-December 1, 2023, 21,454 reads were flagged as implausible, with some level of backlog as far back as July 2023.¹²⁷
- **CSPI Metric – Telephone Answer Response:** OCS defines total incoming calls received as all incoming calls, without exclusion. Percent of Calls Answered means all calls answered by any means (IVR, CSR etc.) divided by incoming calls. Calls entering the IVR that go to a CSR will be counted once as a CSR-answered Total

¹²⁴ DR 631 Attachment 2.

¹²⁵ CASE 24-M-0057 (June 20, 2024).

¹²⁶ DR 987, DR 1006, DR 1284.

¹²⁷ DR 1008 Attachment 1, DR 1283.

incoming calls requesting a representative which excludes calls that are abandoned before 30 seconds have lapsed.

- Total Incoming Calls Received: Avangrid defines this metric as the total number of calls received into the companies' toll-free numbers for customer service and outage.¹²⁸
 - Percent of Calls Answered: The reported Percent of Calls Answered is consistently reported as 100 percent for both utilities every month as far back as 2017.¹²⁹ The procedure document does not provide a numerator and denominator for this metric.¹³⁰ Avangrid does not use a numerator or denominator to calculate this. The number is determined as being 100 percent of the calls that enter or are answered by the IVR, which makes the reported information meaningless.
 - Total Incoming Calls requesting a representative is supported by raw data provided.
 - Percent of calls answered within 30 seconds (by a representative): Service level inputs were reconcilable to raw data. However, the reported percent calculation in the workpaper (_SVL % (NY) PSC PI), which is translated to the percent of calls answered by a rep within 30 seconds, does not calculate correctly based on populated data. It varies less than 1 percent for each utility in June 2022, but almost 3 percent in December 2022 for NYSEG, and 2 percent for RG&E.
- **CSPI Metric – Estimated Bills:** OCS defines an estimated bill as a bill based only on an estimated reading because the utility did not obtain an actual reading at a regularly scheduled time. Estimated bills exclude regularly scheduled off-month estimated readings, customer meter readings, and inactive accounts. No access is counted. Utilities are to retain data for this metric with the goal of auditability for a period of the current year and the prior two calendar years reading. Calculation is the (# of Estimated Bills / Number of Scheduled Bills) X 100.
 - Based on the definition and data points provided, NorthStar could not determine whether the estimated bill calculation is reported in alignment with DPS definitions (for exclusion criteria).
 - Small variances in counts were observed in workpaper data versus CSPI reported data.¹³¹ Ad hoc information provided to NorthStar indicates Avangrid re-filed the CSPI report to update the Estimated Bill metric values in August 2024.¹³²
 - **CSPI Metric – Customer Satisfaction**
 - The Customer Contact Satisfaction Survey percentage and quantitative data counts reported match the workpapers, but the actual satisfaction survey questions were not included in the workpapers.¹³³

¹²⁸ DR 1282.

¹²⁹ DR 270 Attachment 1.

¹³⁰ DR 631, DR 349.

¹³¹ DR 631 Attachment 1.

¹³² Fact Verification IX-43, 1023-1024

¹³³ DR 631 Attachment 1.

- Avangrid's QA/QC procedures and internal controls for customer operations data and reporting to DPS are describes as follows:

“Procedures are in place to collect results of the Service Quality Measures and report on a monthly, quarterly, and annual basis. Monthly email reminders are sent out to collect data at which time the data provider compiles all appropriate information for the report and performs a quality check to ensure data reported to senior management is accurate. Next, the metric owner (Subject Matter Expert) reviews the data and certifies to the accuracy of the documents being filed. Then the Customer Service Compliance Manager reviews reports to see if the new data appears in line with current trends at which time the document is then sent to Senior Management for approval. Once approved by Senior Management, a final Legal and Regulatory review is conducted before submission to DPS and/or the Commission. There are no planned changes at this time.”

20. Avangrid's main hiring metrics – time to hire and new hire turnover rate – do not have associated targets. Reports for Customer Operations indicate unbalanced resources between NYSEG and RG&E front office contact staffing, and a shortage of vendor resources occurs most of the time in comparison to forecasted needs.

- Avangrid utilizes the following two hiring metrics:¹³⁴
 - Time to Hire (average days): This metric is reported in aggregate on each utility at a department level by quarter, based on average number of days.
 - New Hire Turnover Rate (percentage): This metric is reported in aggregate on each utility at a department level by quarter based on percentage of hires.
 - Although requested, hiring metric targets were not provided.
- For Customer Operations, Avangrid has stated that the following reports are used to monitor staffing trends:¹³⁵
 - The Front Office Contact Center staffing report: The report is distributed monthly within Avangrid to the Customer Service Vice Presidents, the Contact Center Managers, the Vendor Management, and the Workforce Management teams. This report is used to show actual headcount in the Front Office Contact Center area as well as providing the attrition and hiring forecast.
 - Human resources provides a monthly headcount report to business area leaders. The data are used to produce a monthly view of headcount within customer service and are used to analyze trends. Monthly results are reviewed with customer service Vice Presidents and Directors reporting to them.
 - The external call center vendor staffing forecast is provided monthly. It is distributed to the Vendor Management and the Workforce Management teams within Customer Service Operations.

¹³⁴ DR 279, DR 661, DR 661 Attachment 1.

¹³⁵ DR 277

- NorthStar observations of each report are as follows:
- **The Front Office Contact Staffing Report:** Avangrid tracks NYSEG and RG&E beginning-of-year headcount, current snapshot headcount, and target headcount periodically throughout the year. As of October 2023, NYSEG’s headcount is 191 and RG&E headcount is 17, with a planned target headcount of 140 and 41, respectively. The years 2020-2022 show similar disparities, where RG&E is significantly under target and NYSEG is over.¹³⁶
- **Customer Service Headcount Report:** This report provides a monthly snapshot of headcount for NYSEG and RG&E. There is no department information indicated. The report shows monthly staff number change and year-to-date change. The report does not provide department visibility of hiring or attrition.¹³⁷
- **External Call Center Report**
 - Reported data start for the week of May 7, 2023, and combines statistics for NYSEG & RG&E as New York performance. The report also provides separate data for each utility. For example, various aggregated inbound contact volume, average handling time, headcount and attrition by work week data points are included.¹³⁸
 - The report appears to be a projected call volume by vendor handling area (Move-In / Move-Out , credit, general), with vendor headcount requirements to meet volume in each area. The results show the following:¹³⁹
 - 2021 – An annual average shortage of 89 resources (based on weekly values).
 - 2022 – An annual average shortage of 82 resources (based on weekly values).
 - 2023 – Improvement, with the first quarter showing an overage of 12, second quarter showing an overage of 33, third quarter showing a shortage of seven, and fourth quarter showing a shortage of 19.
 - The report exists as an Excel workbook with three tables that do not include vendor names or describe the purpose of the report.¹⁴⁰
 - The summary tab begins with data starting in January 2022, with Vendor SL actual updated through September 2022 only.
 - The monthly view is for 2023 data only and includes a visual that attempts to compare required headcount versus projected headcount – indicating over/under resources. However, the graph’s secondary X axis is set at a value of -150 (with incremental units of 50), which makes the comparative resource over / under differential difficult to identify.

¹³⁶ DR 277 Attachment 1

¹³⁷ DR 277 Attachment 2

¹³⁸ DR 277 Attachment 3

¹³⁹ DR 277 Attachment 4.

¹⁴⁰ DR 277 Attachment 5.

21. Avangrid has established training documents, a tracking database and email addresses to assist with data entry of scams. However, Avangrid’s tracking database has insufficient information to determine which are verified scams, indicate actions taken, and specify action taken to close out an issue with the customer.

- Avangrid has an established job aid for Scam Recognition and Reporting. However, NorthStar cannot confidently confirm the document was in use within the audit period – due to lack of version control and a document dated April 2024. The document contains useful information on examples of suspicious scenarios, with tips for advising customers. An established Avangrid internal email address has been created for internal reporting of customer-reported scams. There is no information in the job aid regarding communication with hearing-impaired customers.¹⁴¹
- Avangrid has developed a list of keywords that are to be taken into consideration by a representative during customer calls or emails that may indicate some type of system vulnerability – such as a website security error. A separate email address has been created for reporting these types of incidents.¹⁴²
 - Although a tracking sheet was provided for scams brought to NYSEG and RG&E, there is no indication in the tracking sheet whether the scam is verified and what action was taken. Avangrid has indicated that it will add these columns in September 2024.¹⁴³

22. Avangrid engages a third party to evaluate energy savings. However, evaluation reports indicate that Avangrid does not have a robust system to ensure accuracy of energy-efficiency programming and energy-savings reporting. Additionally, several vendor recommendations related to program impact and process evaluations remain unaddressed.

- Avangrid did not provide any internal documentation or evidence of program administration handbooks, internal processes, procedures or tracking of energy-efficiency program data. The sole document produced was the guidance document provided by DPS, as included in the March 15, 2018, Order (15-M-0252), CE-08: Gross Savings Verification guidance document that includes the following sections:
 - Evaluation, Measurement and Verification (EM&V) methods and approaches
 - Verified gross savings process
 - Opportunities for timely and targeted verified gross savings (VGS)¹⁴⁴
- NorthStar’s review of third-party evaluation reports indicates that Avangrid’s Energy Efficiency Programs do not have an established reporting system and use Excel

¹⁴¹ DR 667 Attachment 1.

¹⁴² DR 667 Attachment 1.

¹⁴³ DR 668.

¹⁴⁴ DR 125.

workbooks to calculate energy savings. Energy-saving calculation adjustments have been necessary because of the following types of issues:

- Data inputs.
- Measure selection / classification.¹⁴⁵
- TRM and EUL deviations.¹⁴⁶
- Mischaracterization of participating properties.¹⁴⁷
- Appliances not in use at time of recycling.¹⁴⁸

Third-party reports have provided several impact and process evaluation recommendations, many of which have not yet been implemented.

D. RECOMMENDATIONS

1. Perform in-depth analysis to cross reference NYCRR Part 11 and 13 regulations with built-in system controls and manual processes required for compliance with each customer service rule. Exception reports should be created to ensure controls are sufficient.
2. Implement the following as related to compliance assessment findings for 16 NYCRR Part 11 and 13:
 - 2.1. Create metric to monitor Timing of Service non-compliance instances.
 - 2.2. Include actual payment due date on customer bills.
 - 2.3. Provide training and updated materials related to security-deposit requirements and reasonable proof of identify.
 - 2.4. Allow for negotiation of Deferred Payment Agreements (DPAs) to ensure fair and equitable consideration of the customer's financial circumstances.
 - 2.5. Mail the Annual Notification of Rights to every customer
3. Implement version control for process and procedure/training documents, including but not limited to, description of content changed, date content changed, required update frequency, content author, reviewer and approver.
4. Eliminate bi-monthly meter readings and complete universal AMI implementation. Until then, offer to move customers complaining of bill estimates to a levelized payment plan.
5. Develop quarterly report of shared-meter investigations, including status and pending issues for upper management. Include milestones of investigations.

¹⁴⁵ DR 1103 Attachment 4.

¹⁴⁶ DR 1103 Attachment 3.

¹⁴⁷ DR 1103 Attachment 3.

¹⁴⁸ DR 1103 Attachment 10.

6. Develop database of shared-meter investigations including customer information, date of complaint, date of investigation, resulting actions and dates, and record locator.
7. Maintain shared-meter investigation records for a minimum of five years.
8. Include additional information on letters sent to customers about rate changes.
 - 8.1. Current rate schedule – NYSEG only
 - 8.2. Requirements of current rate schedule – NYSEG only
 - 8.3. Detailed reason for change (e.g., the demand on your facility was 512 kW, exceeding 500 kW twice in the past 12 months) – both RG&E and NYSEG.
 - 8.4. Requirements of new rate schedule – NYSEG only
9. Provide more visibility on the utilities' websites for time-of-use rate options.
10. Determine drivers of substantial increase in Call Center costs between 2018 and 2023. Ensure costs are directly attributable to NYSEG and RG&E.
11. Formally communicate to DPS any planned changes to business operations that result in consolidation or situations where outsourcing of utility work is done.
12. Implement formal contract management to ensure such things as agreement-number assignments, change-order numbering, and monitoring of contract values in comparison to invoiced amounts.
13. Unsupported expenses such as Customer Operations charges that cannot be substantiated by invoices and proven to be directly attributable to services for NYSEG and RG&E, should be classified as “below the line” and paid by shareholders.
14. Improve QRS and SRS case file documentation. Include a minimum of the following:
 - 14.1. Usage and billing history.
 - 14.2. Customer communication log.
 - 14.3. Root cause assessment.
 - 14.4. Proof of feedback sent to responsible department.
 - 14.5. Copy of customer letter for case closeout.
15. Create KPIs to track and monitor the following:
 - 15.1. First Call resolution
 - 15.2. Delayed bills.

- 15.3. Commitments to follow-up with customers on issues when call-back is promised.
- 16. Create a formal invoice review process and ensure this review process includes, but is not limited to the following:
 - 16.1. Invoices received and added to transaction record.
 - 16.2. Invoice contains appropriate line-item information.
 - 16.3. Invoice aligns with invoiceable items, per contract, and item amounts match.
 - 16.4. Cost allocations are justified, and methodology is within transaction record. Also ensure that charges to NYSEG and RG&E can be directed supported, and that each budget owner has approved.
 - 16.5. Transaction record indicates all budget owners have approved cost allocations.
 - 16.6. Transaction is recorded correctly.
- 17. Several areas of deficiency were noted in the Low-Income Program area:
 - 17.1. Create a comprehensive Program Manual to include end-to-end program management. Include a minimum of the following:
 - 17.1.1. Stakeholders.
 - 17.1.2. Applicable tariffs.
 - 17.1.3. Proof of eligibility requirements.
 - 17.1.4. Process and procedure documentation.
 - 17.1.5. Program goals and KPIs.
 - 17.1.6. Program budget by admin, marketing/outreach and implementation.
 - 17.1.7. OTDA file-matching cadence.
 - 17.1.8. Tier discounts – maintenance of Tier discounts.
 - 17.1.9. EAP form – English and other languages.
 - 17.1.10. EAP letters – English and other languages.
 - 17.1.11. Marketing and Outreach collateral – English and other languages.
 - 17.1.12. Marketing and Outreach Strategy.
 - 17.1.13. Community Based Organization partners.

- 17.1.14. List of reports with samples.
- 17.1.15. Training material locations.
- 17.1.16. Quality audit report locations.
- 17.2. Update Tariffs as noted in chapter.
- 17.3. Implement monthly quality review process.
- 18. Provide supplemental data on the monthly CSPI report to DPS to include the number of bills not yet issued, number of bills issued late, number of days bills delayed by situation category (i.e. implausible, CDG Bill, etc.). In addition, each month indicates the number of accounts where consecutive bills were delayed including the number of consecutive months.
- 19. Perform further financial review of Marketing and Outreach transactions to determine if costs are attributable to NYSEG and RG&E – and to define extent of corporate marketing transactions included in reporting. Eliminate corporate marketing costs in Outreach and Education and costs that are not directly attributable to NYSEG and RG&E.
- 20. Update CSPI process documentation to define how percentage of calls answered is calculated and retain numerator and denominator values in workpapers.
- 21. Create formal override process to allow proper authority to approve adjustments made to CSPI metrics with appropriate supporting information on why it meets OCS definition and reason raw data reflected a different outcome.
- 22. Ensure CSPI report model calculates all data in all cells, make sure quality checks are evident, review, document and certify all metric adjustments, and re-file CSPI metrics.
- 23. Develop narrative of observations/actions to accompany staffing reports.
- 24. Continue to make improvements to scam-tracking database to allow for reporting of scam types, amounts, verified scams, completed actions, and customer contact for closeout.
- 25. Implement quality review and controls to ensure accuracy of Energy Efficiency data.
- 26. Create implementation plan for all vendor recommendations to improve Energy Efficiency programs and data.

X. PHYSICAL AND CYBERSECURITY

This chapter provides NorthStar’s assessment of Avangrid’s physical and cybersecurity programs and practices, performed on behalf of NYSEG and RG&E. This review focuses on critical energy infrastructure, customer privacy, disaster recovery planning, business continuity and event-response activities.

A. BACKGROUND

Physical and cybersecurity remain significant risk areas and a challenge for utilities. Bad actors targeting the U.S. electrical grid have caused significant damage to facilities, financial losses to operators, and disruptions to customer service and emergency response. According to the U.S. Department of Energy, 163 attacks and instances of suspicious activity were reported at U.S. utility facilities in 2022, including substations in Florida, North Carolina, South Carolina, Oregon and Washington (Duke Energy, Puget Sound Energy and other utilities).¹ Recent substation attacks around the country have raised concerns about grid vulnerabilities that lead to outages and other service interruptions. According to news reports, the nation’s power providers reported 185 instances of mostly physical attacks or threats against critical grid infrastructure in 2023, beating the previous record number of reports from 2022 and doubling the number of incidents in 2021.²

Cybersecurity concerns include privacy violations, data breaches, ransomware, denial of service and critical infrastructure attacks. Security risks facing utilities have never been higher, requiring robust security programs for the benefit of both the utility and its customers. In recent years, U.S. utilities have suffered from successful critical infrastructure attacks in the gas (Colonial Pipeline) and electric (Duke Energy) sectors. In addition, ransomware incidents increased 84 percent in 2023.³ Overall, the energy sector was the fourth-most-targeted sector last year, accounting for 10.7 percent of all cyberattacks.⁴ A U.S. Department of Homeland Security report published in 2024 warned that state and non-state cyber actors continue to seek opportunistic access to critical infrastructure sector targets for disruptive and destructive attacks.⁵ In 2021, the North American Electric Reliability Corporation’s (NERC) Critical Infrastructure Protection (CIP) compliance maximum fines were approximately \$1.3 million per incident per day.⁶

¹ https://www.oe.netl.doe.gov/OE417_annual_summary.aspx. Accessed May 2024.

² <https://www.eenews.net/articles/tensions-at-home-and-abroad-pose-growing-threat-to-us-grid/>. Accessed May 2024.

³ <https://www.nccgroup.com/us/newsroom/annual-ransomware-attacks-increased-by-84-in-2023/#:~:text=Annual%20ransomware%20attacks%20increased%20by,targeted%20sectors%20for%20the%20year>. Accessed September 23, 2024.

⁴ <https://www.resecurity.com/blog/article/ransomware-attacks-against-the-energy-sector-on-the-rise-nuclear-and-oil-gas-are-major-targets-2024>. Accessed September 23, 2024.

⁵ www.dhs.gov/sites/default/files/2023-09/23_0913_ia_23-333-ia_u_homeland-threat-assessment-2024_508C_V6_13Sep23.pdf. Accessed September 23, 2024.

⁶ As of 2020, the maximum civil monetary sanction set forth in 18 CFR § 385.1602(d) is \$1,291,894 per violation, per day. NERC Sanction Guidelines App 4B. Also, see

Avangrid's Reliability Assurance group oversees compliance with NERC CIP on behalf of NYSEG and RG&E. While this group provides oversight, Avangrid's day-to-day NERC CIP compliance activities are distributed to different organizations responsible for different Bulk Electric System (BES) facilities. NYSEG and RG&E have approximately 200 BES facilities, of which 32 are rated high or medium impact.⁷ There are a significant number of BES Cyber Assets within high or medium impact rated facilities.⁸ Avangrid's decentralized approach delegates NERC CIP compliance responsibilities to over 10 business areas, approximately 40 SMEs and other personnel.⁹ This decentralized approach requires significant governance, coordination and communication, as well as strong adherence to procedures for evidence-collection for NERC CIP audits and other compliance activities.

There were changes to the oversight and governance of the Avangrid NERC compliance program between December 2022 and November 2023. NERC CIP compliance is administered under the Networks Operations organization lead by the Vice President of Reliability Assurance and Emergency Preparedness.¹⁰ There are Standard Owners that represent Business Area Leaders at the executive level with overall responsibility and accountability for compliance with NERC standards. Standard Owners are the Business Area Leaders at the executive level with overall responsibility and accountability for compliance with NERC Standards. The Avangrid Networks Leadership represents senior management at Avangrid Networks. The leadership group has monthly meetings with the Standard Owners to discuss compliance activities.¹¹ Prior to November 2023, the Avangrid Networks Leadership Committee (ANLC) represented senior management. Also prior to November 2023, The Director Reliability Assurance Committee (DRAC) existed and comprised of business area directors with responsibility for implementation and oversight of NERC Reliability Standards and directors representing Corporate Compliance, Risk Management and Internal Audit. Meetings were chaired and facilitated by the Vice President (VP) – Reliability Assurance and Emergency Preparedness or a DRAC member business-area lead (i.e., VP).¹²

Other committees involved in NERC CIP include the following:

- Information Technology (IT) Change Advisory Board (both CIP and Non-CIP) – reviews all major change tickets to IT infrastructure.
- Operational Smart Grids (OSG) Change Advisory Board – reviews major change tickets to the OSG-managed secure, private network and OSG telecom network on a weekly basis.
- System Process Request Advisory Committee (SPRAC) – Reviews all OSG compliance-related tickets on a weekly basis to track routine compliance work.¹³

<https://spectrumlocalnews.com/nc/charlotte/news/2023/01/17/another-substation-shot-up-in-n-c---power-company-says>, Accessed September 23, 2024.

⁷ DR 332 Attachment 1.

⁸ DR 332 Attachment 2.

⁹ DR 565 Attachment 1.

¹⁰ DR 34 Supplement 1 Attachment 3.

¹¹ Fact Verification

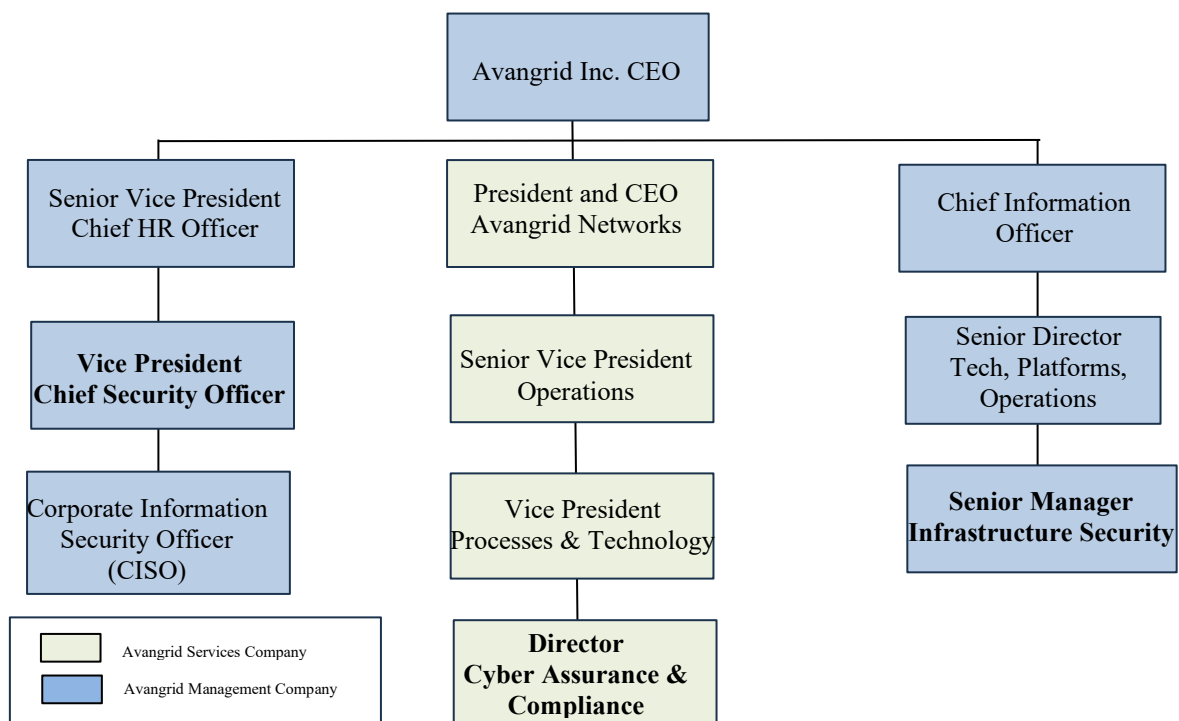
¹² DR 34 Attachment 1 and 34 Supplement 1 Attachment 3.

¹³ DR 563.

Avangrid policies and procedures guide compliance with NERC CIP requirements for its operating companies, including NYSEG and RG&E. NYSEG and RG&E have been audited by the Northeast Power Coordinating Council (NPCC) on different cycles due to their NERC classification. RG&E is classified as a Transmission Owner and is audited by the NPCC every four to six years, whereas NYSEG is classified as a Transmission Operator and is audited by the NPCC every three years.¹⁴

At Avangrid, each business and corporate area is responsible for managing cybersecurity risks affecting their activities, assets, systems, information, data and reliability of services provided. This is accomplished under the governance, coordination and supervision of the Avangrid Corporate Security organization through the Chief Security Officer (CSO).¹⁵ In addition to Corporate Security, Avangrid’s cybersecurity function is distributed between two other departments – Avangrid Networks’ Cyber Assurance & Compliance, and the Avangrid Inc. IT organization’s Infrastructure Security group. The Avangrid organization structure for cybersecurity is shown in **Exhibit X-1**.¹⁶

Exhibit X-1
Avangrid Cybersecurity Organization Structure



Source: DR 33 Supplement 1 Attachments 2 and 3.

- Avangrid’s cybersecurity oversight of the IT environment is the responsibility of Corporate Security’s cybersecurity team. This team is led by the CISO. The Cyber Security team is responsible for developing and maintaining a security-in-depth

¹⁴ DR 38.

¹⁵ DR 33 Supplement 1 Attachment 2.

¹⁶ Titles in **BOLD** font are cybersecurity functions.

strategy, security event management, computer security incident response, monthly and quarterly vulnerability assessments, penetration testing and cyber support – including projects, architecture reviews, audits, policy, exception management and investigations.¹⁷

- Cyber Assurance & Compliance (CA&C) is responsible for cybersecurity oversight of the Operational Technology (OT) environment, led by the Director of CA&C. CA&C is composed of cyber architecture, cyber detection and response, cyber governance and risk management, cyber operations and digital identities, the cyber program office, cyber relations, and cyber recovery.¹⁸ The CA&C group collaborates with Avangrid's Corporate Security team in detecting, identifying and responding to cybersecurity threats, vulnerabilities and incidents. Avangrid's risks are derived from the activities it performs, which, in some cases, are supported by applications and systems managed by Avangrid's IT organization. In cases where such a dependent relationship exists, Avangrid will establish cybersecurity requirements that IT must meet in order to provide required services.¹⁹
- Infrastructure Security is a group within the Avangrid IT function, led by a Senior Manager. Infrastructure Security is responsible for monitoring network DMZs and security zones created for isolation and segmentation. Network segmentation is handled through a combination of equipment, including firewalls, load balancers, network switches and routers. The group uses different technologies and toolsets to segment and isolate traffic based on functional areas requiring primary and redundant hardware in multiple data centers.

Avangrid's alignment with the National Institute of Standards and Technology (NIST) Cybersecurity Framework (CSF) and other cybersecurity practices began as part of Iberdrola's global cybersecurity reassessment initiative in 2020. The CSF was developed by NIST and is a voluntary set of standards, guidelines and best practices to manage cybersecurity risk. NIST is a part of the U.S. Department of Commerce, with a mission to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards and technology to enhance economic security and improve quality of life.²⁰ NIST CSF is summarized in **Exhibit X-2**.

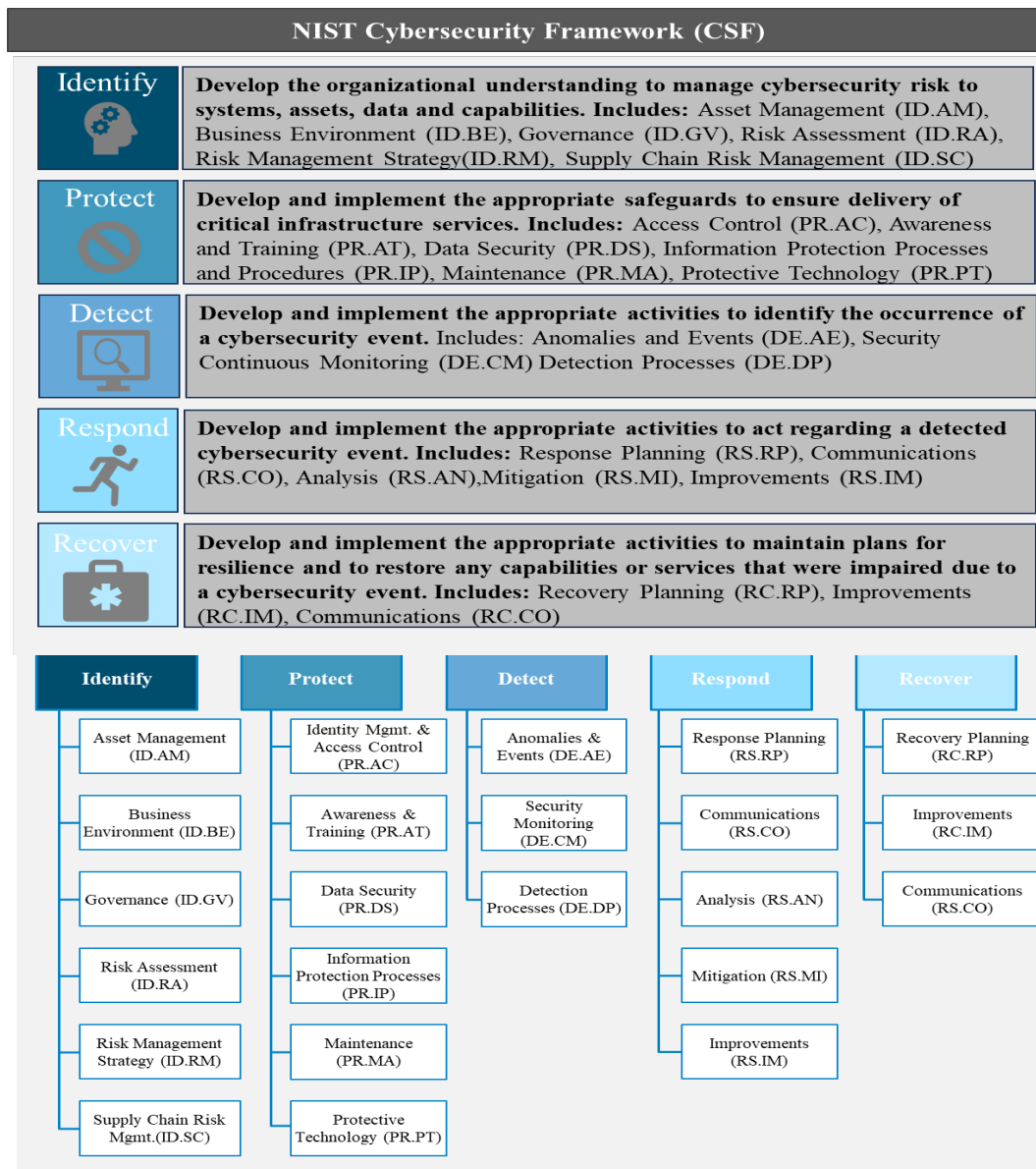
¹⁷ DR 586.

¹⁸ DR 586.

¹⁹ DR 583 Attachment 1.

²⁰ www.nist.gov.

Exhibit X-2 NIST CSF Standards (v.1.1)



Source: <https://www.nist.gov/cyberframework/framework>. Accessed March 14, 2024.

Avangrid's program maturity rating goal is to achieve and maintain a Tier 3.0-plus for the NIST CSF.²¹ NIST CSF Tier Maturity Ratings range from Partial (Tier 1) to Adaptive (Tier 4), as shown in **Exhibit X-3**. Tiers describe an increasing degree of rigor, how integrated cybersecurity risk decisions are within broader risk decisions, and the degree to which the organization shares with and receives cybersecurity information from external parties.²²

²¹ DR 26 Supplement 1.

²² <https://www.nist.gov/cyberframework/online-learning/cyber-security-framework-components>.

Exhibit X-3

NIST CSF Tier Maturity Ratings

NIST CSF Maturity Rating	
	1 <u>Partial Tier</u> Processes are performed and managed but are not consistent throughout the company.
	2 <u>Risk-Informed</u> Processes are managed and performed in a consistent manner throughout the company.
	3 <u>Repeatable</u> Processes are consistently managed and quantitatively measured for performance consistency.
	4 <u>Adaptive</u> Process improvement is routinely incorporated to make the process more effective as a standard operating procedure.

Source: <https://www.nist.gov/cyberframework/online-learning/cyber-security-framework-components#tiers>. Accessed March 14, 2024.

Both NYSEG and RG&E have systems containing personally identifiable information (PII). In August 2013, the NYSPSC issued an Order in Case 13-M-0178 that accepted nine DPS staff recommendations addressing protection of customer PII, as follows:

- Planning for possible network breach and compromise of personally identifiable customer information includes specific post-incident response and recovery drills.
- Improve inventory control of customer information.
- Upgrade physical security measures for protection of critical cyber equipment and to limit unauthorized physical access to that equipment.
- Improve segregation of personally identifiable customer information from less sensitive business data.
- Upgrade technical security controls by procuring and deploying next-generation intrusion-detection systems and security information event-management solutions.
- Conduct regular third-party vulnerability assessments of protections for sensitive customer information.
- Conduct frequent customer privacy-related security training for both employees and contractors.
- Establish a contractual relationship with a third-party forensic firm.
- Establish a contractual relationship with a credit monitoring service.

The Order in 13-M-0178 recognized that a compromise of customer data resulting from a cyber-intrusion remains a possibility in spite of robust defenses – and New York utilities must prepare for such contingency.²³

²³ CASE 13-M-0178 - In the Matter of a Comprehensive Review of Security for the Protection of Personally Identifiable Customer Information, Order, Issued and Effective August 19, 2013.

B. AUDIT SCOPE ITEMS

- Assess how the Companies protect critical energy infrastructure, including assets, sites, and physical and virtual systems.
- Evaluate how the Companies protect customer privacy, including but not limited to electrical and gas consumption data, and examine any cyber security/information security systems and procedures protecting customer personally identifiable information.
- Evaluate existing disaster recovery and security incident response plans and how the Companies test these plans.
- Assess the adequacy of the Companies' Comprehensive Security Plan.
- Evaluate the Companies' processes for compliance with State and Federal security event notification requirements.
- Evaluate the Companies' process for hiring senior security staff, including, but not limited to, onboarding staff, communicating expectations and responsibilities for roles, and reporting personnel changes to the Department.

C. FINDINGS AND CONCLUSIONS

1. **Avangrid's cybersecurity programs are evolving. Despite significant cost increases, Avangrid's cybersecurity program has not made progress toward achieving its NIST CSF Tier goal since initiation of an improvement plan in 2020.**²⁴

- A NIST CSF assessment of Avangrid's OT and IT environment was performed by a third party in 2020. Avangrid IT and Avangrid OT NIST CSF scores were largely below industry average.²⁵ Avangrid plans to update its NIST CSF IT environment score in 2024.²⁶
- Avangrid's Cybersecurity Master Plan (CSMP) goal is to achieve and maintain a NIST CSF Tier 3.0-plus rating for its OT environment.²⁷ Avangrid's timeline and cost estimate to achieve this goal have evolved since 2020.
 - The March 2020 assessment predicted NIST CSF Tier 3.0 by 2023.²⁸ However, a March 2023 NIST CSF re-assessment estimated attainment of Tier 3.0 by Q4 2024.²⁹

²⁴ Due to Avangrid confidentiality concerns, detailed information was removed.

²⁵ Due to Avangrid confidentiality concerns, detailed information was removed.

²⁶ DRs 348 348 Attachment 1, 33 Attachment 1.

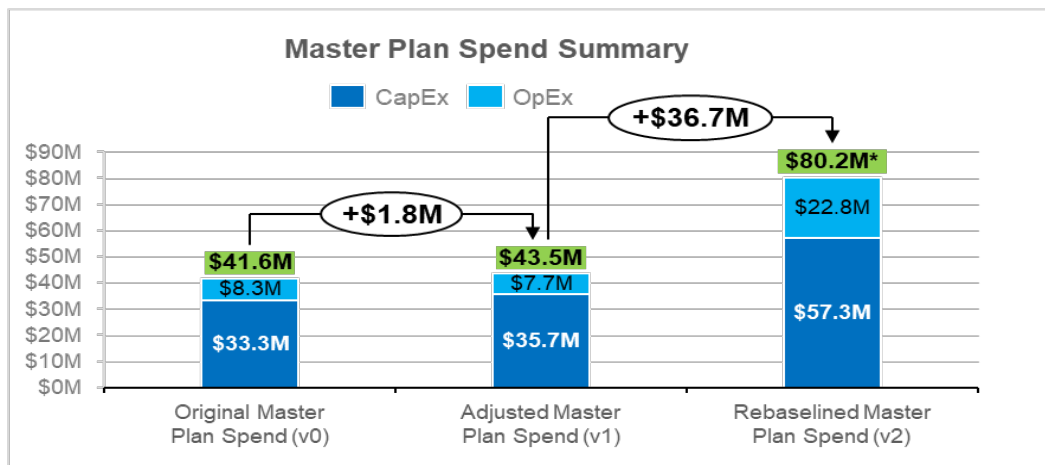
²⁷ DR 26 Supplement 1.

²⁸ DR 33 Attachment 1.

²⁹ DR 347 Supplement 1 Attachment 2.

- The March 2020 assessment estimated costs to achieve Tier 3.0 by 2023 at \$17.1M. But by the March 2023 re-assessment, that estimate increased over 225 percent to a range of \$56.0M to \$66.7M.³⁰
- Avangrid Networks' Cybersecurity Committee Meeting in Q3 2023 indicated a re-baselined spend of \$80.2M and NIST CSF Tier 3.0 achievement by 2026 or 2027 (**Exhibit X-4**).³¹ A February 2024 Avangrid Audit & Compliance Committee report to Chairman of the Avangrid Networks Board of Directors stated the CSMP could extend into 2027 or 2028 based on current funding.³²
- Avangrid's OT NIST CSF rating increased from 1.9 in March 2020 to 2.1 at year end 2022, as noted in the March 2023 re-assessment. As of December 2023, Avangrid's OT NIST CSF overall score remained at 2.1, demonstrating little movement from the March 2023 re-assessment report.³³

Exhibit X-4
Evolution of Avangrid Networks Cybersecurity Master Plan Spend

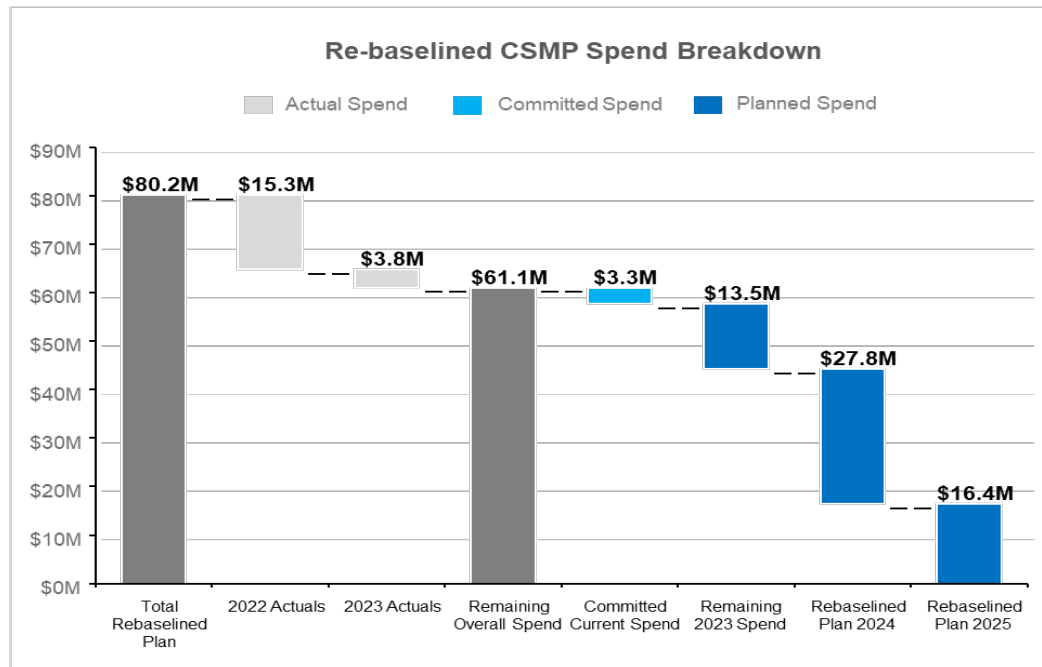


³⁰ DR 33 Attachment 1, DR 347 Supplemental 1 Attachment 1 and Attachment 2. The March 2023 estimate includes \$10.0M of Completed/In-progress/Budget Allocated funds.

³¹ DR 579 Attachment 17.

³² DRs 15 Supplement 1 Attachment 6, Supplement 1 Attachment 20.

³³ DR 579 Attachment 18. Due to Avangrid confidentiality concerns, a table depicting lack of progress in NIST CSF scores from March 2020 to year end 2023 was removed.



Source: DR 579 Attachment 17.

- Avangrid does not have a device inventory for its OT network.³⁴
- During an Avangrid Risk Update in April 2021, it was stated that the cybersecurity threat landscape and risk exposure to critical infrastructure was rapidly changing with the introduction of automation and mandated third-party interconnections. These risks to critical infrastructure can negatively impact system reliability, reputation, and financials.³⁵ A benchmark analysis was performed assessing the company's grid modernization cybersecurity practices. The analysis identified a number of deficiencies.³⁶
- Issues due to CSMP delays and changes include the following:
 - The ability for Avangrid to monitor anomalous activity within the operating environment may be delayed due to shifting security-monitoring initiatives.
 - The ability to enumerate the operating environment network, remove unnecessary connections and implement NIST-recommended "zero-trust" architecture also will be delayed due to a shift in network-segmentation initiatives.
 - Detailed review of disaster recovery and business continuity capabilities, along with efforts to strengthen these capabilities, may be delayed due to shifting of disaster-recovery and business-continuity initiatives.
 - Avangrid does not currently have an inventory of sensitive/critical data types that may be present within its operating environment. A planned data inventory

³⁴ DR 41 B Supp 1. Due to Avangrid confidentiality concerns, a quote from a network penetration test was removed.

³⁵ DR 15 Supplement 1 Attachment 9.

³⁶ DRs 15 Supplement 1 Attachment 9 and 788 Supplement 1 Attachment 10. Due to Avangrid confidentiality concerns, detailed information was removed concerning the study.

exercise, and subsequent data protection and security program implementation may be delayed.

- A planned initiative to identify cyber vulnerabilities across the operating environment and develop guidance to patch and/or remediate through compensating controls of critical systems also will be delayed.
 - Avangrid does not currently have established supply chain processes to assess risk associated with third parties and integrators who support critical assets and infrastructure. A planned endeavor to develop a program and capability to review this risk and work with vendors to remediate also will be delayed.³⁷
- The U.S. Department of Defense, NERC and the Cybersecurity and Infrastructure Security Agency have issued guidance for companies to move toward a “zero-trust” security posture. Zero-trust security is a model that requires strict identity verification for each person and device accessing resources on a private network, regardless of whether their location is within or outside of network perimeter. Avangrid OT systems do not currently utilize a zero-trust approach.³⁸
 - A 2020 assessment of Iberdrola’s and Avangrid’s corporate IT cybersecurity practices resulted in a Tier 2 NIST CSF maturity rating.
 - The same 2020 assessment of Iberdrola’s and Avangrid’s IT network environment resulted in 10 recommended improvements, ranging from improved asset management, training and awareness to privileged access management, improved detection and response capabilities and business-continuity planning.³⁹
 - Avangrid stated that six of the 10 recommendations were considered in the scope of its IT security plan. Others are addressed by different departments.
 - A reassessment of the Avangrid corporate IT network will be initiated in 2024.⁴⁰
 - Iberdrola experienced a cyberattack in which malicious actors obtained the personal information of 1.3 million customers. Fortunately, Avangrid was not targeted in this attack; however, it further emphasizes growing risk to the company.⁴¹
- 2. Avangrid’s cybersecurity teams do not ensure remediation of issues resulting from third-party tests. Avangrid placed restrictions on third parties performing independent assessments limiting program effectiveness.**
- Vulnerability assessments and penetration testing are techniques used to protect against internal and external threats by identifying weaknesses in an organization’s IT and OT network environments.
 - NYSPSC Order in Case 13-M-0178 states in part that utilities must conduct regular third-party vulnerability assessments. NERC CIP-010 Requirement 3 requires

³⁷ DR 579 Attachment 17.

³⁸ DR 900 Attachment 14.

³⁹ DR 538 Supplement.

⁴⁰ DR 348.

⁴¹ DR 900 Attachment 14.

vulnerability assessments. NorthStar requested all third-party vulnerability assessments and penetration tests performed on the Avangrid IT and OT environments. Due to record retention schedules for cybersecurity records, Avangrid provided third-party IT vulnerability assessments and penetration tests from 2021 to 2024 only.⁴² OT assessments and tests were provided for the entire audit period.⁴³

- Avangrid does not have a systematic and rigorous process to ensure that remediation plans are implemented. When issues are identified, there are two types of remediation. The first addresses the issue(s) identified. The second focuses on preventing the same issue(s) from recurring. NorthStar’s review of the 2023 NYSEG and RG&E Cyber Vulnerability Assessment (CVA) findings and observations tracking sheet found that the document was incomplete.⁴⁴
- NorthStar’s review of third-party assessments found similar recurring themes. Avangrid does not effectively remediate issues identified in assessments and tests.⁴⁵
- NorthStar’s review of 2023 third-party assessments of the Avangrid IT and OT network environments showed that the company placed certain restrictions that limited testing effectiveness.⁴⁶
- Avangrid’s Corporate Security team also conducts external and internal vulnerability scans on an annual, quarterly and monthly basis. These include DMZ, critical systems, public facing websites and mobile applications.⁴⁷

3. Avangrid has a reasonable phishing program in place as a risk-mitigation strategy for cybersecurity breaches. Improvements are needed.

- According to NIST, the term “social engineering” is the act of deceiving an individual into revealing sensitive information, obtaining unauthorized access or committing fraud by associating with the individual to gain confidence and trust.⁴⁸ Phishing is a type of social engineering attack in which a malicious actor uses a messaging platform to send links, attachments or other types of deceptive, enticing or threatening content in order to pressure the recipient to do the attacker’s bidding.⁴⁹
- Social engineering attacks, such as phishing, are mitigated through a number of measures that include, but are not limited to, the following:
 - Employee training - Training employees to recognize and respond appropriately to phishing attacks reduces the risk of a successful attack. This is typically

⁴² DRs 40, 41 and 885.

⁴³ DRs 41 and 328 Attachment 2

⁴⁴ DR 41 – 2023 NYSEG_RGE CVA Findings and Observations.

⁴⁵ DRs 12, 38, and 41.

⁴⁶ DR 41. Due to Avangrid confidentiality concerns, detailed information was removed.

⁴⁷ DR 41.

⁴⁸ https://csrc.nist.gov/glossary/term/social_engineering. Accessed on May 3, 2024.

⁴⁹ <https://csrc.nist.gov/glossary/term/phishing>. Accessed on May 3, 2024.

accomplished through email campaigns, presentations and other types of training modules.

- Endpoint security – Phishing attacks often are used to deploy malware on corporate systems. Endpoint security systems can prevent these malware infections, eliminating threat to the business.
 - Data Loss Prevention (DLP) - Phishing attacks often are designed to steal sensitive data. DLP solutions can identify flows of sensitive data to unauthorized parties and block data leakage.
- Avangrid’s phishing program performance is measured by employee and contractor:
 - Report Rate - Recipients who reported divided by total emails delivered. Percent of recipients who reported a phishing email.
 - Click Rate - Recipients who clicked divided by total emails delivered. Percent of recipients who clicked on a link or opened an attachment in a phishing email.
 - Resiliency Rate - Recipients who reported divided by recipients who clicked. Percent of recipients who reported a phishing email without being susceptible compared to recipients who clicked a link or opened an attachment.
 - Unread/no response rate - Recipients who didn’t read or respond divided by total emails delivered. Percent of recipients who took no action.
 - Phishing program performance metrics are reported at the Avangrid and global level (e.g., Avangrid Inc., Spain, UK, Brazil, Mexico, etc.).
 - Avangrid does not set goals for all phishing program metrics.⁵⁰
 - Avangrid’s levels of difficulty for phishing campaigns are rated as Easy (0-7), Medium (8-16) and Hard (17-25). Avangrid phishing campaigns in 2021 were all rated Easy, 2022 campaigns were largely rated Medium, the 2023 campaigns were all rated Medium for the year. Avangrid did not deploy a Hard-rated phishing campaign to its employees and contractors during the audit period.⁵¹
 - Training efforts to prevent “Repeat Clickers” should be improved. The volume of “Three” and “Four-plus” Repeat Clickers has increased from 2021 to 2023.⁵²
 - Avangrid’s social engineering program is largely focused on “phishing campaigns” that require employees to “click” a link embedded in an email. In a world where digital threats are more prevalent and sophisticated than ever, there are a number of other social engineering threats that are increasing potential pitfalls if proactive cybersecurity programs do not evolve (e.g., integration of artificial intelligence with cybersecurity attacks).

⁵⁰ DR 588, 588 Supplement, and 588 Attachment 1. Record retention is 3 years + current year. Due to Avangrid confidentiality concerns, phishing program metrics, results and analysis were removed.

⁵¹ DR 785 Attachment 1.

⁵² DR 588 Attachments 2 to 4. Due to Avangrid confidentiality concerns, detailed information was deleted.

- Access to Avangrid’s networks using non-company devices is generally prohibited. However, Avangrid allows contractors to use non-Avangrid devices in limited circumstances (e.g., special projects, access restricted to virtual applications, etc.).⁵³ Avangrid has almost 5,000 contractors using non-company devices using multi-factor authentication to virtual applications. Avangrid did not provide information regarding the length of time these contractors retained access, number of devices or firm name.⁵⁴
- Avangrid has over 80 contractors working on the AMI project using non-company devices. Almost half are classified as “off-shore” resources. More than 40 onshore/offshore resources have worked on the AMI project, with access to Avangrid corporate devices secured and managed by the company for anywhere from one to four years.⁵⁵

4. Avangrid’s Reliability Assurance group has recorded a significant number of combined self-reports and audit findings of NERC CIP Potential Non-Compliance (PNC) since 2017. While NYSEG and RG&E have not been assessed monetary penalties to date, this number is concerning as certain standards have multiple PNC self-reports over consecutive years.⁵⁶

- Avangrid recorded a significant number of PNC self-reports and audit findings for NYSEG and RG&E from 2017 to 2023.⁵⁷ Many are considered “open” awaiting an enforcement decision.
- NorthStar analysis has identified the OSG group as incurring a majority of PNCs recording over 60.⁵⁸
- Other notable sources of PNCs by department include IT and Protection & Controls.
- Reliability Assurance reports that the NERC CIP PNCs identified in the 2023 NPCC audit are in the process of remediation.⁵⁹
- In 2022, Avangrid’s Reliability Assurance group started a process for recording cybersecurity “near misses.” Prior to this process, an occurrence not identified as a compliance issue was simply closed. However, the group determined that many of these closed issues presented an opportunity to implement “Near-miss Prevention Actions” to strengthen the overall compliance program.⁶⁰ There was a significant

⁵³ DR 1286 and 1286 Attachment 1.

⁵⁴ DR 1286 Attachment 3. Avangrid’s DR 1286 was non-responsive. Non-responsive is insufficient material or material not provided during the audit period.

⁵⁵ DR 1286 Attachment 2.

⁵⁶ NorthStar acknowledges that under certain conditions a single self-report/audit finding for a NERC CIP standard may result in a PNC for both NYSEG and RG&E.

⁵⁷ DR 564 Attachment 1. Due to Avangrid confidentiality concerns, a table with the number of self-reports and audit findings by company. A table with the number of self-reports and audit findings by NERC CIP standard was also removed due to Avangrid confidentiality concerns.

⁵⁸ Due to Avangrid confidentiality concerns, detailed information was removed. DR 33 Attachment 1.

⁵⁹ DR 564 Attachment 1. Due to Avangrid confidentiality concerns, detailed information was removed.

⁶⁰ DR 323.

number of near miss forms reviewed by NorthStar that relate to a specific NERC CIP standard in 2022 and 2023.⁶¹

- While the number of PNC self-reports, audit findings and near misses are concerning, it suggests the existence of a company culture willing to report compliance issues.

5. Avangrid did not implement all recommendations from a 2020 NERC Compliance Best Practices Study. The implementation plan notes all recommendations except three were fully implemented which is misleading.

- Avangrid contracted with a third-party vendor to complete a NERC Compliance Best Practices benchmark study. The study identified a need for the following:
 - Executive team engagement in compliance.
 - Executive ownership of the NERC compliance program.
 - Director and Standard Owner involvement in compliance decisions.
 - Alignment of Networks' organization to support NERC reliability assurance.
 - NERC compliance software applications.
 - Industry engagement.⁶²
- NorthStar requested an implementation plan for review. Avangrid provided the plan as of September 2022. Avangrid did not implement many of the recommendations as stated in its implementation plan.
 - Executive Team Engagement in Compliance
 - Avangrid was to recharter a governance committee called the Reliability Assurance Strategy Committee (RASC) for executive management.⁶³ However, a review of the Avangrid NERC Reliability Assurance Internal Compliance Program (ICP) documents dated December 2022 and updated in November 2023 does not mention a RASC.⁶⁴
 - The study recommended appointing Executive Reliability Assurance (ERA) sponsors, consisting of the Networks COO, Chief Corporate Compliance Officer and Chief Security Officer, with the primary objective to establish program mission and objectives, drive accountability and create a culture of compliance excellence.⁶⁵ Avangrid's implementation plan noted that ERAs were appointed.⁶⁶ However, Avangrid's ICP documentation does not reference any ERAs.⁶⁷ In addition, position descriptions for Chief Compliance Officers (Corporate and Networks) do not mention establishing mission and objectives, driving accountability or creating a culture of compliance excellence for NERC or NERC CIP. Avangrid's Chief Security Officer is responsible for creating a

⁶¹ DR 323 Attachment 1. Due to Avangrid confidentiality concerns, detailed information was removed.

⁶² DR 11 Attachment 3.

⁶³ DRs 11 Attachment 3 and 1218 Attachment 1.

⁶⁴ DR 34 Attachment 1 and 34 Supplement 1 Attachment 3.

⁶⁵ DR 11 Attachment 3.

⁶⁶ DR 1218 Attachment 1.

⁶⁷ DR 34 Attachment 1 and 34 Supplement 1 Attachment 3.

sustainable, compliant corporate security environment and ensuring compliance with NERC CIP standards, but is not documented as having ICP oversight responsibilities.⁶⁸

- Executive ownership of the NERC compliance program
 - Avangrid’s implementation plan noted that the Chief Operating Officer (COO) was appointed as the owner/executive sponsor of the Reliability Assurance Program in December 2020.⁶⁹ However, Avangrid has stated that it does not currently have a position titled “Chief Operating Officer”.⁷⁰ Avangrid did not provide a related position description that includes a responsibility of the Reliability Assurance Program. In 2022, Avangrid established a department called Reliability Assurance and Emergency Management led by a Vice President.⁷¹
- Director and Standard Owner involvement in compliance decisions.
 - Avangrid was to establish a Director Reliability Assurance Committee (DRAC).⁷² However, NorthStar’s review of Avangrid’s ICP dated November 2023 does not mention a DRAC.⁷³
- Alignment of Networks’ organization to Support NERC Compliance
 - Avangrid’s implementation plan notes that a “Director of O&P Reliability Assurance” was hired and an organization called “O&P Reliability Assurance” was created. Avangrid’s implementation plan also notes that a “Director of Cybersecurity Reliability Assurance” was hired and an organization called “Cybersecurity Reliability Assurance” was created.⁷⁴
 - In fact, Avangrid did not implement these recommendations. Avangrid does not have a position description for these separate Director positions and has not created these organizations. Instead, Avangrid combined these roles into a “Director, Reliability Assurance” and created a single organization called “Reliability Assurance” with two managers.⁷⁵
 - A recommendation included in the implementation plan was to include KPIs into corporate objectives and performance metrics. Avangrid stated that implementation of this recommendation is delayed. However, Avangrid further stated that it has included a single NERC compliance related objective is included in the Networks Operations corporate performance objectives –

⁶⁸ DRs 1300 Attachment 2 and 34 Supplement 1 Attachment 3.

⁶⁹ DR 1218 Attachment 1.

⁷⁰ DR 1300.

⁷¹ DR 1288.

⁷² DRs 11 Attachment 3 and 1218 Attachment 1.

⁷³ DR 34 Supplement 1 Attachment 3.

⁷⁴ DR 1218 Attachment 1.

⁷⁵ DR 1300.

Number of audit findings or self-reports.⁷⁶ No NERC performance objectives or metrics are included in Avangrid Networks' corporate performance metrics or the NYSEG/RG&E President and CEO's performance metrics.⁷⁷

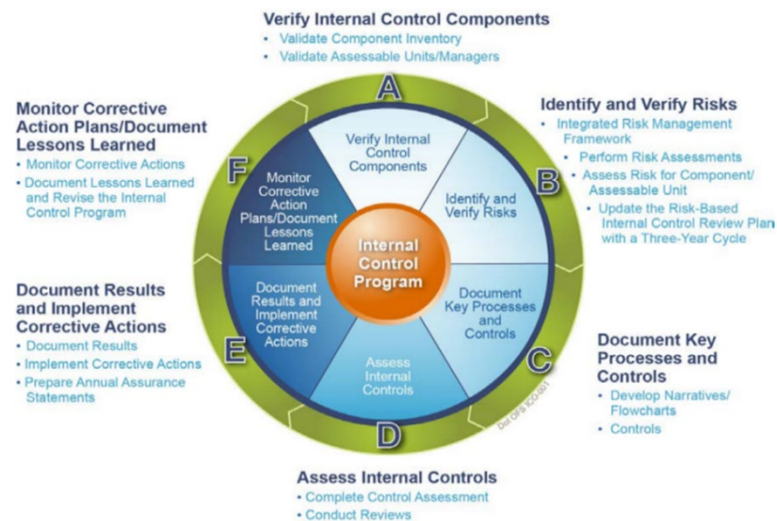
- NERC Compliance Software Applications

- NERC software adoption status is noted as “scheduled,” with a “go-live” date in 2024.⁷⁸

6. Avangrid does not have a formal control program in place to prevent NERC CIP compliance issues. Avangrid recently started developing a formal control program, but the company has not made significant progress toward implementing effective controls. This effort will continue through 2025.

- Avangrid's internal control program includes six components – verify components; identify and verify risks; document key processes and controls; assess controls; document results and implement corrective actions; and monitor corrective action plans/document lessons learned. These components are summarized in **Exhibit X-5**.

**Exhibit X-5
Internal Control Program Elements**



Source: DR 858 Attachment 1.

- Avangrid stated that various controls have been in place since the beginning of NERC CIP Standards, but these controls had not been formally cataloged and monitored.⁷⁹ This statement is unsupported based on a number of data points from a NPCC audit documenting ineffective or lack of proper controls, unable to provide any preventative,

⁷⁶ DRs 1218 and 255 Supplement 2 Attachment 2

⁷⁷ DR 1253 Attachment 1.

⁷⁸ DR 1218 and Fact Verification.

⁷⁹ DRs 327 and 546.

corrective and/or detective controls. The NPCC audit also identified a case of control failure.⁸⁰

- Avangrid's NERC CIP "master controls list" includes a statement that it was unclear/unknown if OSG was completing any review of the BES Cyber System (BCS) list for all Avangrid OPCOs. The System Process Review's most recent tickets were submitted in 2018. Furthermore, another note in the "master control list" states:

"[Governance & Risk Management] GRM is currently [sic] unaware of a formal process/RACI within CAC in place for areas of electronic, unescorted physical access and access to designated BES Cyber System information. This is probably a hole that needs to be fixed by GRM."⁸¹

- A formal control program for NERC Standards launched in 2023 and will remain a work in progress through 2025.⁸² NorthStar requested a list of NERC CIP internal controls in January 2024.⁸³ At the time, the "master controls list" was incomplete.⁸⁴

- The Reliability Assurance group's NERC CIP Master Controls list did not consistently align with its own NERC CIP roles and responsibilities document. Misalignment of these documents for NERC CIP compliance adds to confusion of responsibilities.⁸⁵

"The NERC Reliability Assurance team for NYSEG/RG&E is in the process of reviewing the controls with the responsible business areas to identify gaps for new controls to be created. A few of the controls have been tested by the responsible business area."⁸⁶

"Regular monitoring has not started in the Internal Controls Program but is planned to begin in 4Q 2024, starting with high-risk standards. The monitoring process has not been documented at this time."⁸⁷

- NorthStar requested all Internal Controls Program work products completed in 2023. Project scope for 2023 mainly consisted of data collection – existing controls used by business areas for certain high-risk standards, resulting in an initial list of internal controls.⁸⁸
- A 2020 third-party benchmark study stated the following:

⁸⁰ DR 38. Due to Avangrid confidentiality concerns, detailed information was removed.

⁸¹ DR 546 Attachment 1.

⁸² DR 546 and 546 Attachment 1 and Fact Verification.

⁸³ DRs 327 and 546.

⁸⁴ DRs 327 Attachment 1 and 546 Attachment 1.

⁸⁵ DRs 546 Attachment 1 and 565 Attachment 1.

⁸⁶ DR 546.

⁸⁷ DR 546.

⁸⁸ DR 858.

“The overall assessment of the Avangrid Networks NERC Compliance Program is deficient in many areas, subjecting the company to many risks. These risks can range from financial for standard violations, operational risk when looking at the design basis discrepancies, to reputational risks when it comes to cyber security vulnerabilities. Although there is no quantifiable measure, based on the experiences of the benchmark team and the comparisons to the best-in-class companies, overall performance of the Networks Avangrid Compliance Program is at a low level in the fourth quartile when compared to similar functional registered entities in the industry.”⁸⁹

7. Avangrid’s current business resilience practices are inadequate and flawed.

- Avangrid stated that the objective of Business Continuity planning is to provide a structured and verifiable approach to assessing, mitigating and managing threats and minimizing disruption.⁹⁰
- Fundamental to business continuity planning is the identification and prioritization of critical business processes, IT applications/services (i.e. Tiers 1, 2 or 3) and resources. In addition, frequent testing and updating of resulting Business Continuity Plans (BCP) and Disaster Recovery Plans (DRP) are essential.
- A key step in business continuity planning is performing a Business Impact Analysis (BIA) of each functional area and prioritizing critical IT applications/services into tiers.
- BIA provides necessary data to prepare a DRP and a BCP. Critical information includes the following:
 - Business Impact – Potential cost associated with a disruption, calculated in terms of dollars for each business function.
 - Timeframes - Three timeframes that are typically found in BIA, BCP and DRP are Recovery Point Objective (RPO), Recovery Time Objective (RTO) and Maximum Allowable Downtime (MAD).
 - Dependencies - Dependent relationships among business processes, systems and vendors.
- Tier 1 applications or services are those required to keep the business running immediately after a disaster, and which could not continue using alternative means pending longer-term business continuity efforts.⁹¹
- Avangrid criteria for select applications state that an application must be rated in one of five categories.⁹²

⁸⁹ DR 11 Attachment 3.

⁹⁰ DR 46.

⁹¹ DRs 342 Attachments 1 to 8 and 533. Due to Avangrid confidentiality concerns, detailed information was removed.

⁹² DR 342 Attachments 1 to 8. Due to Avangrid confidentiality concerns, detailed information was removed.

- NorthStar reviewed BIA documents for certain Avangrid Networks’ applications for New York and identified a number of issues.⁹³
- NorthStar’s review of Avangrid’s BIAs, BCPs and DRPs found plans that were incomplete, included inaccurate information, and featured conflicts among documents.⁹⁴
- Certain applications/services should be tested annually to verify information accuracy (e.g., RTO and RPO values).⁹⁵ NorthStar requested results from annual testing of these applications. It appears that not all of these applications are tested.⁹⁶
- Avangrid statements in certain documents diminish the usefulness of RTO and RPO metric thresholds used in business resiliency.⁹⁷ However, Avangrid BCP documentation still required the business to include analysis, input or reference to RTO and RPO metrics. Furthermore, RTO and RPO performance in relation to improving Avangrid’s cybersecurity posture was discussed at the Cyber Architecture Committee meeting in April 2023.⁹⁸ RTO and RPO remain important factors in business resilience planning and documentation at the time despite Avangrid’s testing results.
- Avangrid has stated that it has initiated a program to update Business Continuity Plan templates, conduct tabletop exercises, and work on a Business Continuity Management tool, which it plans to pilot at some point in 2024.⁹⁹

8. Avangrid does perform drills, exercises and tests related to physical and cybersecurity. However, “lessons learned” from these exercises are not clearly documented, and improvements are not clearly incorporated into physical and cybersecurity programs.

- Avangrid has stated that Corporate Security tests Avangrid’s Unified Incident Response Plan (UIRP) in two ways. First, testing occurs every two years during the national GRIDEX exercise. Second, Corporate Security tests the UIRP on a smaller scale during internal exercises two to three times per year. These drills allow for regular testing and feedback to ensure the plan best represents current business practices.¹⁰⁰
- Avangrid has further stated that the CA&C team runs an emerging program within Cyber Recovery that is currently updating Business Continuity Plan templates and conducting tabletop exercises. Tabletop exercises include multiple scenarios that cover

⁹³ DR 342 Attachments 1 to 8. Due to Avangrid confidentiality concerns, detailed information was removed.

⁹⁴ DR 558 Attachment 2, 558 Attachment 74, DR 558 Attachment 75, DR 558 Attachment 34, DR 558 Attachments 87 and 88, DR 558 Attachment 15, DRs 558 Attachment 11 and 413 Attachment 3. Due to Avangrid confidentiality concerns, detailed information was removed.

⁹⁵ DRs 342 and 533.

⁹⁶ DRs 46 Supplement 1 Attachment 4, 342, 533 Supplement Attachment 9, Due to Avangrid confidentiality concerns, detailed information was removed.

⁹⁷ DRs 533 Supplement and 533 Supplement Attachment 9.

⁹⁸ DR 976.

⁹⁹ DRs 48, 344, and 532.

¹⁰⁰ DR 48.

cyber-attacks, third-party compromise, DDOS attacks, weather/natural disasters and geopolitical events. Cyber Recovery is working with a contracted team to assess Avangrid's resilience through testing and documentation.¹⁰¹

- Avangrid provided documentation for a sample completed drill. The document outlines drill scenarios and states that at conclusion of the drill, the “recovery team will now take what we have learned from this scenario and work to review any suggested changes or comments made during the exercise”. No clear documentation provides evidence of key learnings from this drill, nor was documentation provided that demonstrates how such learnings were incorporated into ongoing physical and cybersecurity programs.¹⁰²

9. The UIRP checklist contains documentation for “key information sharing,” including communication with local, state and federal officials. The UIRP also documents tasks and meetings. Should an event require communication with local, state and federal officials, requirements should be clearly documented in the UIRP and a description of communications should be included in notes.

- For the one incident reviewed that required communication with local, state or federal officials, the process was clearly documented.¹⁰³ Another incident reviewed required communication with the NYISO, which was also clearly documented.¹⁰⁴
- However, as noted in Conclusion 7, Avangrid BIAs, BCPs and DRPs contain information that is incomplete, inaccurate and/or conflicts among documents. This includes communication protocols with local, state and federal officials. Furthermore, contact information for these officials appears to be maintained in various documents (PDFs, Word, Excel) created at various points in time. There is no clear process to update and maintain this information such that correct contact information and protocols for local, state and federal officials are readily available during an incident.¹⁰⁵ Users of these documents should be able to identify when to communicate and how to communicate with local, state and federal officials. In their current form users would not be able to consistently complete these communication activities.

10. Avangrid does not have strong remedial measures in place to address physical security breaches and has reported multiple invalid badge transactions at NYSEG and RG&E facilities.

NorthStar requested information regarding unauthorized access to NYSEG or RG&E facilities. Avangrid responded that no unauthorized access to NYSEG and RG&E facilities has occurred. As it pertains to records retention, all records related to Avangrid's Bulk Electric System Physical Security Program serve as evidence to

¹⁰¹ DR 48.

¹⁰² DR 343 Supplement 1 1, Supplement 1 Attachment 1 and Supplement 2.

¹⁰³ DR 570 Attachment 4.

¹⁰⁴ DR 570 Attachment 5.

¹⁰⁵ DR 558.

demonstrate regulatory compliance.¹⁰⁶ This statement is not entirely accurate due to a NERC CIP audit finding.¹⁰⁷

- NorthStar requested further information regarding physical access to NYSEG and RG&E facilities. NorthStar noted a number of employees with invalid badge access transactions or “bad swipes” at various card readers deployed at NYSEG and RG&E buildings. **Exhibit X-6** provides examples of documented employee and contractor invalid badge transactions recorded. As the exhibit illustrates, these instances occurred multiple times over consecutive years.

Exhibit X-6
Employee IDs with Invalid Badge Transactions

ID number	Bad Swipes	Company	Year
650110133	23	RGE	2021
650110133	27	RGE	2022
650110133	70	RGE	2023
650425430	46	NYSEG	2021
650425430	30	NYSEG	2022
650425430	13	NYSEG	2023
650442930	19	NYSEG	2021
650442930	21	NYSEG	2022
650486530	8	NYSEG	2021
650486530	41	NYSEG	2022
650486530	33	NYSEG	2023
650543430	61	RGE	2022
650543430	21	RGE	2023
657248130	2	NYSEG	2021
657248130	26	RGE	2021
657248130	3	NYSEG	2022
657248130	15	RGE	2022
657248130	9	NYSEG	2023
657248130	24	RGE	2023
657268430	104	RGE	2023
657279030	3	NYSEG	2022
657279030	2	NYSEG	2023
657279030	140	RGE	2023
650196732	2	NYSEG	2021
650196732	11	RGE	2021
650196732	7	RGE	2022
650196732	7	NYSEG	2023
650196732	14	RGE	2023

Source: DR 539 Attachments 1 to 6. Includes CIP and non-CIP facilities.

- Most “bad swipes” occur at non-CIP facilities. Avangrid has stated that for NERC CIP areas, when the Security Operations Center (SOC) receives an invalid badge transaction, an invalid attempt form is completed and filed in the Corporate Security

¹⁰⁶ DR 539.

¹⁰⁷ DR 38. Due to Avangrid confidentiality concerns, detailed information was removed.

case management system. If the user is a multiple offender, the supervisor is notified and asked that they counsel the user.¹⁰⁸ Avangrid did not indicate what corrective actions are taken for “bad swipes” at non-CIP facilities. As shown in **Exhibit X-6**, more than 100 invalid badge transactions were documented in a single year by a single employee/contractor.

11. Avangrid’s processes and mechanisms that support the implementation plans filed in Case 13-M-0178 are inadequate. Areas for improvement include business resilience, vulnerability assessment remediation, physical security and PII training.

- Avangrid has appropriate procedures to plan and respond to a network breach and compromise of personally identifiable customer information.
 - Avangrid Corporate Security’s UIRP describes the process used to manage and coordinate company-wide efforts in response to a significant cyber or physical security incident. The document is updated annually and applies to Avangrid Service Company, Avangrid Networks, Avangrid Renewables and all subsidiaries of Avangrid, Inc.¹⁰⁹
 - According to the UIRP, an incident is defined as:

“...a malicious act or suspicious event that leads to an unplanned interruption to physical or cyber services or reduction in the quality of a service occurring within the business due to a breach in normal and expected physical or cyber system behavior. This includes all actions that adversely impact Avangrid’s security including reputational, financial, regulatory, or operational.”¹¹⁰
- The UIRP is tested annually through planned exercises. NorthStar reviewed a selection of these exercises and post-exercise reports. Discussion is provided in Conclusion 8 regarding exercises and post-exercise tests. Further discussion on challenges with the delay of CSMP and business resiliency are provided in Conclusions 1 and 7.
- Physical access to sensitive areas is governed by Avangrid Corporate Security’s access control policies and procedures. Access to company facilities is managed by the Corporate Security department. Unescorted access is also handled by the Security department, based on specific needs. Access to NERC CIP-covered facilities is regulated by NERC CIP requirements.¹¹¹ As previously discussed, Avangrid has experienced physical access control issues in the past due to lack of proper controls regarding unescorted access in NERC CIP-covered facilities.¹¹²
 - NorthStar toured a utility data center. The facility featured many layers of security measures.¹¹³

¹⁰⁸ DR 611.

¹⁰⁹ DR 46 Attachment 3.

¹¹⁰ DR 46 Attachment 3.

¹¹¹ NERC CIP-004, CIP-006; DRs 47 Supp 1 Attachments 7 and 9, 35 Attachments 8-14.

¹¹² See previous discussion on NERC CIP standards and PNCs.

¹¹³ DR 712 Attachments 1 and 2.

- However, physical inspections during a CVA in August 2023 identified issues that could lead to device tampering. As of March 2024, this issue had not been remediated.¹¹⁴
- According to Avangrid, NYSEG and RG&E have an inventory of several computer systems/applications that contain PII information.¹¹⁵ As previously discussed, Avangrid does not have a complete inventory of assets; therefore, PII could be included in other systems and simply have not been identified.
- Avangrid has in place methods and software to protect against the unauthorized removal of customer PII by employees. Avangrid systems known to contain customer PII are logically segmented from other systems not containing PII through the use of a secured subnet. Data Leakage Protection (DLP) software was implemented to avoid any customer PII being erroneously or nefariously removed from Avangrid platforms. For all workstations, an Active Directory Group policy is used to prevent the use of removable media. Additionally, Avangrid uses third-party software for Office 365 to monitor and protect sensitive data exfiltration. When customer information is transmitted to the company, stored within company systems, or shared with vendors as part of normal business, Avangrid has tools (encryption and secure transfer protocols), and assets (firewalls with intrusion protection and network access control) in place.¹¹⁶ Avangrid has stated that it does not provide employees access/ability to retrieve customer information from credit bureaus.¹¹⁷
- Avangrid utilizes several tools for intrusion detection and security information event management. These tools cover a spectrum of functionality, including real-time network information and monitoring, data log analysis, anomaly investigation, and endpoint security to prevent and detect malicious activity. Tools also include protection of the Avangrid cloud environment and web applications. For the OT environment, Avangrid uses a platform to analyze network traffic and identify threats, along with conducting forensic investigations and root cause analysis. The platform can also create inventories and identify current vulnerabilities and threats.¹¹⁸ Avangrid is in the process of developing a Threat Hunting program to proactively identify issues within its environment. Implementation is expected to be complete by the end of 2024.¹¹⁹
- Avangrid uses tools to protect customer energy consumption data.
 - Customer electricity consumption data are visible within the energy manager platform, and non-AMI consumption data are protected by customer logins, using industry security standards.

¹¹⁴ DR 41 – 2023 NYSEG_RGE CVA Findings and Conclusions.

¹¹⁵ DR 329.

¹¹⁶ DR 859.

¹¹⁷ DR 860.

¹¹⁸ DR 573.

¹¹⁹ DR 883.

- NYSEG and RG&E customer websites and application programming interfaces (API) are protected by the appropriate security technology.
 - Online access to the energy manager platform is restricted to customer logins by using a specific technology. NYSEG and RG&E websites enforce a specific protocol so that all data transmitted between the server and the client are encrypted and secure. As part of an annual penetration testing program, Avangrid assesses NYSEG and RG&E customer websites. This is in addition to monthly scans the cybersecurity team conducts.
 - Internally, NYSEG and RG&E customer electricity and gas consumption data are maintained within the Meter Data Management System (MDMS). The MDMS is located at a data center.¹²⁰
- Avangrid engages third parties to perform vulnerability and penetration testing on its IT and OT environments. Avangrid Corporate Security and CA&C teams perform internal vulnerability assessments on networks and assets.¹²¹ Internal and external audit programs have conducted computer access reviews in the past as part of financial/Sarbanes-Oxley testing.¹²² Additional discussion related to remediation efforts resulting from these assessments is provided in Conclusion 2.
 - Avangrid PII training is adequate for employees; however, post-training surveys for participant feedback and continuous improvement are not performed.¹²³ Avangrid provides annual PII training as well as training for new hires. Participation rates from 2017 to 2023 range from 97 to 100 percent.¹²⁴
 - Avangrid’s original response regarding PII training for contractors included an Acceptable Use Rule, Data Classification Rule, and a Treatment of PII Rule.¹²⁵ NorthStar requested evidence to support contractor PII training. Avangrid revised its original response to state that Avangrid does not provide PII training to its contractors with access to sensitive customer information. Rather, Avangrid shifts the PII risk to its vendors through a Data Security Rider included in vendor contracts. Avangrid stated:

“Contracted Vendors are responsible for providing the appropriate privacy and security training to its employees and those persons authorized to Process Personal Data or Company Data per the terms of Avangrid’s Data Security Rider.”¹²⁶
 - The Avangrid Data Security Rider language on training states:

“Personal Data and Company Data shall only be accessed by persons who need access to carry out VENDOR's obligations under the Agreement and this Rider

¹²⁰ DR 866.

¹²¹ DRs 41 and 328.

¹²² DRs 12, 14, and 50.

¹²³ DR 541.

¹²⁴ DRs 541 Attachments 1 and 2.

¹²⁵ DR 42.

¹²⁶ DR 540.

and in accordance with the instructions of CUSTOMER; VENDOR shall provide appropriate privacy and security training to its employees and those persons authorized to Process Personal Data or Company Data.”¹²⁷

- In effect, Avangrid has shifted its responsibility to provide and oversee training of contracted resources in handling sensitive customer information. This transfer of PII training responsibility to the vendor does not account for regulatory or company PII training expectations, comprehensiveness of training materials, training methods and frequency, or any rights for the company to engage in oversight of whether PII training actually occurs for its contracted resources.
- Avangrid has maintained a retainer for “Rapid Response” cybersecurity services since 2016 through third-party providers.¹²⁸ The most recent contract covers 2022 to 2025.
- Avangrid utilizes a demand-for-services credit monitoring model in the event of a data breach involving customer information. Demand for services in this case means credit-monitoring services are contracted in the event of a breach or data leak. Codes are purchased by the company and passed to affected customers or employees that can be redeemed with the credit monitoring company for services over one to two years of monitoring.¹²⁹

12. Avangrid’s Comprehensive Security Plan does not meet all requirements of security measures in New York State’s Critical Energy Generating and Transmission Facilities Prepared Pursuant to Executive Law Section 713.

- Avangrid’s security plan does not clearly document several components of New York State’s critical security criteria, including the following:
 - Indication that sufficient and up-to-date efforts have been made to accurately identify the most critical infrastructure assets operated by the company and where those infrastructure assets could most benefit from greater security measures.
 - Identification of appropriate security technologies and other security features that should be deployed for better protection of company-identified critical facilities and assets.
 - Evaluation of the adequacy of coordination of security program responsibilities with incident management and emergency response responsibilities.
 - Evaluation of the adequacy and frequency of internal audits of security operations and programs.
- Although the security plan includes specific deliverables and dates, it does not specifically address the items listed above. Furthermore, it provides no clear documentation of evaluating these items over time and implementing improvements.

¹²⁷ DR 540 Attachment 1.

¹²⁸ DR 574 and 574 Attachments 1 to 4 (not responsive on Att. 4 (unsigned)).

¹²⁹ DR 575.

13. Avangrid’s process for hiring certain security personnel is inadequate. Avangrid does not update or consistently complete background checks for cybersecurity personnel. In addition, Avangrid does not consistently communicate expectations for roles and responsibilities for those involved in NERC CIP.

- Avangrid has stated that its hiring practices are consistent across companies for all internal, non-union positions, including personnel in the Security department.¹³⁰ Contracted physical security guards are not Avangrid employees and are hired and onboarded by a vendor. Once a contractor is approved, the vendor will initiate recruitment and background checks. Upon completion, the vendor will issue a background check certificate.¹³¹
- NorthStar reviewed Avangrid’s hiring procedures and requested records to demonstrate adherence with these procedures for positions such as Director, Cyber Security Operations Center; Manager, Cybersecurity Operations; Director, Physical Security; Lead Analyst, Security, Project Manager, Security; Senior Cyber Detect and Response Specialist; and Director, Reliability Assurance. Avangrid could not provide evidence of the following due to a system transition:
 - Intake sessions for developing position requirements and expectations for hiring process.
 - Posting dates of positions, either internally or externally.
 - Position offer dates.¹³²
- Avangrid shows missing background check dates for security personnel. In one instance, a background check dated back to 2016. NorthStar also identified instances of missing offer letter signature dates.¹³³
- Avangrid has developed a roles and responsibilities chart for NERC CIP standards that identifies specific personnel associated with compliance and oversight of specific standards.
 - The NERC CIP chart identifies roles such as Owner, Standard Lead, Responsible Director, Subject Matter Expert (SME), SME Manager, SME Director, SME Lead, and SME Vice President.¹³⁴
 - NorthStar reviewed position descriptions for select individuals with roles and responsibilities for NERC CIP.¹³⁵ Most position descriptions did not communicate

¹³⁰ DR 49.

¹³¹ DR 49 Supplement 1.

¹³² DR 887.

¹³³ DR 887 Supplement 1 Attachment 1.

¹³⁴ DR 565.

¹³⁵ NERC CIP standards apply to all entities that participate in the bulk power system. The CIP standards are designed to protect the grid from cyber and physical threats, and ensure the reliability and security of the power grid. NERC Reliability standards regulate the quality of the North American bulk power system. The standards set minimum requirements for the reliability, efficiency, safety, and risk management of bulk power operations.

specific roles or expectations associated with NERC CIP compliance within standards, requirements or executive oversight activities.¹³⁶

- Regarding personnel changes, Avangrid informs the DPS of new Physical Security employees and/or changes in the Physical Security management team. Avangrid does not address changes in other security management teams (e.g., Avangrid Cybersecurity, CA&C group or IT Infrastructure Security).¹³⁷

D. RECOMMENDATIONS

1. Provide a detailed report and in-person presentation to DPS on Avangrid's prior and current plans to implement NIST CSF. This report must be provided at least one month prior to an in-person presentation. The report and presentation must include, at minimum, the following:
 - 1.1. Detailed description of CSMP from original assessment in March 2020 to current date.
 - 1.2. Review of each CSMP reassessment/re-evaluation performed and reason each reassessment/re-evaluation was required.
 - 1.3. Discussion of CSMP governance model and all committees – including committee membership, responsibilities and work products produced.
 - 1.4. Discussion of project management approach and implementation. Include all changes to project management since inception to current date.
 - 1.5. Past and current CSMP procurement plans and contracting for all vendors, equipment and materials.
 - 1.6. Scope changes to CSMP from inception to current date, with justifications for each scope change. Include information on all scope changes currently planned. Discuss scope risks and mitigation strategies.
 - 1.7. CSMP resource management approach, staffing plans and actuals (internal and external) from inception to current date – with verifiable justifications for changes to staffing plans. Include discussion of program attrition issues and attrition rates since inception (for both internal and external resources). Include discussion of Avangrid's staffing plans going forward to complete project. Include resourcing risks and mitigation strategies.
 - 1.8. CSMP schedule-management approach, schedule plans, milestones and actuals from inception to current date – with verifiable justification for all modifications. Include detailed discussion of CSMP schedule and milestones going forward, plus schedule risks and mitigation strategies.
 - 1.9. CSMP cost management approach, budgets and actuals from inception to current date, with verifiable justification for all changes. Include discussion of workstream budget plans, controls, budget risks and mitigation strategies.
 - 1.10. CSMP performance from inception to current date. Provide program metrics and examples of all forms of management reporting.

¹³⁶ DRs 886 and 1258.

¹³⁷ DR 49 Supplement 1.

- 1.11. Discussion of business impacts for delays in implementing CSMP, with details regarding all vulnerabilities.
 - 1.12. Discussion of change-management approach, plans and efforts to date.
 - 1.13. Scope and approach for prior and future maturity assessments of Avangrid's NIST CSF programs. Provide DPS with prior final reports provided by vendors (no executive or management summaries) describing maturity study results. Include name of vendor that performed assessments, signed contracts, copies of all vendor-provided proposals, and Avangrid Procurement group's assessments of vendors providing proposals to perform maturity assessments.
 - 1.14. Detailed account of funding provided for these activities within rates and how those funds have been used for the past five years. Discussion should also address how Avangrid plans to use funding for the next five years.
 - 1.15. Current and future efforts to protect Avangrid IT and OT environments until NIST CSF is in place and functioning as intended.
2. Formalize CSMP expectations and planned outcomes with DPS. Provide testimony in future NYSEG and RG&E rate cases regarding CSMP expectations. Furthermore, provide DPS with semi-annual Avangrid CSMP reports going forward. At minimum, these reports should include metrics for scope, cost, schedule and resource management, plus earned value. Provide DPS with detailed variance reporting, with verifiable justification for all variances. Notify DPS of all Avangrid NIST CSF maturity assessments in terms of timing, scope, cost and vendor selection. Provide all signed Avangrid contracts, procurement assessments and full study results going forward. Meet with DPS to finalize CSMP expectations, outcomes and all reporting requirements.
 3. Develop metrics to track effectiveness of remediation efforts associated with Vulnerability Assessments/Penetration Tests and similar audits/assessments. Include these metrics as part of responsible executives'/employees' incentive compensation plans.
 4. Develop a detailed plan to implement all NERC CIP internal controls and provide to DPS. Also provide quarterly implementation progress updates. Perform internal audit of NERC CIP controls for high-risk standards, as well those for CIP 004, 007, 010, and 011 and provide results and workpapers to DPS.
 5. Provide DPS with detailed report and in-person presentation of Avangrid's business resilience program and current effort to revise the company's program, materials and reporting. The report must be provided to DPS at least one month in advance of in-person presentation. As part of this presentation, include a demonstration of the Business Continuity Management tool. Also provide DPS with a copy of all updated Business Impact Analysis, Business Continuity and Disaster Recovery Plans upon completion of these materials. The report and presentation should describe funding provided in rates for these activities and how funds have been used for the last five years.
 6. Include DPS in all business resilience drills/exercises to observe activities. Provide DPS with post-drill/exercise reports, findings, recommendations and implementation plans.

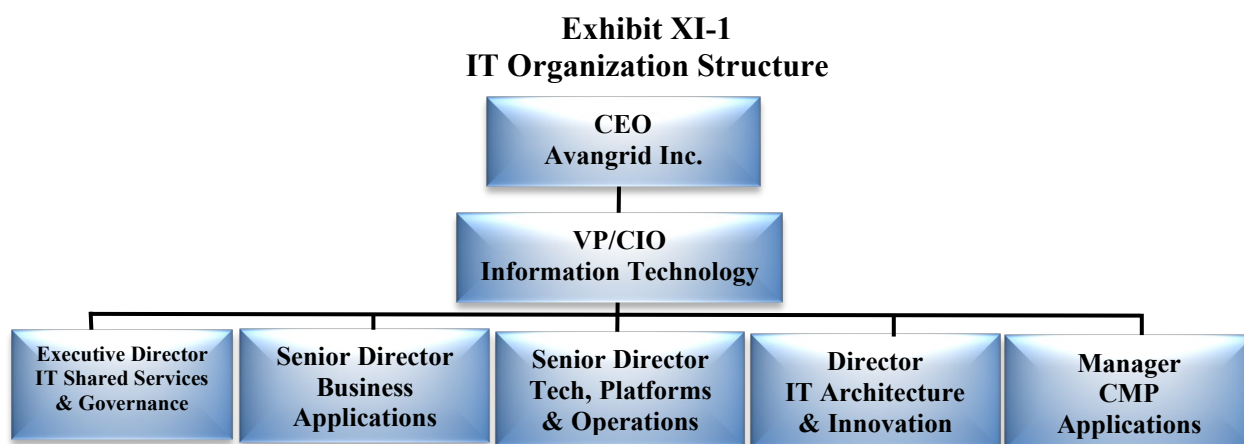
7. Develop thresholds for “bad swipes” at non-NERC CIP-covered NYSEG and RG&E facilities and apply appropriate remediation for repeat offenders.
8. Develop annual goals for all Avangrid phishing program metrics and report results to DPS.
9. Benchmark how other industries, not just energy/utilities, are adapting proactive cybersecurity programs to the evolving cyber-threat environment (e.g., integration of AI into social engineering attacks). Complete benchmark and provide detailed report to DPS.
10. Conduct an internal audit of all contractors using their own computers to access Avangrid networks/systems/applications. Develop the audit scope in collaboration with DPS. At minimum, this audit must assess impact to Avangrid’s cyber-security posture. Provide audit results and associated work papers to DPS. Avangrid Internal Audit must make a presentation to DPS on audit results.
11. Clearly document and provide verifiable evidence to support adherence to implementation plans filed in Case 13-M-0178. Submit document and associated materials for DPS review.
12. Update Comprehensive Security Plan to meet all requirements in New York State’s Critical Energy Generating and Transmission Facilities pursuant to Executive Law Section 713 and provide copy of Plan to DPS.
13. Immediately notify DPS of all physical and cyber-security staffing changes. Avangrid will meet with DPS to standardize and finalize reporting requirements as an activity in forthcoming audit recommendations implementation plan.
14. Perform background checks on all Avangrid physical and cyber-security employees who don’t have a background check on file or have a background check that has not been updated within five years. Revise procedures to include requirement for updating physical and cyber-security personnel background checks on mutually agreeable timing with DPS and collective bargaining units (as required).
15. Revise position descriptions for all resources supporting the NERC CIP program to clearly detail NERC CIP roles and responsibilities.

XI. INFORMATION SYSTEMS

This chapter provides NorthStar’s review of the effectiveness of the Avangrid Information Technology (IT) organization and its role in major initiatives – NYSEG’s and RG&E’s Advanced Metering Infrastructure (AMI), the Avangrid Networks’ Enterprise Geographic Information System (GIS), and the Customer Information System (CIS).

A. BACKGROUND

The Avangrid IT organization is centralized under a Vice President (VP)/Chief Information Officer (CIO), who reports to the Avangrid, Inc. CEO. The IT organization includes an Executive Director, two Senior Directors, a Director and a Manager, who all report to the VP/CIO.¹ The current IT organization is illustrated in **Exhibit XI-1**.

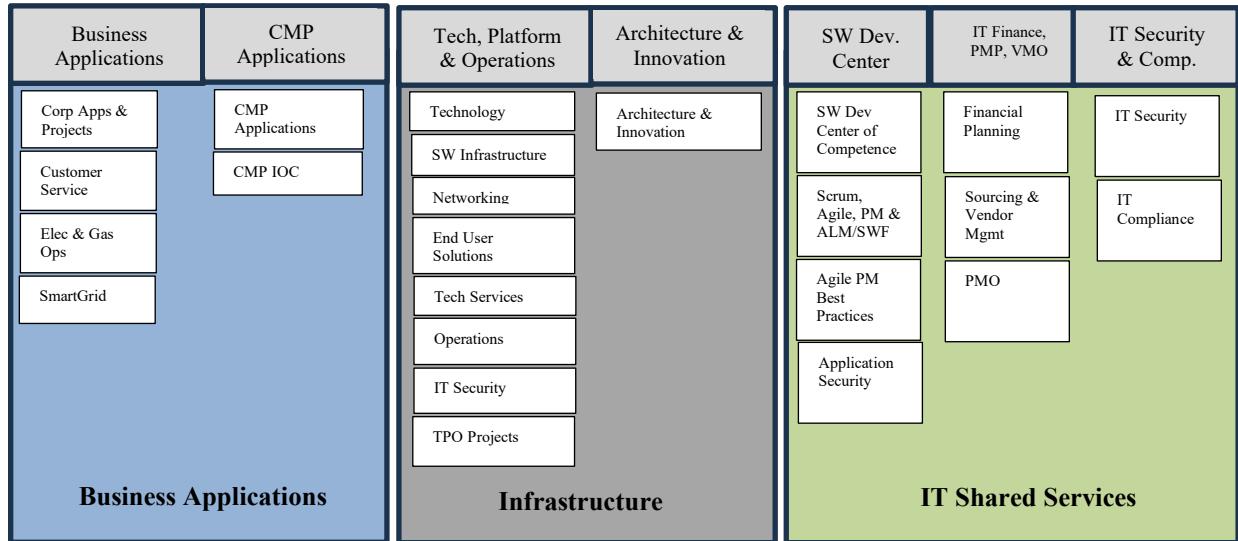


Source: DR 69 Attachment 1.

The Avangrid IT organization provides services to Avangrid, Inc. and its subsidiaries. Services are structured to include Business Applications, Infrastructure, and IT Shared Services. Each is provided in **Exhibit XI-2** and briefly summarized below.

¹ DRs 1 and 69.

Exhibit XI-2 Avangrid Inc. IT Organization Services



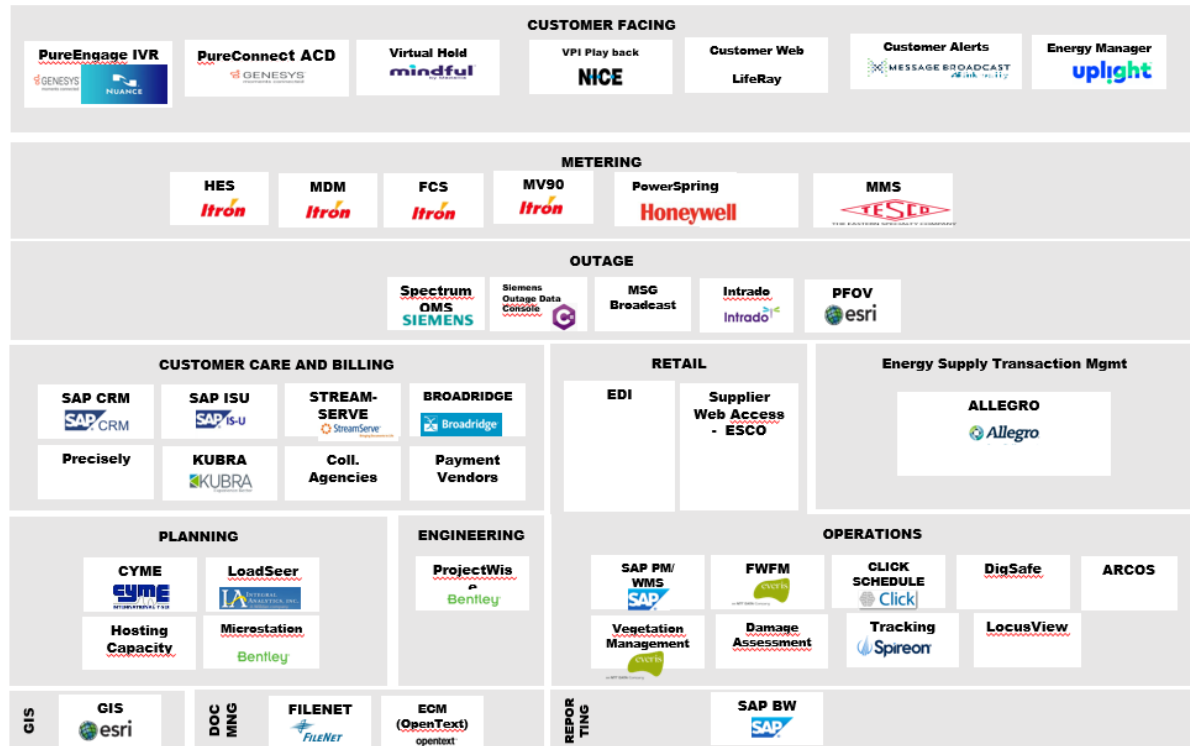
Source: DR 69 Attachment 1.

- **Business Applications** – Two groups provide application services to Avangrid and its subsidiaries: Business Applications and Central Maine Power (CMP) Applications. Business Applications’ focus is on providing solutions to support each organization’s strategic objectives through use of common applications across all Avangrid companies and a common IT roadmap. There is a dedicated CMP technology team to support the Executive Improvement Plan.
- **Infrastructure** – Includes two groups: Technology, Platforms and Operations (TPO) and Architecture and Innovation. TPO’s purpose is to deliver integrated architecture across Avangrid by supporting the Business Applications group, Corporate Communications and End User Solutions. Architecture and Innovation defines common technology and development framework strategy, with a focus on innovation to support business transformation.
- **IT Shared Services** – This area is composed of three groups: Software Development Center; IT Finance, Project Management Office (PMO), Vendor Management Organization (VMO); and IT Security and Compliance. The Software Development Center ensures dissemination, application, and evolution of best practices for project management and execution based on Lean and Agile principles. The group also provides software development tools/methodologies to Centers of Excellence. IT Finance, PMO and VMO performs financial planning, sourcing and IT vendor management, as well as project management office services. Last, IT Security and Compliance implements and assesses effectiveness of IT controls defined by control owners. The group also supports high level compliance and audit demands. Overall, the IT Shared Services organization seeks to apply common processes, procedures and tools.²

² DR 69 Attachment 1.

Applications and data used by NYSEG and RG&E operate on dedicated servers, databases and storage spaces, each exclusively allocated to a single application. No servers or infrastructure are shared among multiple applications. Key applications used by NYSEG and RG&E are provided in **Exhibit XI-3**.

Exhibit XI-3 IT Applications used by NYSEG and RG&E



Source: DR 56.

Avangrid’s IT organization supports four data centers, approximately 4,000 physical and logical servers (WINTTEL, LINUX, and UNIX), almost 2,000 databases (Oracle, SQL, DB2 and HANA), and 500 cloud servers and databases.³ As of November 2023, there were approximately 35 executive- and management-level resources (not including three vacant positions) within the Avangrid IT organization.⁴

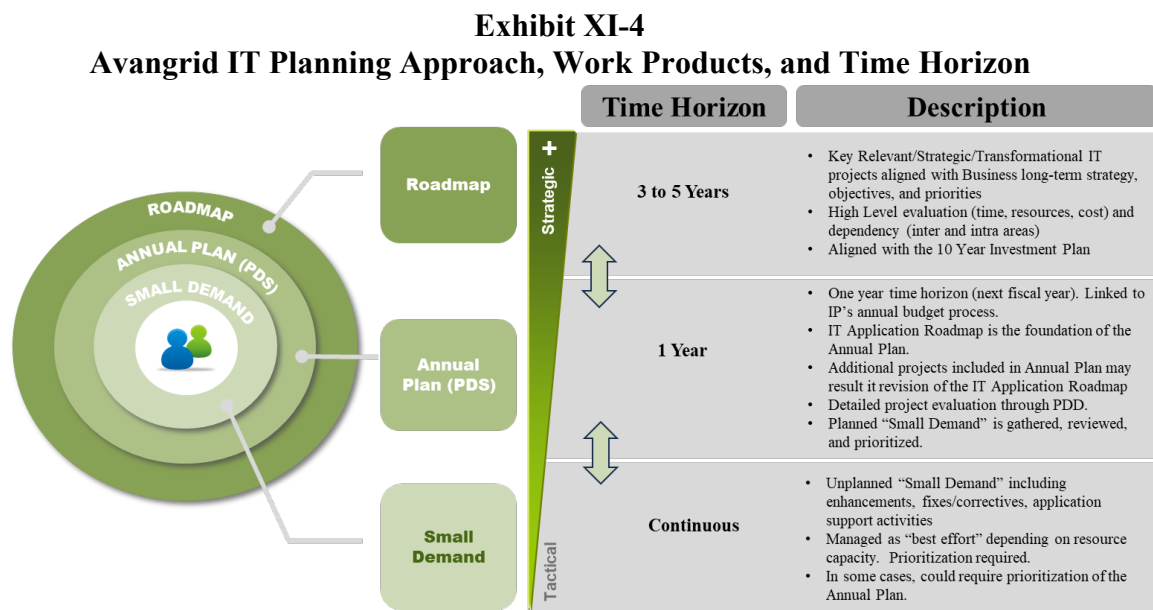
There are four work products developed by the IT organization in collaboration with its various business partners during the IT project planning period – IT Application Roadmap, Annual IT Plan, the “Small Demand” list, and Project Definition Documents (PDD) that are used to plan IT projects across the Avangrid portfolio of companies. Each is briefly described below:

³ DR 56. One of the data centers is listed as “in progress” and one data center is a Tier 3, collocation facility and designated for disaster recovery.

⁴ DR 69 Attachment 1.

- The IT Application Roadmap provides a three-to-five-year look forward for key strategic projects. These projects have a high level, summary detail of time, effort and cost, as well as identification of dependencies. While the IT Application Roadmap is annually reviewed, it is updated every two years.
- The Annual IT Plan provides a one-year view (i.e., next fiscal year) that is an input to Investment Planning's prioritization and budget process. The Annual IT Plan provides a more detailed project evaluation of time, resources, cost and dependencies in comparison to the summary level evaluation within the IT Application Roadmap through the completion of PDDs.
- The Small Demand list includes business requests for application enhancements, fixes/corrections and other application-support activities.

The IT planning process approach and work products are summarized in **Exhibit XI-4**.



Source: DR 721.

- Project Definition Documents – Underlying the IT Application Roadmap and Annual IT Plan are the PDDs. A PDD includes important information such as scope and objectives, description, justification, benefits, impacts, dependencies, resources, risks, schedule and cost estimate of a project. Other information includes Purpose (i.e., investment justification) and Classification of Investment, as well as other administrative information such as PDD Name, Business Owner, Project Type, etc.

Each of the work products previously described has a role to play in the Annual Portfolio Demand process. The Annual Portfolio Demand process begins with evaluation of the IT Application Roadmap by IT and Avangrid departments (i.e., the Business) to validate current projects. To identify new projects for the upcoming year, IT works jointly with the Business in "Demand Gathering" (i.e., requests) by completing the PDD document. The Business provides information, which must include, at a minimum, project objectives, scope, description

and requested completion timeframe. PDDs also include investment purpose/justification and classification of investment. These categories are defined in **Exhibit XI-5**.

Exhibit XI-5
IT Project Investment Purpose/Justification and Classification Mapping

Purpose/Justification	Investment Classification
Legal Need to accomplish mandatory legal requirements, laws, and regulations.	Mandatory Compliance Required justification for projects in this category must include the specific reference to the regulatory order and will be the base of the capital investment plans for all Companies.
Strategy Contributes to accomplishing a Business/Iberdrola or Avangrid Group strategic objective.	Strategic Corporate strategic direction.
	Group Initiatives In direct support of Iberdrola group strategies and are approved by the CEO or Avangrid Board of Directors.
Technological Obsolescence There will be a discontinuity/inconsistence in the maintenance or support infrastructure if action is not taken.	Asset Condition Replacement of assets based on a determination of an asset's health and anticipated end of life.
Link to Company Activity There will be functional issues with one or more Business processes.	Reliability Risk Generally, this includes those that fall under the IUSA planning criteria and do not fall under the NERC Standards – generally transmission, sub-transmission, and substation facilities under 100kV. These projects are required to provide safe, reliable service, including meeting basic regulatory service targets such as SAIFI, CAIDI, and customer service.
	System Capacity Ensure the system has sufficient capacity, resiliency, and operability to meet the demands of the customers.
Efficiency Improvement on results/costs. Provides a lower cost of activity, process, etc.	Efficiency Primarily focused on improving the efficiency of business operations wither through the direct reduction of costs, improvement of operational output or quality.

Source: DRs 718 Attachment 1 and 1164.

As shown in **Exhibit XI-6** below, most project investments are classified as Technology Obsolescence, Strategy, and Efficiency.

Exhibit XI-6
Classification of Avangrid IT Budgets from 2018 to 2023.

Purpose/Justification	2018	2019	2020	2021	2022	2023	Total
Legal	782,354	3,846,300	1,547,500	1,341,000	1,690,700	959,915	33,348,386
Link To Comp. Act	1,396,374	1,613,400	1,330,000	-	492,101	550,000	9,093,149
Efficiency	12,494,325	2,106,164	3,992,518	3,023,113	3,803,081	25,928,376	51,518,577

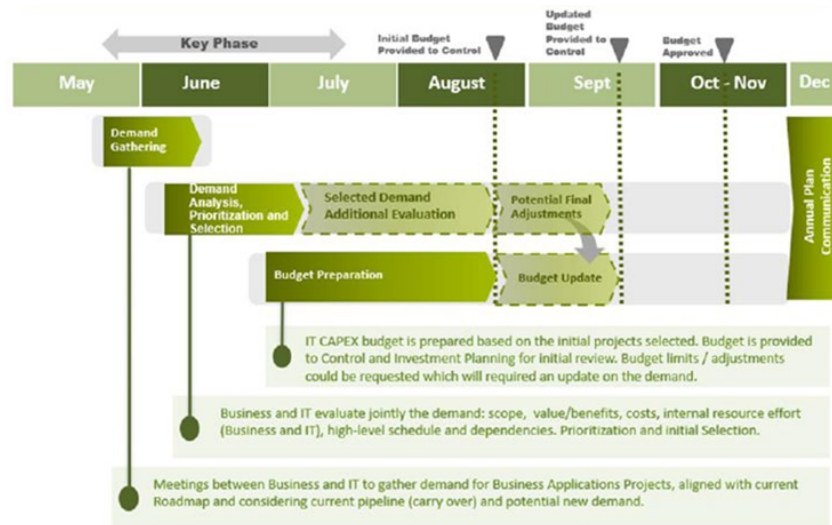
Tech Obsolescence	18,199,729	30,290,968	26,080,918	36,836,422	23,421,503	24,859,469	185,389,104
Strategy	19,615,690	17,121,168	32,667,379	14,374,200	20,091,620	8,116,731	122,649,236
Total	52,488,472	54,978,000	65,618,315	55,574,735	49,499,005	60,414,491	338,573,018

Source: DR 1197 Attachment 1.

All submitted PDDs are then evaluated for effort, resource skills required, and cost, along with discussions on high-level solutions. Further discussions are held with the business, IT leadership, and IT Subject Matter Experts (SMEs) to better understand requirements and objectives. All submitted requests are tracked in a Demand Tracking file, which monitors progress throughout the stages of maturity. The intent of these activities is to collect and prioritize all known future work requests, along with any remaining work from the current year that will continue into the next year. This allows IT leadership a better understanding of work effort, resource capacity, and financial needs as they establish the next year's financial plan.

This process is applied to the Business Units' proposed portfolio to determine projects that will move forward as part of the overall IT project portfolio.⁵ IT Leadership will then select in-scope work for the coming fiscal year.⁶ The schedule and activities performed during the Annual Portfolio Demand process are provided in **Exhibit XI-7**.

Exhibit XI-7 Annual Portfolio Demand Planning Process Schedule and Activities



Source: DR 91.

⁵ DR 61.

⁶ DR 91.

AMI

The NYSPSC issued an Order approving NYSEG's and RG&E's AMI programs in Cases 19-E-0378 et al. on November 19, 2020.⁷ The companies proposed development of information technology infrastructure and software applications to support AMI. NYSEG and RG&E designed a three-year plan to replace or upgrade customer meters and install a communications network by mid-2025. AMI programs are one of NYSEG's and RG&E's largest capital investments in recent years, valued at over \$500 million. The programs call for installation of new electric meters and modification of natural gas meters in their service territory of approximately 1.8 million meters.⁸

AMI Full Deployment Project Cost/Benefit Summary

NYSEG's and RG&E's approved rate plan provided for \$489.1M in capital investment (including contingency). Stated savings were projected at \$829M, using the societal cost test (SCT) and a cost of \$549.2M.⁹ The SCT test considers expected benefits and costs from the perspective of society, measuring net economic benefit to the utility service territory, state or region, as measured by the total resource cost test, plus indirect benefits such as environmental benefits.¹⁰

AMI Project Team Structure

The New York AMI Project team organization structure consists of the AMI Steering Committee at the top, with two Project Directors reporting to the AMI Steering Committee, as shown in **Exhibit XI-8**. The Project Management Office (PMO) and Global PMO are horizontal reports to Project Directors.

The following functions report to Project Directors:

- AMI Telecommunications Network
- AMI Operations
- Control Systems and Automation
- Cyber Assurance, Compliance and Infrastructure
- CRM&B Upgrades and Integrations
- OSG Non-SAP Integration (MDMS / HES)
- System Integrator/ Testing
- Meter Services
- Communications and Public Outreach
- Energy Manager

⁷ See Cases 19-E-0378 et al, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation for Electric and Gas Service, ORDER APPROVING ELECTRIC AND GAS RATE PLANS IN ACCORD WITH JOINT PROPOSAL, WITH MODIFICATIONS, Issued and Effective, November 19, 2020.

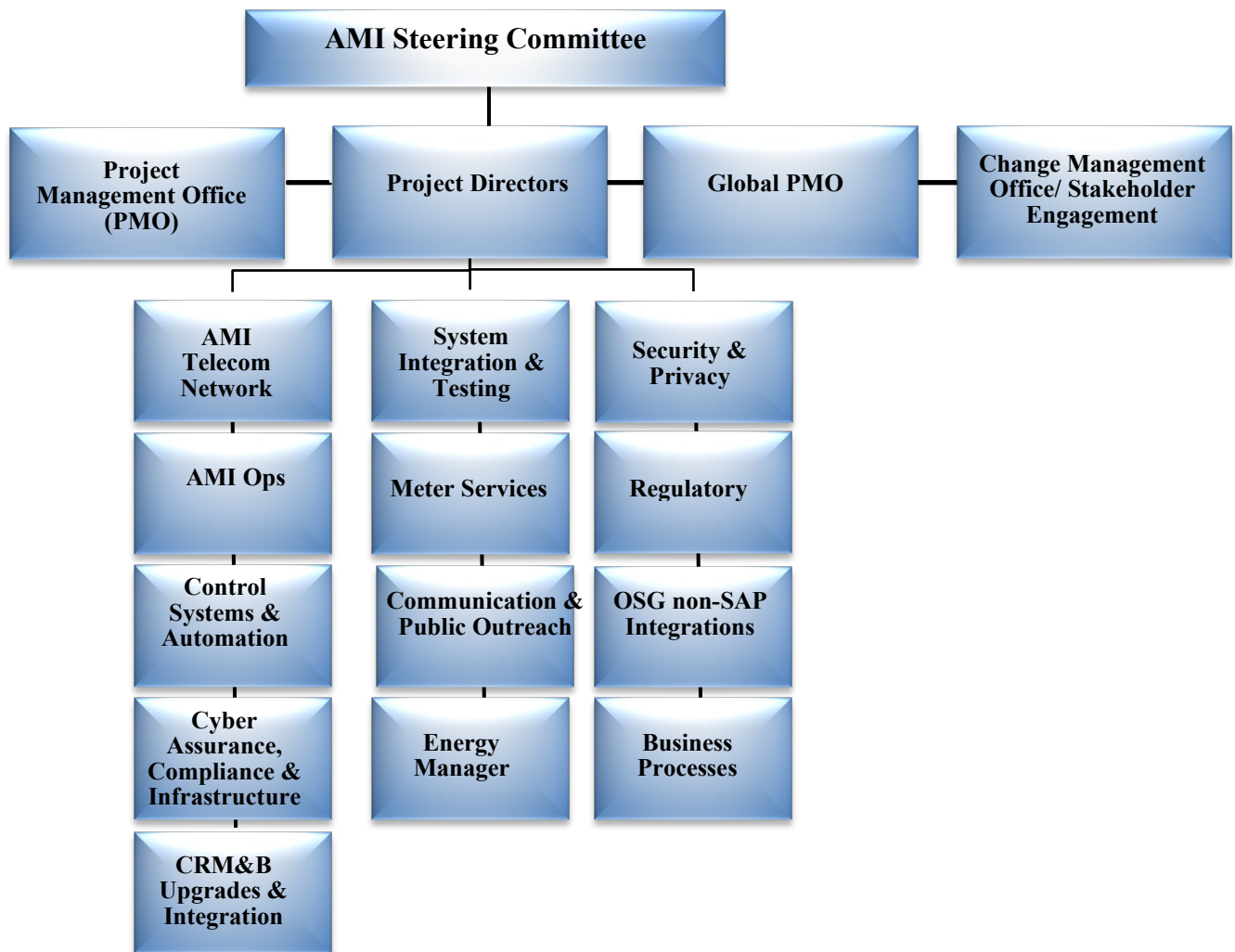
⁸ See Cases 19-E-0378 et al, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation for Electric and Gas Service, AMI Panel, May 20, 2019.

⁹ Case 19-E-0378, et al. (Order) November 19, 2020.

¹⁰ DR 945 Attachment A-1

- Business Processes
- Regulatory
- Security and Privacy
- Overview of AMI Architecture

Exhibit XI-8 AMI Project Team Structure



Source: DR 945 Supplement 3 Attachment 2.

Overview of AMI Architecture

AMI systems typically include the following components:

- **Smart meters** – Electric meters that record energy consumption, typically in intervals of an hour or less. These devices typically send data back to the utility company at least once daily.

- **Communications network** – Communication networks serve as the backbone of two-way communication between smart meters and the AMI head-end. They can be either wireless or wired, depending on specific topology of the system. These AMI networks carry data from smart meters to the head-end system and vice versa, allowing utility companies to send commands to meters (e.g., remote disconnect/reconnect, firmware updates, etc.).
- **AMI Head-End System (HES)** – The AMI head-end is the back-office system that controls advanced metering infrastructure. The meter network infrastructure consists of meters, access points and backhaul, plus aggregation points to bring data into the HES.
- **Meter Data Management System (MDMS)** – MDMS is software that stores and manages data from smart metering systems, which collect usage data and events from meters. MDM performs functions such as validation, estimation and editing (VEE) of meter data, and prepares data for other utility applications such as billing, customer information and outage management. MDMS serves as an intermediary grouping of systems used to receive and send data to the HES and Customer Care applications.

B. AUDIT SCOPE ITEMS

- Determine if information systems effectively support current utility operations.
- Determine the adequacy of short- and long-term information systems plans.
- Review the implementation of the programs/systems noted below and determine if they will achieve the intended goals in a cost-effective manner:
 - Advanced Metering Infrastructure
 - Geographic Information System
 - Gas Work Management System (see **Chapter VIII – Work Management**)
- Evaluate the capability of Customer Information Systems to meet current and future needs and determine the adequacy of plans to update or support the existing systems.
- Evaluate how the Companies select, consider alternatives, prioritize, determine the scope of, and implement information systems projects.
- Assess the effectiveness of the benefit/cost framework and the process to estimate costs and savings for decision-making regarding information systems.
- Assess the adequacy and accuracy of information provided to the Department related to information systems project selection, prioritization, and schedule, budget, and rate plan adherence. (see **Chapter VII – Project Management**)

C. FINDINGS AND CONCLUSIONS

1. The value of Avangrid’s short- and long-term information system plans are diminished due to flawed planning documents and project prioritization issues. Conclusions 2 and 3 provide additional detail.

2. Avangrid IT Project Definition Documents are deficient. Project priority is impaired due to inaccurate or insufficient information to judge projects based on merit.

- The PDDs are key input for IT leadership decision-making for project inclusion in long-term (i.e., IT Application Roadmap) and short-term (i.e., Annual IT Plan) plans. NorthStar requested all PDDs (initial and final) from 2021 to 2023. Avangrid stated:

“We do not keep track of the different versions of the PDDs.”¹¹

- Reviewing PDDs that were provided, NorthStar found that many do not include meaningful information, such as a credible project purpose/justification and investment classification, cost or benefit analysis, alternative analysis, and complete, comprehensive or accurate project cost estimates.

- Many PDDs lack a consistent, identifiable relationship to Purpose or Investment Classification.

- PDDs classified as “Legal” are mandated, but some documents lack justification to support this classification.
- A majority of PDDs classified as “Strategic” are not specifically mapped to the company’s strategic objectives, let alone do they specify the contribution made by the project toward that strategic objective. See Conclusion 2.
- Avangrid stated:

“In IT, we provide a service to the business areas which enable them to improve the efficiency of business operations by reducing costs or improving operational output and quality.”¹²

Many PDDs classified as “Efficiency” do not have any analysis of expected cost reduction, return on investment, or performance improvement. Many have aspirational statements of savings and efficiencies as a potential outcome of the project.

- PDDs lack a standard approach to risk analysis to compare project risk across the portfolio.
- PDDs lack benefit analysis – Avangrid documentation states that information related to benefits must be collected for all projects expressed in an estimated value, despite project purpose/justification. Many projects do not have any listed benefits

¹¹ DR 715.

¹² DR 1215.

or analysis, or lack reference to a monetary benefit value, or the provided input is not meaningful. Examples include the following:

“We will interact with customers in their preferred channel. We will offer customers convenient options and customizable service. We will ensure value for our customers and our shareholders.”¹³

“The benefit is to provide the business with an end to end fully supported damage assessment solution and process for all electric operating companies. This will help deliver to the business a solution which is fully supported and will reduce the risk of downtime during a storm event.”¹⁴

“Solution would replace the current in-house solution to a more user [friendly] version and would replace a COTS software to get all OPCOs on the same platform.”¹⁵

“Accurate information on assets installed underground by type and location; increased safety standards as a result of accurate records of materials installed underground; a robust Mobile GIS for data capture (Collector for ArcGIS); access to GIS data in the field beyond Track and Trace; Engineers can plan and use Collector for ArcGIS on offline mode as well in areas where there is bad connectivity.”¹⁶

“Provides efficiencies to end users avoiding time consuming work arounds and compatibility issues. Eliminates the need to support for multiple versions and servers.”¹⁷

“Reduced risk of NRA's due to accurate data and the ability to provide records to auditors. The [actual] value will be based on the accuracy of the records.”¹⁸

- Where benefits for IT projects are noted, Avangrid does not have any method of tracking savings and/or benefits resulting from IT projects to validate claims of efficiency or cost reduction.¹⁹
- NorthStar compared IT projects with an estimated cost equal to and greater than \$1M included the 2022 IT Annual Plan with CY 2022 cost estimates in PDDs. As shown in **Exhibit XI-9**, there are significant variances for many projects.²⁰

¹³ DR 715 Attachment 2, PDD-AGR-2021-NET-IT-06-Liferay WCM Implementation

¹⁴ DR 715 Attachment 2, AGR-2021-NET-IT-Damage Assessment

¹⁵ DR 715 Attachment 2, AGR-2022-NET-OP-02-Veg Mgt Platform

¹⁶ DR 715 Attachment 2, PDD-AGR-2022-NET-OP-06-Track Trace Full Implementation-CNG

¹⁷ DR 715 Attachment 2, PDD-AGR-2021-NETAPPS-OP-13-Contractor Portal

¹⁸ DR 715 Attachment 2, PDD-AGR-2022-NET-OPS-01-GAS DATA - NYSEG/RGE.

¹⁹ DR 724.

²⁰ DR 721 Attachment 7 and DR 715 Attachment 2.

Exhibit XI-9
Comparison of Project Definition Document Cost Estimate
to IT Plan Cost Estimates for CY 2022.

Project Name ²¹	Business	Investment Purpose/ Justification	PDD Cost Estimate	IT Annual Plan Cost Estimate	% Difference
PDD-AGR-2021-NET-IT-06-Liferay WCM Implementation	Customer	Strategy	\$250K	\$2.3M	820%
PDD-AGR-2022-NET-CS-02-Digital Journey EDB Transformation-All	Customer	Strategy	\$5M	\$2.6M	-48%
PDD-AGR-2021-NET-IT-05-Customer Insights-AGR	Customer	Strategy	\$2.6M	\$2.0M	-23%
AGR-2022-NET-IT-03-NY CMP PureEngage to PureConnect migration	Customer	Tech. Obsolescence	No PDD Provided	\$1.8M	N/A
AGR-2022-NET-IT-04-SAP Migration to HANA UIL ²²	Customer	Efficiency	\$1.6M	\$1.0M	-38%
AGR-2021-NET-IT-Damage Assessment	Network Operations	Efficiency	\$183K	\$1.1M	501%
AGR-2021-NET-IT-Click-Gas inspections and scheduling	Network Operations	Strategy	\$1.8M	\$1.8M	0%
AGR-2021-NET-OP-13-Contractor Portal	Network Operations	Strategy	\$240K	1.0M	317%
AGR-2021-NET-RPA Electric & Gas Operations	Network Operations	Efficiency	\$583K	\$1.3M	123%
AGR-2022-NET-SG-01-Esri UN Deployment-AGR	Smart Grid	Strategy	\$2.8M	\$2.8M	0%

Source: DRs 715 Attachment 2 and 721 Attachment 6.

- In 2022, IT included in the IT Plan a project for \$300K to comply with a “global low code initiative” although Avangrid has stated it does not have the capability to implement in the U.S. According to Avangrid, Low Code is:

“a new technology capability that provides a rapid application development environment using pre-designed components to build custom apps that can run seamlessly in browser or on mobile devices, transforming manual business processes to digital.”

“We do not have the means within the US to support the global initiative.”²³

²¹ Over 30 projects were funded by the Business and did not include cost estimates in the 2022 IT Plan – Networks.

²² References costs charged to NYSEG and RG&E.

²³ DR 715 Attachment 2. NETAPPS-PDD-2022-OP-11-Low Code-AGR

3. Avangrid does not have a standardized method for IT project selection and prioritization. The method of IT project prioritization and selection is inconsistent and subjective, and it focuses on Avangrid’s needs, rather than the specific needs of NYSEG and RG&E.

- NorthStar requested project-prioritization documentation used in the selection of IT projects prior to submission to Investment Planning.²⁴ Our review found the following:
 - Neither the Avangrid IT organization or businesses have formal procedure documentation, standard tools and templates, or a quantitative or qualitative rating/scoring methodology to guide project prioritization or selection.²⁵
 - Avangrid has stated that each specific Business area utilizes its own criteria in order to prioritize projects. Historically, there has not been a unified set of criteria or applicable formula to prioritize demands.²⁶
 - While Avangrid has stated that each Business area utilizes its own prioritization process, Avangrid provided prioritization scoring/rating results for one business organization only – Network Operations. Network Operations recently began “prioritizing” its IT projects in 2022 for inclusion in the 2023 IT portfolio. The scale and weighting used are provided in **Exhibit XI-10**. This prioritization scheme is not consistent with IT Investment Justification categories and does not align with Avangrid’s Investment Planning capital program/project prioritization ratings or scale. For more information on Investment Planning and other capital program/prioritization methodologies, see **Chapter VII – Project Management**.

Exhibit XI-10
Network Operations Prioritization Ratings and Scale Compared to IT Investment Justification Categories

IT Plan Investment Justification Category	Network Operations Justification Category	Network Operations Rating Scale	Network Operations Weight
Legal	Regulatory Mandate	0 – No Mandate 3 – Flexible Solution Acceptable 5 – Fixed and Urgent solution Required	10
Efficiency	Return on Investment or Efficiency	0 – No Net Return 3>5% ROI or \$50k efficiency 5>10% ROI or \$100k efficiency	7
N/A	Number of Internal and/or external users impacted if project not completed	0 – none impacted 1 – 100 impacted 2 – 250 impacted 3 – 500 impacted 4 – 1000 impacted	5

²⁴ For more information on the Investment Planning prioritization process, see Chapter VII – Project Management.

²⁵ DR 714 Supplement 2.

²⁶ DR 718.

		5 – 1500 impacted	
N/A	Community, Customer, Employees, Property in danger if project is not done	0 – No risk 3 – Moderate risk 5 – High risk	5
Strategy	Directly fits, driven by Key Corporate Strategic Objective	0 – No alignment 3 – Moderate alignment 5 – High alignment	5

Source: DRs 718 and 1164.

- The Network Operations IT project scoring/rating document was incomplete.²⁷ Furthermore, Avangrid has stated that Network Operations’ formula and criteria will vary each year.²⁸
- After IT and the Businesses review the IT Application Roadmap and assess PDDs and new projects, IT leadership then selects the in-scope work for the coming fiscal year.²⁹ The IT organization presents an annual IT plan to the Business for confirmation. Avangrid has stated:

“Once the IT pipeline is defined by IT leadership, it is presented to the different business area leads to confirm with them the selected initiatives for the following year.”³⁰

- IT projects are defined and justified from the perspective of Avangrid, not NYSEG and RG&E.
- Avangrid’s Annual Portfolio Demand process does not include reviews by NYSEG and RG&E leadership.³¹ IT project assessments and prioritizations for the Annual IT Plan are performed by Avangrid IT leadership, SMEs and business departments. Avangrid’s IT Plan Guidelines are as follow:

“Define the IT Annual Plan for AVANGRID with a consolidated and prioritized pipeline of Business Projects, aligned with AVANGRID Strategy and Roadmap and providing the expected value to AVANGRID”³²

- IT Annual Plan documentation includes five “Investment Justification” or Purpose categories. These are Legal, Strategy, Technology Obsolescence, Efficiency and Link to Company Activity.³³ Avangrid defines the Strategy category as:

“Strategy – Contributes to accomplishing a Business/Iberdrola or Avangrid Group strategic objective.”³⁴

²⁷ DR 718 Attachment 1.

²⁸ DR 718.

²⁹ DR 91.

³⁰ DR 714.

³¹ DRs 60, 61, 91, and 714

³² DR 57 Attachments 1, 2, and 3.

³³ DR 721 Attachment 5.

³⁴ DRs 718 Attachment 1 and 1164.

- Avangrid further stated that:

“Company’s strategic objectives and key themes for every year are a key consideration in the proposal and selection of projects for IT pipeline. The IT Roadmaps and IT portfolio presentations are presented to align with the strategic objective. The projects are grouped according to the investment purposes that are derived from these strategic objectives.”³⁵

- Avangrid’s response is misleading. When asked how IT projects categorized as “Strategy” support the delivery of strategic objectives codified in corporate strategic plans, Avangrid stated that it does not track a strategic objective in the company’s strategic plans to each project in the IT Roadmap or in the IT Annual Plan.³⁶
- Avangrid spent \$124.8M between 2018 and 2023 on “Strategy” related IT projects that, according to Avangrid, don’t relate to strategic objectives noted in strategic plans.³⁷
- Avangrid has a strategic planning process and documents. NYSEG and RG&E do not. For more information on strategic planning at Avangrid, see **Chapter III – Governance and Management**.

4. Avangrid’s information systems are challenged to effectively support core utility functions for NYSEG and RG&E. Avangrid is dependent on spreadsheet applications for asset management and Leak Prone Main (LPM) programs, while other functions and services are impacted by implementation and software upgrade delays.

- Avangrid does not have a technology platform to manage NYSEG and RG&E assets. No progress toward assessing different solutions has been made since Avangrid engaged a third-party consultant to assess the company’s asset management landscape. Avangrid’s use of internal spreadsheets will not meet NYSEG’s and RG&E’s asset-management needs. For more information, see **Chapter V – Electric Operations**.
- LocusView: Avangrid’s existing LocusView solution for field inspections was not IT-supported and not in line with company standards. Implementation of Field Workforce Mobility tablet solution based on Field Workforce Mobility is supposed to provide NYSEG’s and RG&E’s Gas groups with standard, IT-supported hardware and software, as well as a fully integrated solution with Global SAP. Providing a fully integrated end-to-end solution is supposed to better ensure compliance with company maintenance requirements and regulatory compliance for gas-related assets. Failure to comply with regulatory requirements puts all Avangrid gas companies at risk for fines and penalties. Field Workforce Mobility has been challenged by scope and schedule changes, and increasing project costs. For more information, see **Chapter VIII – Work Management**.

³⁵ DR 721.

³⁶ DR 721.

³⁷ DR 1197 Attachment 1.

- Geospatial Information System (GIS): A GIS helps utility companies manage and use information to execute core utility services. Information collected by utilities includes, but is not limited to, location coordinates of an asset or event; product name of an asset, its serial number, and the facility where it was manufactured. Other asset characteristics include temporal data, such as time an outage occurred with corresponding images of the event as it unfolded. Most sophisticated solutions display the utility's geospatial data digitally, via interactive maps that allow users to drill down and view pertinent details.
- There are many manual processes within the Avangrid Gas GIS system, where editors complete the following actions:
 - Geo-reference files to digitize data into GIS – as most of them are not spatially referenced.
 - Build footprints, road edges and rights-of-way that are manually maintained and digitized from aerial photography.
 - Manually add and digitize mains, services and regulators into the GIS from .TIFF or CAD file format. These are added with their respective gas fittings – valves, couplings, short stops, pipe breaks, end caps, reducers, test stations, locator boxes, etc.
 - Perform QA/QC reviews by forwarding specific work orders to another editor to review the job for accuracy (verification of connectivity, attributed information, and geographical placement) and then these are posted to the Parent/Default version of the Gas GIS.
- Avangrid has maintained a partial model of the NYSEG and RG&E gas network in its GIS, requiring that additional model information be maintained. The disconnect between master data and the GIS model caused issues.³⁸
- RG&E's gas services were not integrated into GIS. To align with NYSEG's GIS capabilities and enable consistent load and scenario analysis, a PDD was developed in 2021 to convert approximately 275,000 paper records into GIS. The requested start date was April 2021 with a delivery date of December 2022.³⁹ The RG&E Gas Service Conversion Project has been digitizing paper records into the GIS since January 2022 and is expected to be completed in April 2026.⁴⁰
- LPM Replacement Prioritization: The prior audit recognized that NYSEG and RG&E should automate LPM prioritization analysis. Avangrid decided that there was a high probability that any automated main replacement program implemented for the current GIS would not be compatible with the new GIS platform that was planned to start in June 2022. The delay resulted in a continuation of the manual process for main replacement prioritization and further utilization of consultant support. While the expense of an automated program was considered higher when compared to the cost for continued consultant support for main replacement analysis during the GIS platform

³⁸ DR 715 Attachment 2.

³⁹ DR 715 Attachment 1.

⁴⁰ Fact Verification.

transition period, continuing the current manual process includes the risk for human error in the LPM selection process.⁴¹ A PDD was created in 2023 for \$400K to develop this functionality as part of the new GIS platform; however, the new GIS platform implementation has not begun as of June 2024.⁴² For more information on LPM Replacement Program, risk and prioritization, see **Chapter IV – Gas Operations**.

- SAP CCS: SAP CCS applications include Call Center, Device Management, Credit and Collections, and Billing and Retail Access.
 - For much of the audit period, NYSEG and RG&E utilized manual processes and a third-party vendor to support Community Distributed Generation (CDG) Value Stack billing and crediting.⁴³ The cost of using third-party staff augmentation for the manual CDG Billing process from 2020 to 2023 was approximately \$8.2M.⁴⁴ The cost for CDG Value Stack Automation was originally estimated at \$1.3M with an in-service date of December 2021.⁴⁵ According to Avangrid, the CDG Value Stack Automation went live in Q4 2023.⁴⁶ Avangrid is moving from a process that requires manual calculation and application of CDG generation credits to subscriber accounts by converting 12 host projects per month to the automated solution with project completion anticipated in Q2 2025. Through June 2024 the project's actual spend was \$11.6M.⁴⁷
 - The CDG Billing Automation project impacted a number of other IT initiatives that were planned for 2023. Avangrid has stated that some NYSEG and RG&E IT-related "Regulatory Driven Efforts" were delayed because internal and external resources were reprioritized to ongoing CDG Billing Automation projects (UI-N0142, UI-R0113), which were off schedule.⁴⁸ For more information, see **Chapter V - Electric Operations**.
 - Coordination will be required with other billing-related customer service issues, and the project is dependent on other high priority initiatives that may take precedence (i.e., NY Rate Case, NY CRMB, NY AMI, other NY REV Initiatives).⁴⁹
- Contact Center Tools - Each contact center has a separate make-shift database that is not integrated with any customer handling channels. Meeting customer satisfaction expectations and internal/regulatory service level requirements while providing representatives with the tools/knowledge they need is challenging. According to Avangrid, Customer Service associated with this issue includes increased Average Handle Time, decreased customer satisfaction/experience, lower first call resolution and increased backlogs of email work. A PDD was developed in 2021 for

⁴¹ DR 1011 Attachment 1.

⁴² DRs 1010 and 715 Attachment 3. NETAPPS-PDD-2023-OP-03-Leak Prone Main Automation-AGR.

⁴³ DR 664.

⁴⁴ DR 664 Attachment 2.

⁴⁵ DR 1163.

⁴⁶ DR 1163.

⁴⁷ DR 1163, Fact Verification.

⁴⁸ DR 674 Attachment 1.

⁴⁹ DR 715 Attachment 2. AGR-2019-NET-CS-08-Automate NY CDG Billing - NY

implementation by December 2022.⁵⁰ The project was included in the IT Annual Plan for 2021 and 2022, but it has not been worked on or completed. Funds were included in the IP 2023 budget, but the project did not accumulate any costs.⁵¹

- Supervisory Control and Data Acquisition (SCADA) system: Avangrid has one SCADA/EMS/OMS system for both NYSEG and RG&E.⁵² The underlying SCADA infrastructure is at the end of life (+10 years).⁵³ SCADA data for the electric system are incomplete. As shown in **Exhibit XI-11**, the Remote Terminal Unit (RTU) installation and circuit breaker automation at NYSEG and RG&E has not been fully implemented.

Exhibit XI-11
RTU Installation at NYSEG and RG&E Substations

OpCo	# Not Installed	%	# Installed	%	Total
NYSEG	177	39	280	61	457
RG&E	71	41	104	59	175
Total	248	39	384	61	632

Circuit Breaker Automation at NYSEG and RG&E

OpCo	Automated		Indication Only		None		Total
	# of Breakers	%	# of Breakers	%	# of Breakers	%	
NYSEG	1,446	57	411	16.3	668	27	2,525
RG&E	1,304	55	439	18.6	620	26	2,363
Total	2,750	56	850	17.4	1,288	26	4,888

Source: DR 381.

- NYSEG and RG&E hosting-capacity maps are developed based on summer peak-load value, which is calculated from SCADA/Charts or ammeters (drag hands) and does not depend on hourly peaks for model generation. For discharging hosting-capacity maps, a calculated minimum peak-load percentage is used, rather than using SCADA to calculate actual minimum daytime load.
 - Current load interconnection and DER studies are completed based on worst-case scenario, which is either summer or winter peak and does not depend on interval data from SCADA.
 - For regional planning studies, Avangrid begins with SCADA hourly interval data if available. If hourly interval data are not available, the company relies on other data sources such as analog chart reads, ammeters (drag hands), customer usage data, load sensors and/or circuit SCADA devices (e.g., reclosers) where available.⁵⁴
- For more information, see Chapter V – Electric Operations.**

⁵⁰ DR 715 Attachment 1 and 2. PDD-AGR-2021-NET-CS-10-Contact Center Knowledge Database-AGR

⁵¹ DR 673 Attachment 1 and 674 Attachment 1.

⁵² DRs 70 and 111.

⁵³ DR 70.

⁵⁴ DR 393.

5. Avangrid did not comply with prior audit recommendation to conduct a study of commercially available main pipeline replacement-prioritization programs to evaluate benefits of a more robust solution than the spreadsheet currently being used.

- Recommendation 24.7 from the 2018 Management Audit stated:

“Conduct a study of various commercially available main replacement prioritization programs to evaluate the benefits of utilizing a more robust main replacement prioritization model as compared to its current internally developed spreadsheet/algorithm program. Based on the results of the study, the Companies should initiate converting its non-electronic records formats to electronic and purchase appropriate main replacement prioritization software.”⁵⁵

- Avangrid’s “study” was deficient and does not comply with the prior audit recommendation.
 - NorthStar requested a copy of the “study”. Avangrid provided a “Project Evaluation” instead.⁵⁶
 - No list of commercially available automated main replacement-prioritization programs or potential vendors were included in the “Project Evaluation”.
 - No evaluative methodology or decision-making criteria were provided in order to assess benefits of a commercially available automated main replacement-prioritization program.
 - No needs/requirements analysis was included in which to perform a comparative analysis between NYSEG and RG&E prerequisites and the functionality/specifications of a commercially available automated main replacement-prioritization programs was included in the project evaluation.
 - No evaluation of any commercially available automated main replacement-prioritization programs was performed.
 - No cost/benefit analysis was performed.
 - The only alternative analysis consisted of a “Chosen Option” – waiting for Avangrid’s future upgrades to the GIS platform.
- Avangrid’s chosen option for an automated main replacement-prioritization platform - ERSI Utility Program (GIS platform upgrade) – was scheduled to be in service by June 2022. As of June 2024, this project has not been initiated – approximately six years since NYSPSC approval of the prior audit.⁵⁷

⁵⁵ Comprehensive Management and Operations Audit of New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation, Case 16-M-0610, November 2018.

⁵⁶ DR 1011 and 1011 Attachment 1.

⁵⁷ DR 1010.

6. **Avangrid’s AMI System Performance reports lack sufficient information to conclude that overall system performance consistently meets specified performance criteria within the NYSEG and RG&E service area.**

- NorthStar’s experience is that AMI read-rate performance typically varies widely throughout a utility’s service area during an active AMI deployment, and the monitoring of performance is by deployment zones.
- NorthStar requested a sample of all reports used to track and monitor register and interval read rates. **Exhibit XI-12** is the only AMI System Performance information that Avangrid provided. The exhibit shows system performance criteria and results for a single week in June 2024.

Exhibit XI-12
Avangrid AMI System Performance
June 10, 2024 – June 16, 2024

Performance Criteria	Avangrid Daily Data Collection Report
99.5% for daily register reads by reads by 2:00 pm the next day	Register Reads Electric: Between 99.62% and 99.78% Gas: Between 99.00% and 99.64%
99.0% for daily interval reads by 4:00 pm the next day Residential meters – 15 min interval length, C&I meters – 5 min interval length.	Interval lengths not specified on report.

Source: DR 1107, DR 945-I Attachment 1

- Avangrid’s audit response was not comprehensive.
 - As shown in **Exhibit XI-12**, Avangrid provided only one week of information, displaying six-hour and 24-hour Load Profile Reads and Register Reads. One week of data is not sufficient to determine system performance consistency.
 - Avangrid did not provide metric definitions for what can be included and excluded in calculations. For example, there is no indication of endpoints included or not included in the report.
- The AMI System Performance report provided by Avangrid is deficient. The report does not:
 - Distinguish between residential and commercial.
 - Indicate a geographic area or utility (i.e., NYSEG or RG&E).
 - Provide interval reads or interval lengths.

7. Avangrid has not developed a mechanism to track and realize AMI benefits.

- Avangrid did not provide a model and/or workpapers used to quantify and track AMI benefits.⁵⁸
- Avangrid claims to have realized the following savings from its AMI program. However, no savings have been quantified to date.⁵⁹
 - **Savings from avoided distribution capital expenditures:** Savings from avoided distribution line-sensor deployment, avoided replacement of conventional meters, and avoided costs of bi-directional meters to support DER installations have been accruing as planned in the original benefit analysis.⁶⁰
 - **Savings anticipated from reduced meter-reading costs:** As AMI deployment progresses and reliable reads are established, Avangrid is using AMI register (not interval) data to bill customers.⁶¹
 - RG&E has achieved small reductions in the cost of a third-party meter-reading process, resulting from installed AMI meters providing billing data, which obviates the need for collection of manual meter reads.⁶²
- Progress reports to DPS on AMI Benefit Implementation Plan incorrectly states that “savings are being realized.”⁶³ This is inaccurate – no savings AMI-related have been quantified yet.

8. Avangrid did not consistently issue Requests for Proposals (RFP) to obtain competitive bids specific to the NYSEG / RG&E AMI Project products and services. A competitive procurement process for project services is critical for cost control and development of a credible cost-benefit analysis.

- A competitive procurement process is a key activity in project cost control. An RFP is a tool in the procurement process that encourages competition, provides a structured framework for responses, gauges vendor understanding of the goods/services to be provided, ensures transparency, promotes standardization and comparable costs for goods/services, and is an important input for a cost-benefit analysis.
- Avangrid did not issue RFPs for each AMI work area, as described in the AMI Panel testimony in Case 19-E-0378.
 - NYSPSC Order in Case 19-E-0378 et al. approved \$489.1M (including contingency) in funding for NYSEG’s and RG&E’s estimated five-year costs in

⁵⁸ DR 997.

⁵⁹ DR 947 Attachments 1 to 3.

⁶⁰ DR 997.

⁶¹ DR 989.

⁶² DR 997.

⁶³ See Cases 19-E-0378 et al, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation for Electric and Gas Service.

capital expenditures for implementation of AMI.⁶⁴ NYSEG's and RG&E's AMI Panel testimony outlined 11 major work areas where RFPs were issued for current pricing. The AMI Panel's testimony stated:

"The Companies issued multiple RFPs in 2017 and in 2018, to ensure current pricing of 11 required products and services to complete the AMI deployment and update the BCA."

The AMI Panel further stated:

"Bid responses were received for each of the RFPs, ensuring a strong basis for the costs included in the BCA."⁶⁵

- The NYSEG and RG&E AMI Panel's testimony did not clearly convey the following and plan deviations were not subsequently communicated: First, NYSEG and RG&E do not issue RFPs: procurement is handled by AMC. Second, NorthStar's review found three of 11 major workstream RFPs were not released.⁶⁶ Specifically, they were Network Canopy, AMI Network Solution, and Network Troubleshooting. Furthermore, RFPs for certain SAP CRM&B work to support AMI implementation were not issued.⁶⁷ Avangrid's rationale for bypassing the competitive bid process lack merit – changing technology for backhaul services and pre-existing framework agreements for vendors are not valid reasons.⁶⁸

9. Single-source contracts were issued for the AMI project. These contracts lack formal, documented justification.

- Avangrid's Finances and Resources document states that certain criteria need to be met for single sourcing. The document notes that the lack of time is not a justifiable reason for single sourcing. The use of a single source should be outstanding, and the justification should be impartial and obvious.⁶⁹
- NorthStar identified nine vendors with single-source AMI procurements for a spend totaling \$54M from 2017 to 2023. None of these vendors had documented justification for single-source procurement.⁷⁰
- In addition to non-competitive procurements, these vendors have additional issues, as outlined below:
 - A single-source award was given to a firm to manage the AMI communications network deployment because the contracted individual currently at the firm was a

⁶⁴ See Cases 19-E-0378 et al, ORDER APPROVING ELECTRIC AND GAS RATE PLANS IN ACCORD WITH JOINT PROPOSAL, WITH MODIFICATIONS, Issued and Effective, November 19, 2020.

⁶⁵ See Cases 19-E-0378 et al, AMI Panel Testimony, May 20, 2019.

⁶⁶ DR 945-H, DR 945-H Attachment 1, DR 1134

⁶⁷ DR 945-L Attachment 2 NY AMI/CRM&B

⁶⁸ DRs 1134 and 1128 Attachment 7 and 9.

⁶⁹ DR 1128 Supp 1 Attachment 9

⁷⁰ DRs 945 Supp 3 Attachment 1-4, 1128 Attachment 1-18, and 1128 Supp 1, NorthStar Analysis

former employee of an Avangrid affiliate. This employee led a network-installation effort in 2010 and 2011 at the affiliate.⁷¹

- Avangrid has stated that other vendors had existing framework agreements in place as a rationale for single-source procurement.⁷² Avangrid asserts that existing frameworks equate to competitive procurements. For more information on competitive procurement, see **Chapter XII – Procurement**.

10. Avangrid’s delivery of the AMI Project for NYSEG and RG&E lacks strong project management processes. Challenges include project cost control and reporting, risk management and analysis, and project performance.

- NorthStar’s review of Avangrid’s cost control framework for the NYSEG and RG&E AMI Project found:
 - Avangrid is managing the AMI Project to a total project cost. **Exhibit XI-13** provides the AMI Project budget compared to estimated project completion costs. The exhibit shows large variances in some cost categories, yet the project is estimated to be overspent by \$12.5M. Avangrid shows that recovery of the \$12.5M is dependent on anticipated vendor credits to be issued to offset costs.⁷³
 - As shown in **Exhibit XI-13**, Avangrid did not budget for AFUDC. The Cost/Benefit Analysis filed in Case 19-E-0378, et al. did not include AFUDC funds.⁷⁴
 - Avangrid distributed contingency funds to workstream budgets without justification. Contingency should only be used to offset costs associated with specific project risks identified during ongoing project risk analysis (i.e., “known unknowns”) or costs associated with issues determined to be beyond management control (i.e., “unknown unknowns”). Allocation of contingency funds to workstream budgets will:
 - Impact project-performance reporting.
 - Undermine formal control and reporting of contingency expenditure separate from project workstream budgets.
 - Inflate workstream budgets.

⁷¹ DR 1128.

⁷² DRs 1128 Attachment 1 and 1128 Supp 2

⁷³ DR 1181

⁷⁴ See Cases 19-E-0378 et al, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation for Electric and Gas Service, AMI Panel Exhibits, May 20, 2019.

Exhibit XI-13
Original AMI Project Budget and Estimated AMI Project Costs at Project Completion
(\$)

Cost Category	Original Project Budget	Estimated Project Cost through end of Project (2025)	Variance (under)	Projected Variance to Original Budget	Notes
Costs					
Meter Services Equipment and Services	\$241,709,576	\$259,902,077	\$18,192,501	8%	
Telecom Equipment and Services	\$31,389,649	\$64,729,709	\$33,340,060	106%	
CRM&B Equipment and Services	\$62,222,186	\$51,960,956	(\$10,261,230)	(16%)	
Time Variable Pricing Implementation	n/a	\$1,310,000	\$1,310,000		Not Started [Note 1]
HES-MDMS Equipment and Services	\$39,073,339	\$46,369,992	\$7,195,545	18%	
Internal Support for Workstream Activities	\$54,143,937	\$35,838,902	(\$18,305,035)	(34%)	
Project Management Services	\$13,328,435	\$16,282,443	\$2,954,008	22%	
AFUDC	\$0	\$7,085,788	\$7,085,788	No budget	
Occupancy Overheads	\$2,707,197	\$2,329,933	\$377,264	(14%)	
Web Portal Services	\$2,990,997	\$5,080,515	\$2,089,518	70%	Completed
Customer Outreach and Engagement Services	\$7,697,097	\$10,786,866	\$3,089,769	40%	
Contingency	\$33,788,098	Distributed to workstream budgets			
Total Costs:	\$489,050,511	\$503,906,006	\$12,525,562		
Anticipated Credits					
Volume Meter Price Discount	\$0	\$2,726,000			
ESC Discount	\$0	\$1,500,000			
Network Discount	\$0	\$8,300,000			
Total Credits:		\$12,526,000			
Project Total					
Total:	\$489,050,511	\$489,050,072			

Note 1: Time Variable Rates is included in RFP for CRM Integration (with CRM&B). TVR is reported separately because the effort has not started but budget is part of CRM&B.

Source: DR 1108 (response date 6/28/2024), DR 1181 (7/19/2024), NorthStar Analysis

- NorthStar reviewed a vendor contract for supply of AMI meters, modules and collectors. The review indicates deficiencies in contract monitoring, change-order controls, and invoice verification.
 - As of April 2024, invoiced amount for single-phase and network meters has exceeded contracted amount by \$14M (147K units) without triggering a change order. Although the overspend is likely attributable to secondary meter manufacturers not having executed contracts, a contract change order should have been triggered.⁷⁵
 - The product Socketap 5.0, AT&T 1S/2S/12S/25S ring and ringless collectors was not present on the pricing schedule of the vendor contract, but was able to

⁷⁵ DR-945-I Attachment 1.

be ordered, invoiced and paid for with project funds without a change order. The amount of this equipment was over \$2.3M (1,165 units).⁷⁶

- The AMI project’s financial reporting process is manual and dependent on SAP transactions correctly entered into the system and assigned to appropriate WBS#. The AMI project team states they review all goods receipts to approve invoices, and invoices can only be registered in SAP when there is an approved goods receipt. However, NorthStar found insufficient quality checks in place to ensure project reporting accuracy.
 - Manual financial reporting: AMI project costs are manually categorized and entered into a spreadsheet to report on workstream costs.⁷⁷
 - Internal Labor Costs: There is a lack of traceability for internal labor costs. Avangrid could not provide a report to directly link employee labor hours to project costs. The labor report provided shows 353 unique individuals who have charged time to the project as of yearend 2023.
 - External Vendor Costs: NorthStar’s invoice testing comparison to SAP project reporting extract found the following issues with transaction matching:
 - Vendor invoice PO number and amount could not be found in SAP extract.⁷⁸
 - Vendor invoice could not be matched on amount.⁷⁹
 - Some invoiced work is not included in AMI Project scope.⁸⁰
 - Cost Forecasting – Forecasted costs increased significantly in a three-week time span, according to data responses provided to NorthStar. Meter Services Equipment and Services increased from \$255.6M to \$259.9M. Similarly, Telecom Equipment and Services increased from \$56.4M to \$64.7M.⁸¹
- Avangrid’s enterprise and project risk registers have no value and are not credible risk-management tools at the enterprise or project levels for the AMI Project.
 - Avangrid’s Enterprise Risk Management (ERM) group’s risk-mitigation activities for the AMI Project are largely project updates. For more information on ERM, see **Chapter III – Governance and Management**.

“Project moving forward according the [sic] plan”

“As of 1/19/2023, we have installed a total of 7,905 endpoints out of 8,493 attempts with 73 field opt-outs (<1% opt out rate).”⁸²

⁷⁶ DR 945-K Attachment 4

⁷⁷ DR 945-K Supplement 1, Attachment 4a.

⁷⁸ DR 1128 Attachment 8, DR 1128 Attachment 10

⁷⁹ DR 1128 Supp 1 Attachment 1

⁸⁰ DR 1128 Attachment 18

⁸¹ DRs 1108 and 1181

⁸² DR 1106 Attachment 2

- A risk-mitigation activity in the ERM group’s risk register for the AMI Project states:

“Recently approved NY JP allows for capital cost recovery of \$489.1M with the ability to request recovery for cost overruns.”⁸³

- The ability to request recovery for project overspending is not a particularly compelling or credible risk-mitigation activity for poor cost estimating and/or poor project management.
- The AMI Project’s project risk register is not comprehensive or useful, and lacks any analytical relationship to the budgeted \$34M in contingency funds.
 - The project risk register has not been maintained as the project has progressed. The project register contains 52 identified risks, with the majority identified pre-deployment in 2021. Only two additional risks have been added since 2021.
 - All 52 risks lack any quantitative analysis indicating potential financial impact.
 - The project risk register is incomplete – there are numerous missing fields for risk entries. Some risks rated as “high” impact lack mitigation plans. Where there are entries for identified risks, some are illogical. A selection of high risks without mitigation plans note status as “Done”. It is unclear how a high-risk factor without a mitigation plan could possibly have a status of “Done”.⁸⁴
- The AMI Project does not utilize an industry-accepted work breakdown structure (WBS). **Exhibit XI-14** represents the AMI Project’s WBS.

⁸³ DR 1106 Attachment 2.

⁸⁴ DR 1106 Attachment 1.

Exhibit XI-14 **AMI Project WBS – NYSEG and RG&E**

S.. L...	WBS element	Description	Short ID	Typ	Pri	Su	PE	Acct
☐	1	UH-N0000596	NYSEG - AMI Hardware/Software-Cap	UH-N0000596	24	☒	☐	☒
☐	1	UH-N0000597	NYSEG - AMI Meters-Cap	UH-N0000597	24	☒	☐	☒
☐	1	UH-N0000598	NYSEG - AMI Network Communications-Cap	UH-N0000598	24	☒	☐	☒
☐	1	UH-N0000599	NYSEG - AMI Project-OM	UH-N0000599	18	☒	☐	☒
☐	1	UH-N0000616	NYSEG - AMI Project-Deferrable OM	UH-N0000616	18	☒	☐	☒
☐	1	UH-N0000617	NYSEG - AMI Project-Training	UH-N0000617	18	☒	☐	☒
☐	1	UH-N0005605	NYSEG - AMI Project OPEX	UH-N0005605	18	☒	☐	☒
☐	1	UH-N0005988	NYSEG - NY AMI Deferrable Costs	UH-N0005988	18	☒	☐	☒

S.. L...	WBS element	Description	Short ID	Typ	Pri	Su	PE	Acct
☐	1	UH-R0000636	RGE - AMI Hardware/Software-Cap	UH-R0000636	24	☒	☐	☒
☐	1	UH-R0000637	RGE - AMI Meters-Cap	UH-R0000637	24	☒	☐	☒
☐	1	UH-R0000638	RGE - AMI Network Communications-Cap	UH-R0000638	24	☒	☐	☒
☐	1	UH-R0000639	RGE - AMI Project-OM	UH-R0000639	18	☒	☐	☒
☐	1	UH-R0000669	RGE - AMI Project-Deferrable OM	UH-R0000669	18	☒	☐	☒
☐	1	UH-R0000670	RGE - AMI Project-Training	UH-R0000670	18	☒	☐	☒
☐	1	UH-R0005335	RGE - AMI Project OPEX	UH-R0005335	18	☒	☐	☒
☐	1	UH-R0005630	RGE - NY AMI Deferrable Costs	UH-R0005630	18	☒	☐	☒

Source: DR 1181

- Avangrid identifies a WBS as including AMI Hardware/Software -Cap, AMI Meters – Cap, AMI Projects-Training, etc. This is not a WBS, but rather groups of cost categories. These costs do not necessarily represent earned value for expenditures or tie to a delivered work product. Therefore, Avangrid cannot demonstrate earned value of funds expended during the AMI Project – and not until the entire project is complete. For more information on WBS, see **Chapter VII – Project Management**.
- Avangrid measures project progress by the number of actual meter and ERTs installed compared to forecasted installations to calculate a percent complete.⁸⁵ These metrics are represented for daily and annual targets.⁸⁶ Daily and annual installation targets may be achieved but have no direct relationship to earned value for dollars spent.
- Avangrid has not engaged a third-party to perform an assessment of its IT project delivery practices during the audit period.⁸⁷

⁸⁵ DR 1181.

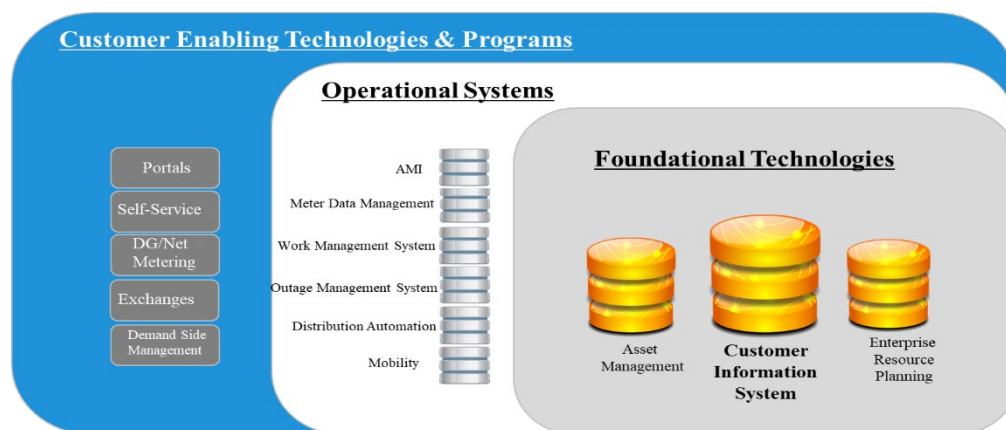
⁸⁶ DR 1181 e Attachment 1.

⁸⁷ DR 1167.

11. Avangrid does not have an application roadmap to plan current and future Customer Information System (CIS) needs. Avangrid cannot demonstrate a clear plan for CIS technology development or informed decision-making about resource allocation, project prioritization, or alignment of CIS development with NYSEG and RG&E business objectives.

- A CIS is one of the key, foundational platforms essential to the execution of critical utility services. The CIS is central to supporting processes such as metering, billing, credit and collections, services orders and revenue reporting. A utility's CIS is its primary repository of data that are leveraged by many other customer-enabling technologies and programs, plus operational systems, as illustrated in **Exhibit XI-15**.

**Exhibit XI-15
The CIS Operating Ecosystem**



Source: NorthStar Consulting Group

- A CIS must be properly maintained and upgraded to enable seamless integration with other existing critical systems, plus those proposed to improve future customer experience. As the role of the utility evolves with the introduction of new business functions and regulatory mandates (e.g., interval billing, CDG and Value Stack billing, etc.), complex systems, such as the CIS, require creation of application roadmaps to guide future development of core business platforms and infrastructure to support future utility and customer needs.
- An application roadmap is a strategic tool that outlines evolution of a software platform within an organization over a specified timeframe. A well-defined roadmap would demonstrate how CIS development is aligned with NYSEG and RG&E business objectives; provide a clear view of upcoming projects to plan resources; identify potential interdependency risk, security issues, and integration challenges; and support management decision-making and stakeholder communication.
- NorthStar requested CIS plans and roadmap to assess how Avangrid plans to meet NYSEG's and RG&E's current and future needs.

- Avangrid’s response was limited to the current CIS software version, a brief description of a September 2022 CIS software upgrade and other related implementations, and expiration of the CIS maintenance contract in 2027.
 - Avangrid has stated that an assessment was in progress to analyze customer billing instances and potential to standardize operating utilities on a single back-office/billing platform, as well as a front office/contact center solution.
 - The assessment, roadmap and timeline for the implementation was originally scheduled to be completed in Q4 2023 – these deliverables were delayed until Q4 2024.⁸⁸
- Stage-one implementation of CDG and Value Stack automation for billing was completed in Q4 2023. The current host-conversion schedule is forecasted to be completed by Q2 2025.⁸⁹ For more information on CDG and Value Stack Automation billing and challenges, see Conclusion 4 and **Chapter V - Electric Operations**.
 - Avangrid has not made progress on interval billing. Avangrid has stated that:

“[T]here has been limited activity on the AMI interval billing project which has not required AMI steering committee or other executive review.”⁹⁰

12. Avangrid’s allocation of IT project costs to NYSEG and RG&E lacks transparency. Information provided prohibits determination of how NYSEG’s and RG&E’s allocated costs are commensurate with project benefits.

- NorthStar selected five projects with large variations between budget versus actual spend between 2018 and 2023. Selected projects are displayed in **Exhibit XI-16**.

⁸⁸ DRs 54 and 727

⁸⁹ DR 1163

⁹⁰ DR 1181-h

Exhibit XI-16
Selected IT Projects Budgets vs Actual Allocations from 2018 to 2023

Project Name	Brief Project Description	Avangrid Total Initial Budget [Note 1]	Avangrid Actual Total Spend [Note 2]	NYSE / RG&E Initial Allocated Budget [Note 3]	NYSE / RG&E Final Allocated Spend [Note 4]
East Coast Data Center Consolidation (12974) In service since 6/30/2020.	Project to consolidate all infrastructure in a single datacenter.	\$2.46M	\$3.21M	\$1.41M 57%	\$2.25M 70%
NET-Workload Management and Optimization (RPA) (16724) In service since 3/7/2023.	Foundational Robotics Process Automation project.	\$3.03M	\$4.19M	\$2.18M 72%	\$4.19M 100%
IOC-NET-END-USER LC (17721) Completed. (2020 annual).	Mechanism to fund laptops, desktops, and monitors, applications.	\$2.071M	\$3.02M	\$1.55M 75%	\$2.93M 79%
NET-Metering & Mobility IT Systems Upgrade (18392) In Service since 5/20/2021.	Project to upgrade systems that interact with SAP to be ready for the CRM&B & AMI deployment.	\$400k	\$4.48M	400k 100%	3.90M 87%
NET-Liferay WCM Implementation (19176). In service since 3/7/2023.	Avangrid Network and Renewable websites.	\$2.52M	\$6.10M	1.43M 56%	2.79M 46%

Note 1: Based on all Avangrid entities combined project budgets (initial annual plan budget) during 2018-2023.

Note 2: Based on all Avangrid entities combined actual project spend during 2018-2023.

Note 3: Based on NYSEG & RG&E combined total project budgets divided by Avangrid Total Budget.

Note 4: Based on NYSEG & RG&E combined total actual spend divided by Avangrid Total Actual spend.

Source: DR 60, DR 783

- NorthStar requested project-variance details. Cost-variance explanations lack analytical substance and were largely attributed to high-level causes, such as poor project planning, budget changes and scope changes.
- As represented above, all five projects are part of a larger Avangrid portfolio. That is, the projects are not stand-alone projects developed solely for NYSEG or RG&E purposes. These projects were for the benefit of multiple Avangrid utility companies.
- Project costs were allocated among Avangrid entities as shown in **Exhibit XI-17**.

Exhibit XI-17
Final Allocations of Selected Avangrid Projects
% of Cost (rounded)

Avangrid ENTITY	East Coast Data Center Consolid.	NET-Workload Mngmt and Optimizati on (RPA)	IOC-NET-END-USER LC (User Equip.)	NET-Metering & Mobility IT Systems Upgrade	NET-Liferay WCM Implement.
Avangrid Networks					% Allocated
BGC					2%
CMP	28%	0% [Note 3]	21%	6%	18%
CNG					5%
NYSEG	43%	58%	52%	57%	32%
RGE	27%	42%	27%	30%	16%
SCG					6%
UI	2%			7%	22%
Total:	100%	100%	100%	100%	100%
Avangrid Renewables					
Avangrid Renewables					[Note 1]
NYSEG / RG&E Allocations					
\$ Project Total:	\$3,213,786	\$4,193,678	\$3,716,727	\$4,477,965	\$6,099,369
\$ NYSEG / RG&E	\$2,252,699	\$4,193,678	\$2,928,026	\$3,908,737	\$2,787,040
% NYSEG / RG&E	70%	100%	75%	87%	48%
Allocation Methodology	Not Provided	Not Provided	Not Provided	Not Provided	Mass. Formula [Note 2]

Note 1: Avangrid Renewables incurred a \$161k charge for this project.

Note 2: Massachusetts Formula used for allocation.

Note 3: Original Budget allocated 28% of the project costs to CMP.

Source: DR 60, DR 719, DR 728, DR 783

- As shown in the exhibit above, the Liferay project, which used the Massachusetts formula to allocate costs was the only project for which cost-allocation methodology was provided. Otherwise, documentation shows no clear reason for project allocations. See examples listed below:⁹¹
 - East Coast Data Center: Avangrid has stated that all Avangrid Companies benefited, but NYSEG and RG&E were allocated 70 percent of total project costs.⁹²
 - Workload Management and Optimization (RPA): Avangrid has stated that the project platform is used by all Avangrid entities, but NYSEG and RG&E were allocated 100 percent of total project costs.⁹³

⁹¹ DRs 60 and 783

⁹² DR 1126

⁹³ DR 1126

- Metering and Mobility IT Systems Upgrade: The project is said to benefit only New York Avangrid entities. However, this explanation does not clarify why other entities were allocated a portion of project costs.⁹⁴
- IOC-NET-END-USER LC (laptops, monitors replacement): Avangrid provided evidence of equipment assignments and costs to support \$1.4M of the \$2.9M cost allocated to NYSEG and RG&E. NorthStar identified 31 employees that were marked as NYSEG and RG&E employees. However, 30 were ASC or AMC employees and one was an employee of a regulated affiliate in Maine.⁹⁵
- For more information on cost allocations, See **Chapter IV – Budget and Finance**.

D. RECOMMENDATIONS

1. Develop formal documentation and standardized templates to support management decision-making for IT project selection and prioritization. Documentation and templates must be aligned with and support Investment Planning’s prioritization processes.
2. Complete all IT PDDs according to Avangrid’s documented instructions. Ensure all PDDs include comprehensive documentation of project purpose/justification, detailed cost estimates, cost-benefit analysis, estimated efficiency (ROI, quantified performance/process improvements, etc.), and standardized risk analysis. Each project should clearly map to specific NYSEG and RG&E strategic objectives.
3. Develop a standardized method to track and report progress toward and attained benefit realization for each IT project. Provide annual reports to DPS.
4. Perform closer monitoring of AMI-installed endpoints that are not communicating and develop cost estimates based on anticipated solution category.
5. Create a model to track and quantify AMI benefits and review with DPS.
6. Adhere to procurement policies. Require a formal justification document to be completed and included with all single-source and sole-source contracts.
7. Engage a third-party to perform an independent and thorough study of Avangrid’s IT project delivery practices. Incorporate recommendations into IT project management policies and procedures. Provide a full copy of the study results and revised policies and procedures to DPS.
8. Adhere to formal project management practices, with proper monitoring and controls. This includes but is not limited to the following:
 - 8.1. Use Earned Value Management to measure project performance.
 - 8.2. Ensure project financial health is presented to stakeholders in a transparent manner and not subject to interpretation. Include workstream by budget.

⁹⁴ DRs 783 and 1126

⁹⁵ DR 1 Supplement Attachment 2 and DR 1127 Supplement Attachment 1.

- 8.3. Ensure all work efforts, including work areas not started, are communicated to stakeholders with cost estimates and that work is reflected in project schedule.
 - 8.4. Include system performance by deployment region on stakeholder reports.
 - 8.5. Perform quality reviews to ensure that invoices and SAP amounts match – and that transactions are for AMI Project, within scope, and match contract-pricing schedule.
 - 8.6. Implement controls for contract-value monitoring and ensure products are not able to be ordered unless contracted for.
 - 8.7. Maintain risk register with impact analysis.
 - 8.8. Develop SAP reporting for increased visibility into internal and external costs.
9. Formally disclose AMI AFUDC and all other AMI expenses as well as all other AMI plan deviations not captured in prior Rate Case testimony / workpapers to the DPS.
 10. Complete CIS assessment and roadmap. Provide assessment, roadmap and workpapers as part of a detailed presentation for DPS.
 11. Perform an annual comprehensive assessment to determine what routine manual work is completed outside of CIS and determine cost to business. Perform cost-benefit analysis for CIS change.
 12. Ensure vendor costs are directly charged for work performed on behalf of specific utilities. Where costs cannot be directly charged, clearly document planned allocation methodology and reasons for adjustments.
 13. Ensure that Budget Transfer forms include the name of approver and approval date fields.
 14. Initiate an independent review with DPS oversight of AMI and other IT projects to quantify the cost of unreasonable management.

XII. PROCUREMENT

This chapter addresses the effectiveness of the Avangrid Management Company (AMC) procurement function performed on behalf of NYSEG and RG&E, along with procurement process transparency.

A. BACKGROUND

In general, the purchasing function obtains all materials and services necessary for the enterprise's operations. Procurement helps organizations find reliable, diverse suppliers, with competitive prices, and services that match operational requirements. Minimizing costs through competitive and transparent bidding processes is an important aspect of a company's procurement process. But it's also vital to identify suppliers that provide quality goods and services, have the capacity to reliably deliver, and show a documented track record of doing so. Recent supply-chain constraints and shortages of specialized resources have resulted in significant price increases and delivery delays, all of which challenge utilities' ability to obtain products and services. Critical equipment that could be ordered and delivered within a few weeks prior to the COVID-19 pandemic now may be backlogged for months. In addition, shortages of specialized, contracted personnel have impacted delivery of important capital projects and maintenance programs. Out of necessity, utilities have diversified their vendor pools – but this action also requires enhanced risk-mitigation and control strategies at the sourcing, contracting, purchasing and payment phases when working with untested suppliers.

In June 2022, the NYSPSC initiated a proceeding requiring New York electric, gas and water utilities to develop Diversity, Equity, and Inclusion (DEI) plans (Case 22-M-0314). The NYSPSC noted that these plans should identify strategies to increase supplier diversity, including, but not limited to, formal supplier diversity programs, partnerships with external organizations, mentorship of suppliers, and communication efforts with potential vendors.¹ In June 2023, NYSEG and RG&E filed their DEI plan, along with their Supplier Diversity Plan.²

This audit evaluated Avangrid's procurement function, processes and supplier diversity program.

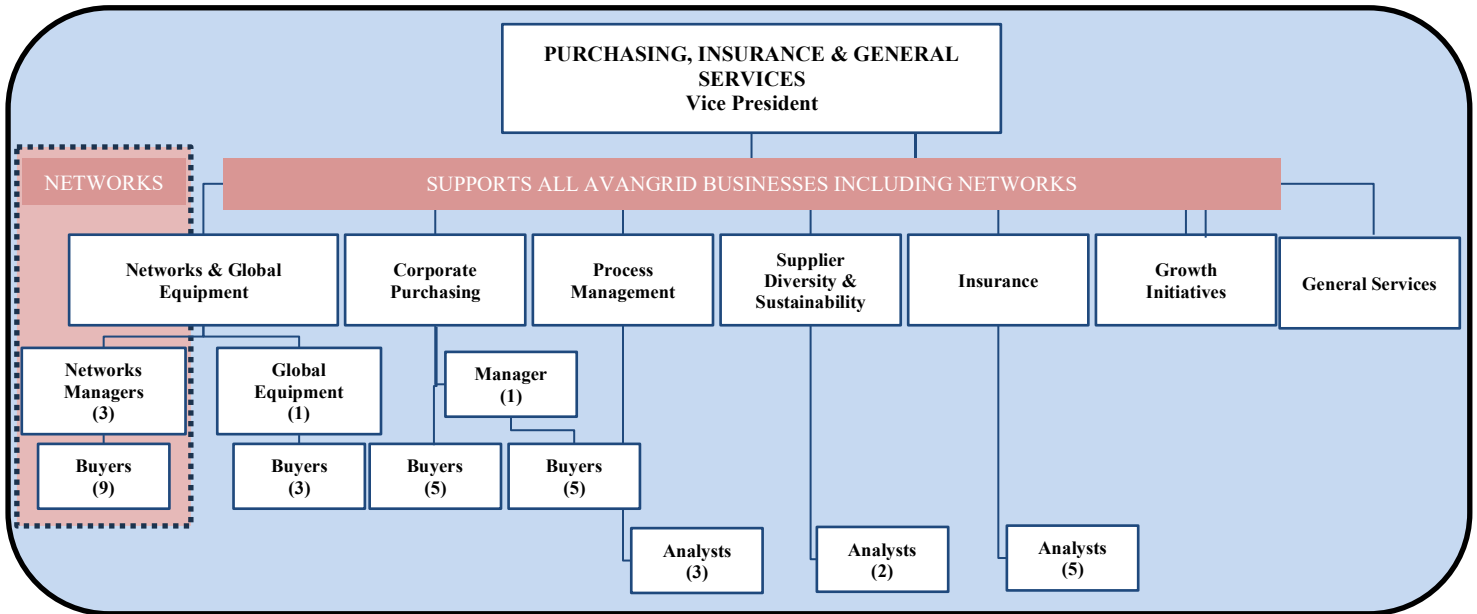
NYSEG and RG&E Purchasing, Insurance and General Service functions are performed by Avangrid Management Company, LLC (AMC) employees, an unregulated Avangrid, Inc. subsidiary.³ Two different purchasing organizations were presented during the audit – and are shown in **Exhibit XII-1** and **Exhibit XII-2**.

¹ Case 22-M-0314 - Proceeding to Review Utilities' Diversity, Equity, and Inclusion Practices. Order Initiating Proceeding, June 16, 2022.

² Case 22-M-0314 - Proceeding to Review Utilities' Diversity, Equity, and Inclusion Practices. Avangrid DEI and Supplier Diversity Program, June 5, 2023.

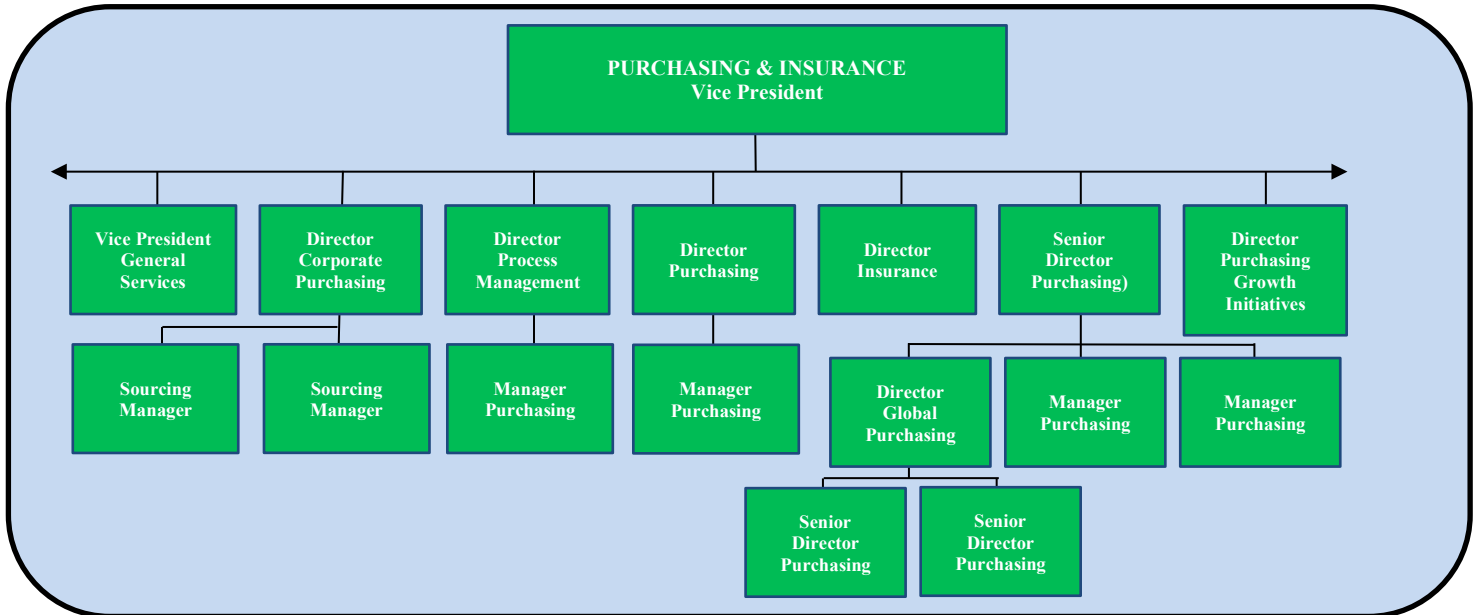
³ DR 26, page 101

Exhibit XII-1 Avangrid Purchasing Organization



Source: DR 26 page 101 of 119

Exhibit XII-2 Avangrid Purchasing, Insurance and General Services Organization (related to or impacting NYSEG or RG&E)



Source: DR 1, pages 129 and 133

B. AUDIT SCOPE ITEMS

- Determine if the Companies are utilizing the most cost-effective means to procure goods and services, assess the transparency of procurement processes, the level of competitively bid contracts, and associated internal controls and tracking mechanisms.
- Assess the Companies' Supplier Diversity Program (SDP) and identify any changes that will help the Companies achieve the goals of the program.

C. FINDINGS AND CONCLUSIONS

1. Avangrid's Purchasing, Insurance and General Services organization is structured to support AMC regional operations, not individual subsidiary utilities such as NYSEG and RG&E. There is no NYSEG or RG&E procurement function.

- **Exhibits XII-1 and XII-2** show discrepancies in terms of functions, resource levels and reporting relationships. More importantly, both illustrate an organization that supports AMC.⁴
- The Avangrid procurement governance model notes that the purchasing procedure provides guidance to comply with the Avangrid Purchasing Risk Policy and defines roles and responsibilities of the Purchasing Department & the Requesting Business Organizations.⁵

"This Purchasing Procedure provides guidance to comply with the Avangrid Purchasing Risk Policy for the AVANGRID Group which establishes a global framework for monitoring and managing the risk resulting from the purchasing activities undertaken for the procurement or contracting of equipment, materials, works and services throughout the Group."⁶

- The Avangrid Procurement Affiliate Transaction Standards of Conduct Policy states:

"This Procurement Affiliate Transaction Standards of Conduct Policy ("Policy") addresses the standards of conduct that will be followed by Avangrid Purchasing ("Purchasing") in providing purchasing services for Avangrid Networks regulated utility subsidiaries (e.g., New York State Electric & Gas Corporation, Rochester Gas and Electric Corporation, Central Maine Power Company, Maine Electric Power Company, The United Illuminating Company, The Berkshire Gas Company, Connecticut Natural Gas Corporation, Maine Natural Gas Corporation, and The Southern Connecticut Gas Company (collectively referred to as the "Regulated Utilities")).⁷

⁴ DR 1 and DR 26

⁵ DR 26

⁶ DR 233 and Attachment 1

⁷ DR 233 and Attachment 2 August 30, 2016 – page 39 of 40

“Purchasing and employees of the Regulated Utilities shall adhere to these Standards of Conduct governing the relationships between the Regulated Utilities and other affiliates of AVANGRID.”

- AMC defines the overall framework for the Purchasing Process, determines how Avangrid manages procurement-related risk, and establishes the following General Guidelines:⁸
 - Transparency requirement – three valid offers in sealed bids, award to lowest valid bidder, sole source only as justified and documented exception.⁹
 - Segregation of Duties – defined in Purchasing Risk Policy.¹⁰
 - Ethical Commitment – defined in Purchasing Risk Policy.¹¹
 - Sustainability – and diversity – procurement promotes a culture of sustainability and encourages participation of diverse suppliers.
 - Supplier Diversity – noted above.
- Avangrid’s summary of procurement activity notes only Networks, Renewables and Corporate businesses as clients.¹² Activity based specifically on Avangrid’s utilities, such as NYSEG and RG&E, are not shown.

2. Avangrid’s procurement function, evaluation and selection serve the combined benefit of Avangrid Networks, Avangrid Management Company, and Renewables, Inc. to aggregate volumes and demand. They do not always optimize vendor selection for each subsidiary.

- NorthStar requested Avangrid’s definition of competitive procurement placement, along with where the definition is used in procurement policies and procedures documentation. In response, Avangrid stated:

“There is reference throughout the Purchasing Procedures regarding competitive Procurement but it is not specifically defined.”¹³

- Avangrid also stated:

“Avangrid’s Purchasing Risk Policy and Avangrid’s Purchasing Procedure provide detail on the company’s policies and procedures for competitive procurement of goods and services including, preparing for a tender, selecting the suppliers to be invited to

⁸ DR 26

⁹ DR 26 and 695 Supplement 1. The bidding process analyzes the technical qualifications and financial costs. At least 3 bids must be considered to meet technical requirements (ITEO) and at least 3 bidders invited to the final pricing round of an RFP, having already been technically qualified.

¹⁰ DR 233 Attachment 4

¹¹ DR 233 Attachment 4

¹² DR 232 and Attachments

¹³ DR 592

the tender, receipt of the bids, the technical evaluation of the offers, proposing the award, financial risk review, sustainability review, etc.”¹⁴

- It is important to note that these procedural activities do promote competition, they do not, in and of themselves, result in competitive procurement.
- All goods and services procurement greater than \$10,000 is considered “competitive”, and direct purchases issued by the “Business” (Avangrid Networks operating utilities) are not considered competitive.¹⁵ A Direct Purchase is permitted when the purchase amount does not exceed \$10,000 and is not required to be competitively bid.¹⁶ NYSEG and RG&E do not use a tender process; there is no Purchasing involvement. Avangrid Purchasing reported analysis of split purchase orders prior to 2023 and now uses an SAP system function to identify suspected split purchase orders for additional authorization.¹⁷
- Avangrid’s uses the terms competitive purchasing and transparency in its purchasing process:
 - The Procurement Governance Model Transparency requirement notes that three valid offers in sealed bids are required.¹⁸
 - “Avangrid’s Purchasing Risk Policy and Avangrid’s Purchasing Procedure provide detail on the company’s policies and procedures for competitive procurement of goods and services...”¹⁹
 - Avangrid states “our practice for a competitive tender is one where at least 3 technically valid offers have been received.”²⁰ However, a “tender” is a formal document/process that is used by organizations to invite suppliers to provide goods or services. It’s an invitation to submit bids, outlining how they can fulfil the required specifications, at a specified price or rate.²¹ It is not the result of a competitive evaluation of bids.
 - Avangrid stated that 85 percent of tender processes were considered competitive over the last three years (2021 – 2023).²²
- Avangrid defines transparency as:²³

¹⁴ DR 592

¹⁵ DR 26

¹⁶ DR 739

¹⁷ DR 26, 739 and 740

¹⁸ DR 26

¹⁹ DR 592

²⁰ DR 695 and Supplement 1

²¹ [TENDER | definition in the Cambridge English Dictionary](#) – tender noun, a written or formal offer to supply goods or do a job for an agreed price, [What Is a Tender in Procurement? – Tendium](#)

²² DR 695 Supplement 1

²³ DR 26, 592, 695, 739

“The effort of sending consistent messages to the market. Making an effort to obtain multiple bids and allowing all invited bidders equal opportunities.”²⁴

“Transparency is measured by having at least two valid offers, but it does not, necessarily, measure the level of competition in a tender.”²⁵

- In Avangrid’s Purchasing Procedure, transparency is defined as:

“The effort of sending consistent messages to the market. Making an effort to obtain multiple bids and allowing all invited bidders equal opportunities”²⁶..

“We understand that in page 16, (paragraph number C) of the Avangrid Purchasing Procedure the following statement is made “...keeping in mind the effort to promote Transparency and competition. The bid lists should be developed that will result in obtaining at least three (3) technically valid offers as determined in the ITEO)”. However, for the purposes of KPI calculation an award is transparent as long as the awarding method type is “Auction” or “Sealed Bid” and the participant number of technically valid vendors is 2 or more.”

- Avangrid’s Purchasing Procedure includes “transparency” and “competitive procurement” as described above, yet does not have a performance metric for competitive procurement.

“The Purchasing Department monitors KPIs for Savings, Transparency, Single Source, Time Periods and Supplier Participation.”²⁷

- When asked to describe the reasons for non-transparency, the company responded:²⁸

“The purchasing manager will select “Non Applicable” in Reasons for non-transparency awards, unless there is a defined reason that justifies the lack of transparency:”

“Unassigned: the buyer did not select a reason for non-transparency, therefore it counts toward transparency.”

“Does not apply: Counts towards transparency (no reason to justify not counting)”²⁹

- Avangrid’s reasons noted above are illogical, hardly a KPI, and not a competitive procurement practice.

²⁴ DR 695

²⁵ DR 695

²⁶ DR 433

²⁷ DR 232

²⁸ DR 432

²⁹ DR 432

- Avangrid’s Purchasing monitors KPIs for savings, transparency, single source, time periods and supplier participation. The Purchasing procedure does not apply to corporate credit card transactions, and no procurement card program exists.³⁰
- Avangrid’s economic analysis and selection of vendors is predominantly based on the combined impact on Avangrid and not on the individual impact on utility subsidiaries such as NYSEG and RG&E.³¹

3. Costs of materials and services, administrative charges and performance results are not directly applicable or meaningful to the New York utilities when they are aggregated and then allocated among the eight subsidiary utilities.

- Avangrid’s summary of procurement activity notes only Networks, Renewables and Corporate businesses as clients.³² Materials and services procurement that directly and specifically supports Avangrid’s New York utilities is not reported.
- Avangrid charges its New York utilities for core functions such as Gas Operations, Electric Operations Customer Service, Engineering, and Network Operations. These charges are largely based on the Massachusetts Formula for allocating charges. Charges based on allocations far exceed direct charges for the same services and include the following:³³
 - Massachusetts Formula (most commonly used)
 - Number of people per business
 - Percent CAPEX
 - Number of users or vehicles
- Reported KPIs for savings, transparency, single source, time periods and supplier participation are aggregated Avangrid metrics, not reported by individual utilities.³⁴

4. Avangrid charges to NYSEG and RG&E for Purchasing Services are allocations.

- Purchasing services for NYSEG and RG&E are performed by Avangrid Service Company with support from Avangrid Management Company, LLC and included in Service Level Agreements (SLAs) – addressed in **Chapter III – Governance and Management**.³⁵
- The Avangrid Purchasing, Insurance and General Services organization performs the purchasing function for the entire Avangrid Networks organization and Avangrid Renewables, Inc.³⁶

³⁰ DR 232 and 432

³¹ NorthStar analysis of DRs 920 through 939

³² DR 232 and Attachments

³³ DR 593 and Attachments

³⁴ DR 232 and Attachments and DR 432

³⁵ DR 593 Attachments 1 – 9, Appendix A

³⁶ DR 1, pages 129 and 133 of 166

- NYSEG and RG&E do not govern or manage the finance, planning, engineering, customer service, operation, or maintenance functions of the New York utilities. These are performed by the two Avangrid service companies.³⁷ More importantly, these functions represent the major organizations that would request goods and services procurement.
- Avangrid states that its SLA cost driver is the “amount of purchasing requests per each Client Company (value of open POS).”³⁸ Avangrid Electric Operations, Gas Operations, Engineering, etc. author purchasing requests.

5. Supplier diversity performance results are not directly applicable or meaningful to the New York utilities because they are aggregated Avangrid data. Supplier diversity data represent the product of a retrospective analysis of vendor activity rather than a purchasing program.

- Avangrid does not certify diverse suppliers or obtain vendor certifications.³⁹ Avangrid relies on third-party certifications and data management systems and has stated that Avangrid verifies certifications with multiple non-government organizations, along with state and local government agencies that offer diverse business certifications.
- Avangrid conducts “data scrubs” by submitting a supplier list to its third-party data management system to review and validate suppliers.⁴⁰ Avangrid has stated that it verifies diverse suppliers’ certifications with multiple non-government organizations:

“The organizations we partner with for data validations are member-based organizations and we are not allowed to share the reports we receive back from the “data scrubs”.”⁴¹

“...we upload Avangrid’s supplier list to a certain organization’s system, and they review the suppliers and send us back the file identifying which suppliers are certified by the organization.”⁴²

“Our diverse supplier data validation process has continued to expand since the program started. The data scrub is the process when we upload Avangrid’s supplier list to a certain organization’s system, and they review the suppliers and send us back the file identifying which suppliers are certified by the organization.”⁴³

³⁷ DR 26 page 19

³⁸ DR 593 Attachments 1 – 9, Appendix A

³⁹ DR 465

⁴⁰ DR 465 and 589

⁴¹ DR 465 and 1173

⁴² DR 1173 SUPP 1

⁴³ DR 1173 Supplement 1

- Supplier Diversity spend does not necessarily reflect New York suppliers or benefit New York utility ratepayers. Avangrid’s top 10 suppliers, representing 66 percent of total diversity spend, were presented in the audit orientation meeting.⁴⁴
- NorthStar discovered discrepancies and deficiencies in Avangrid’s presentation materials.⁴⁵
 - Reported suppliers whose status had changed or expired.
 - Diverse suppliers that were omitted from the materials.
 - Suppliers who conducted no business with Avangrid’s regulated utilities.
- Avangrid addressed some of these discrepancies and steps to validate presentation data, stating that:

“The chart in the audit kickoff presentation reflects the Top 10 diverse supplier spend, noting that the spend information was from January to August 2023. The slide notes that NG Gilbert had lost its diverse status. At the time of the presentation on 11/8/2023, Laydon Industries’ diverse status change had yet to be communicated, and the sam.gov system was updated on 11/7/2023. The slide was provided days prior to the presentation. As soon as we knew of the change, we updated our Diverse Supplier List.”⁴⁶
- Avangrid, Inc.’s supplier diversity program applies reported data to all Avangrid utility subsidiaries, including NYSEG and RG&E.⁴⁷
- Supplier Diversity reports to the AMC VP of Purchasing Insurance and General Services.⁴⁸ Policy and procedures include:
 - Purchasing Risk Policy.⁴⁹
 - Avangrid Group Purchasing Procedure dated April 1, 2023.⁵⁰
- Management reports that monitor progress to achieve goals (increase annual spend to \$300M by 2025, include one SDP in tenders >\$1M, and track Tier 2 diversity spend) include:
 - Updates to the Avangrid Management Committee
 - Spend Update Report email to Purchasing Team
 - Report to the Avangrid Environmental Social Governance (ESG) Steering Committee

⁴⁴ DR 26

⁴⁵ DRs 26, 462, 465, DRs 920 – 939, 591 and NorthStar analysis

⁴⁶ DR 591

⁴⁷ DR 230

⁴⁸ DR 1 and 26

⁴⁹ DR 230 Attachment 1

⁵⁰ DR 230 Attachment 2

- Inclusion in Purchasing Report and Sustainability Reports is meaningless in terms of how Avangrid Sustainable Development Goals (SDGs) relate to NYSEG and RG&E.⁵¹
 - 2022 Sustainability Report “Investing in A Clean Energy Future for All
 - 2022 Avangrid Global Reporting Initiative Report
 - SDP goals are established by Avangrid.⁵²
- Avangrid relies on third-party certification via vendor subscription and expiration date. “The Supplier Diversity Program has not been the subject of a stand-alone audit since 2017.”⁵³ However, it should be noted that the current Avangrid Supplier Diversity program was formally established only in 2022.⁵⁴

D. RECOMMENDATIONS

1. Redefine competitive procurement of goods and services versus transparency using accepted industrial terminology and include this in policies and procedures documents.
2. Develop comprehensive performance metrics for the purchasing function. Formally define how each performance metric will be calculated and the data source for each.
3. Develop a comprehensive, semi-annual report on the purchasing performance directly applicable to NYSEG and to RG&E supported by verifiable data. Ensure reports and supporting data are readily available and produced for the next management audit.
4. Formally define how Supplier Diversity identification and certification will be conducted for NYSEG and for RG&E.
5. Formally define how Supplier Diversity procurement will be conducted, how fair and equitable competition among suppliers will be ensured and include this in policies and procedures documents.
6. Develop comprehensive performance metrics for Supplier Diversity procurement applicable to NYSEG and to RG&E.
7. Develop a comprehensive, semi-annual report on Supplier Diversity purchasing performance directly applicable to NYSEG and to RG&E supported by verifiable data. Ensure reports and supporting data readily available and produced for the next management audit.

⁵¹ DR 230 Attachments 3 – 7

⁵² DR 461

⁵³ DR 466

⁵⁴ Fact Verification

XIII. PERFORMANCE MANAGEMENT

This chapter provides the results of NorthStar’s review of Avangrid’s performance management processes and systems in the context of NYSEG and RG&E where appropriate.

A. BACKGROUND

Performance management is an ongoing process that includes planning, measurement, review, feedback and corrective action. Key elements include performance monitoring and metrics (often termed “Key Performance Indicators” or KPIs); reporting and communication; and design and implementation of a performance review process that links employee objectives and performance targets to overall corporate goals and objectives. Measures should be meaningful and linked to the organization’s mission, objectives, and strategic and operational plans as part of a comprehensive performance management process. A robust performance management process ties employee and executive performance to the KPIs and creates a “line of sight” between employees, operational decision making, and to the corporate goals.

A frequent element of performance management is the linkage between results and compensation. Targets for compensation must be realistic and attainable, and they must be in alignment with a corporation’s real challenges and objectives. Employees should have a clear understanding of how corporate objectives and KPIs relate to their compensation.

KPIs should be used to provide a warning of potential performance issues and to initiate corrective action. Measures are frequently classified as leading or lagging. Leading indicators provide information about a current situation that may affect future performance. Used properly, leading indicators help an organization respond to potential issues and changing circumstances to achieve desired performance or to avoid unwanted outcomes. Lagging indicators measure outcomes that have resulted from past actions.

In NorthStar’s experience, most utilities use a fairly standard set of performance measures (typically lagging indicators) driven by regulatory requirements and industry-standard metrics, and metrics remain relatively unchanged over time. Given the significant changes under way in New York State, Avangrid, on behalf of NYSEG and RG&E, must appropriately balance ongoing operations and performance, the changing operating environment, and response to regulatory mandates such as the Climate Leadership and Community Protection Act (CLCPA).

Some of CLCPA’s major decarbonization provisions are as follows:¹

- **Net Zero Emissions:** This mandate covers all economic sectors and includes electricity and fuels imported from other states. The law requires greenhouse gas (GHG) emission reductions of 40 percent from 1990 levels by 2030 and 85 percent by 2050. To reduce

¹ <https://climate.ny.gov/Our-Impact/Our-Progress>. Accessed on September 16, 2024., https://en.wikipedia.org/wiki/Climate_Leadership_and_Community_Protection_Act

the remaining 15 percent of emissions by 2050, the CLCPA allows for use of carbon offsets.

- Renewable Energy: CLCPA sets ambitious electric-sector renewable targets in New York, including the following:
 - By 2025: 6,000 MW of distributed solar, 1,500 MW of energy storage, 185 TBu end-use savings in buildings and industrial facilities.
 - By 2030: 70 percent of electricity from Renewable Energy, 40 percent reduction in greenhouse gas emissions from 1990 levels, 3,000 MW energy storage, 1M electric homes and 1M electrification-ready homes.
 - By 2035: 9,000 MW of offshore wind, 100 percent light duty, zero-emission vehicle sales.
 - By 2040: 100 percent zero-emission electricity.
 - By 2050: 85-percent reduction in greenhouse gas emissions from 1990 levels.

B. AUDIT SCOPE ITEMS

- Assess changes to performance management processes since the prior management audit and determine the extent to which these processes promote corporate goals, grid modernization, safety, and reliability standards, environmental and CLCPA goals, and Commission objectives.
- Evaluate the effectiveness of the Companies' benchmarking practices.

C. FINDINGS AND CONCLUSIONS

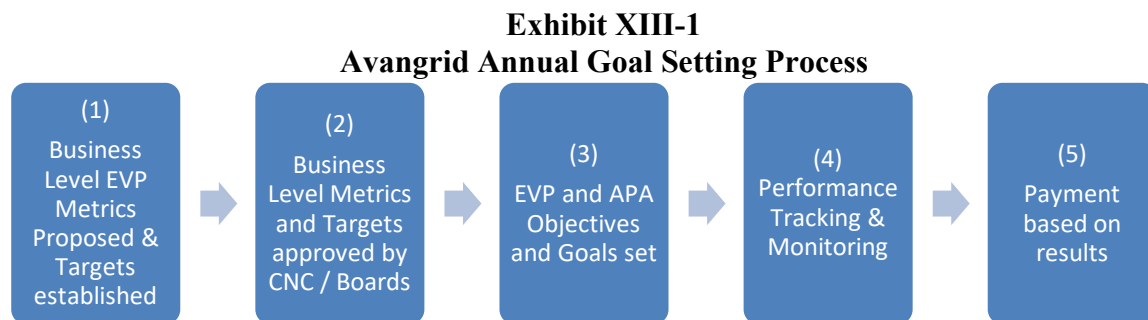
1. NYSEG and RG&E do not have their own mission, vision or values. The Avangrid, Inc. purpose and values are applied to NYSEG and RG&E.²

- Strategic planning helps organizations make decisions that align with their mission, vision, purpose, values and strategic objectives. It ensures that all actions and initiatives drive the organization toward defined goals. The product of strategic planning efforts is a company's strategic plan.
- The strategic planning process is performed at the Avangrid level. NYSEG and RG&E do not have a strategic planning process or produce strategic plans. Avangrid's most recent strategic plan, the 2022-plus Plan, includes strategic "objectives" for the New York utilities. For more information, see **Chapter III – Governance and Management**.

² DR 24.

2. Incentive Plan annual goals are initially established at the Avangrid, Inc. and Avangrid Networks level NYSEG and RG&E do not have an annual goal setting process where goals are established at the utility level.

- Avangrid has not implemented the prior audit's recommendation to develop a formal documented performance management process.³ Avangrid describes its process as follows:
- The process begins as goals are established at the Avangrid level. An overview of the process, from annual incentive metrics through to incentive payment is outlined in **Exhibit XIII-1.**



Source: DR 26 Attachment 1.

- (1) Business Level Executive Variable Pay (EVP) Plan Metrics Proposed & Targets established – Performance metrics and targets are negotiated among Avangrid Corporate leadership and the Chief Human Resource Officer (CHRO) and Chief Financial Officer (CFO).⁴
- (2) Business Level Metrics and Targets approved by Compensation & Nominating Committee (CNC) / Boards – The Avangrid Board of Directors has formed a CNC that is responsible for overseeing executive compensation and the director nomination process. Annually, the CNC reviews and approves the corporate goals and objectives applicable to the compensation of Avangrid's Chief Executive Officer (CEO), as well as evaluating the CEO's performance of prior year goals. The CNC then reports the compensation to the Board of Directors (BOD).⁵ The CNC is composed of three committee members, including the CFO of Iberdrola, S.A., a professor who was a former board of director member and non-executive chair of UIL Holdings, and a former president of AT&T's Northern Region. The committee secretary is a law firm partner based in Spain.⁶
- (3) EVP plan and Annual Performance Award (APA) plan Objectives and Goals – Following the CNC approval of the Management Committee (MC) Member

³ DRs 253 and 745

⁴ DR 745.

⁵ <https://www.avangrid.com/corporategovernance/boardcommittees/compensationandnominatingcommittee>

⁶ <https://www.avangrid.com/documents/453723/455077/Compensation-and-Nominating-Committee-Charter.pdf/dd984055-0d71-838a-22e4-25b8bfe52096?t=1698776242263>,
<https://www.avangrid.com/corporategovernance/boardcommittees>

objectives, the Vice Presidents (VP) reporting to the MC members are asked to create objectives with line of sight to their respective MC member's objectives. Avangrid Networks' VP-level objectives are consolidated and reviewed for consistency. Finally, VP objectives cascade to individual performance objectives throughout each part of the organization.⁷

- (4) Performance Tracking & Monitoring – Monitoring of business-related KPIs, metrics and annual performance goals is the responsibility of each business area and business area management. As applicable to NYSEG and RG&E starting in 2023, Human Resource (HR) and Control provide periodic updates to Avangrid, Inc., Avangrid Networks and individual goals of the NYSEG and RG&E President and CEO. Periodic updates are a projection of actual year-end results based on best information at that time.⁸
- (5) Payment based on results – Results are calculated and paid by March 15 or March 31 depending on the applicable incentive year.⁹
- NorthStar's observations to business practices since prior management audit include the following:
 - Performance metrics and targets are negotiated among Avangrid Corporate leadership, the CHRO and the CFO. The Avangrid Risk Committee, the Risk Management organization, and the Avangrid Networks Board no longer appear to be involved in the annual goal setting process.
 - The CNC is the plan administrator for the EVP plan and serves as approver of annual goals and goal achievement. However, this is limited to Avangrid Inc. (Avangrid Inc. CEO goals), and the CNC does not approve Avangrid Network goals and achievements.
 - Third-party audit of annual results began in 2021 (for plan year 2020) for Avangrid, Inc. (not Avangrid Networks).¹⁰

3. Avangrid uses dashboards to monitor a comprehensive array of metrics. Despite a wealth of performance metrics, there is no direct line of sight from NYSEG and RG&E objectives to department-level operational goals and metrics.

- KPIs are frequently classified in "Tiers" or "Levels" with the highest level (i.e., Tier 1) consisting of top corporate goals. For example, supporting goals might be Tier 2, and department-level operational goals might be represented by Tier 3).
- Avangrid's 2022-plus Strategic Plan includes specific objectives for the New York utilities.¹¹ NYSEG and RG&E have a number of short- and long-term initiatives

⁷ DR 259.

⁸ DR 640.

⁹ DR 641 Attachments 1a, 7b, DR 641 Supp 3 Attachment 2, DR 641 Attachments 1b-1d.

¹⁰ DR 258 Supp 2 Attachment 6-9.

¹¹ DR 13 Attachment 1. Due to Avangrid confidentiality concerns, detailed information was removed.

related to each objective. Examples include AMI deployment, SAP CRMB and AMI integration, FWM “go-live”, and coordination with colleges to improve skill pipeline.

- NYSEG’s and RG&E’s 2022 year-end performance results were presented at both Boards of Directors meetings in March 2023. Performance metrics in the presentations do not show any relationship to New York objectives or supporting initiatives.¹² NYSEG’s and RG&E’s 2022 year-end performance measures presented to the Boards of Directors are the same metrics filed with the DPS for Electric Reliability, Gas Safety and Customer Service.¹³ For more information on DPS-reported metrics, see **Chapter V – Electric Operations, Chapter VI – Gas Operations, and Chapter IX – Customer Operations**.
- Avangrid does not produce operational plans to support its strategic plan. NorthStar requested operational plans for Avangrid business leaders to support the 2022-plus Strategic Plan. In response, Avangrid stated:

“The Business Leader Operational Plan is reflected in each OpCo president’s annual objectives.”¹⁴

- NorthStar analyzed alignment between New York objectives and supporting initiatives, Avangrid-incentivized metrics, and the NYSEG and RG&E President/CEO annual objectives and performance metrics for 2022. The analysis found that several metrics were not incentivized and did not have established KPIs.¹⁵ Furthermore, there is no link between execution or completion of New York supporting initiatives in the Avangrid 2022-plus Strategic Plan to improved NYSEG and RG&E service levels or performance.
- Avangrid monitors several operational metrics, which are derived from the annual tactical planning exercise, as shown in **Exhibit XIII-2**. Dashboards have been created to monitor metrics, with data updated on a monthly basis.¹⁶ Operational KPIs are grouped under the following metric categories – and each grouping includes drill-downs for expanded metrics. Many metrics do not relate to the NYSEG and RG&E President/CEO’s annual performance measures. Nor do they relate to New York objectives or support initiatives in the 2022-plus Strategic Plan.

Exhibit XIII-2
NYSEG and RG&E KPI Categories ^[Note 1]

Safety	Leak-prone Pipe Replacement	Customer Experience
Reliability	T&D Maintenance	AMI

¹² Due to Avangrid confidentiality concerns, detailed information was removed.

¹³ DR 809 Attachment 13.

¹⁴ DR 1248.

¹⁵ DR 13 Attachment 1, DR 255 Supp 2 Attachment 1-2, DR 258 Supp2 Attachment 22-23, DR 1253, DR 1253 Attachment 1.

¹⁶ DR 259 Supp 1.

Interruption	Evacuation Damages	Digital Grid
Hydro	Emergency Response	CS Priority Targets
System Availability	Substation Maintenance	
Vegetation Management	Mobility	

Note 1: Assumed to be applicable to both NYSEG and RG&E. Due to a lack of a comprehensive response, only RG&E metric groups were provided in most cases.

Source: DR 259 Supp 1 Attachment 1.

4. NYSEG and RG&E do not have utility-level incentive programs. Avangrid financial goals make up the largest category of objectives. Some metrics can be linked to safety and reliability standards and regulatory objectives. Few can be linked to grid modernization and CLCPA goals. Metric definitions are subject to modification post-performance.

- NYSEG and RG&E do not have utility-level incentive plans.¹⁷
- **Exhibit XIII-3** displays Avangrid, Inc. and Avangrid Networks objectives for 2023. Avangrid Networks' objectives come from Avangrid Inc. objectives – which are the Avangrid CEO's objectives. Performance is measured at the Avangrid, Inc. and Avangrid Networks levels.

Exhibit XIII-3
Avangrid Performance Goals and KPI Alignment – 2023

Performance Measure		Corp Mission/ Strategy	Financial	Safety and Reliability	Environ.	NY Regulatory Objective/ Penalty
Avangrid Inc. Objectives						
1	Financial (39) % • Adjusted Net Income • Adjusted NOE / Non-Reconcilable Cost • FFO / Net Debt		X			
2	Growth 1 (13%) • Rate Base • Asset Rotation • Legislative Action	X	X			
3	Growth 2 (23%) • PNM Merger Approval • New England Clean Energy Connect (NECEC) legislation / appeals • Rate Case/Order approvals	X	X			
4	Renewable Growth (<4%)	X	X			[Note 1]
5	SAIDI / SAIFI (6%)			X		X
6	Customer Service Standards (5%)					X
7	Diversity, Inclusion and Gender Parity Plan (3%)	X				

¹⁷ DR 258.

	Performance Measure	Corp Mission/ Strategy	Financial	Safety and Reliability	Environ.	NY Regulatory Objective/ Penalty
8	Supplier Sustainability (3%)	X			X	
9	Lost Time Accidents (5%)		X			
Avangrid Networks Objectives (derived from Avangrid Inc. goals)						
1	Economic (33%) • Net Income • NOE / Non-Reconcilable Cost		X			
2	Growth (25%) • Rate Base • Legal Issue Resolution, Appeals		X			
3	Rate Cases % of Budget (8%)		X			
4	SAIDI / SAIFI by OpCo (6%)					X [Note 2]
5	Quality Customer Actions (6%) • First Call Resolution • Improved ETR			X		X [Note 3]
6	Customer Service Penalties (11%)		X			X
7	TRIR – Employees and Contractors (9%)			X		
8	New Legislation (1%)	X				
9	Stakeholder Engagement (1%) • DEI • Sustainable Suppliers	X			X	

Note 1: Renewable Growth is Avangrid Renewable business growth.

Note 2: Only SAIFI is a NYSEG and RG&E Regulatory Objective

Note 3: First Call Resolution indirectly tie to Cust Service Performance.

Source: DR-258 Supp2 Attachment 1 and 9, NorthStar Analysis.

- The CNC is responsible for approving annual objectives for Avangrid, Inc. and Avangrid Networks. However, actual target numbers are generally missing from presentation materials. For example, goals are presented as +/- percent from budget.¹⁸
- The CNC is also responsible for approving annual metrics achievement and metric changes. Starting with 2020 goals, a third-party auditor was engaged to evaluate goal-achievement related to Avangrid, Inc. NorthStar reviewed the most recent year's evaluation, performed for 2023. NorthStar's observations include the following:
 - Some results are reported only at the Avangrid, Inc level. This includes financial metrics, rate-base growth, asset rotation, legislative actions, Public Service Company of New Mexico (PNM) merger approval, New England Clean Energy Connect (NECEC), rate case approvals, Avangrid Renewables growth, supplier sustainability, Diversity, Equity & Inclusion (DEI), and lost-time incidents.
 - Other metrics are an aggregation of Avangrid utility operating companies' (OpCos) performance results, weighted by utility customer size. This includes SAIDI, SAIFI, and some customer service-related metrics. This could conceal inferior performance at any individual utility and impact urgency to improve.

¹⁸ DR 1185.

- Measurement criteria are not always clearly defined in the CNC presentations ahead of the performance year for both Avangrid Inc. objectives and Avangrid Network Objectives.¹⁹
 - Accommodations have been made to account for a range of situations such as: events that were beyond the control of Avangrid and Avangrid Renewables; excluding items for purposes of financial metrics; including additional qualitative factors for Funds from Operations / Net Debt and changing the definition of the customer service metric to meet target.
 - Financial objectives are based on unaudited, preliminary financial data, but are noted to be subject to revision based on external audit or management adjustments.
 - CNC meeting minutes are generic and do not indicate that Administrator discretion has been exercised when metric adjustments or modifications occur.
 - The Supplier Sustainability metric is based on a questionnaire that suppliers complete without independent verification.²⁰
- Although not reflected in Avangrid’s annual performance goals, Avangrid has several initiatives that indicate support for New York CLCPA goals. This is reflected in the 2023 Distributed System Implementation Plan (DSIP) filed with the New York State Public Service Commission. Most initiatives are in preliminary stages of development. A high-level summary of initiatives planned or in-progress includes the following:²¹
 - Smart Meters to enable customers to understand and manage energy usage and reduce outage time.
 - Installation of equipment such as sensors or reclosers to allow for remote operation and control, improve visibility into network, and integrate clean-energy resources.
 - Energy Storage with potential to lower energy costs by providing short-term backup power to smooth demand profiles and store renewable energy.
 - Intentional programs to incentivize third parties to install more Electric Vehicle (EV) chargers. This will help reduce range anxiety for drivers and support EV adoption as part of Avangrid’s broader commitment to deploying a 60 percent clean energy fleet by 2030.
 - Support the State’s Clean Heat Program to expand the use of heat pumps to reduce emissions.
 - The Grid Model Enhancement project to improve the companies’ data models to better analyze, plan and forecast electric distribution system needs as DERs increase. The Energy Control Center will need real-time data to monitor distribution system operations and maintain customer reliability, while integrating DERs.
 - As of 2022, individual goals of the NYSEG and RG&E president/CEO include New York region performance goals – based on aggregated performance of NYSEG and

¹⁹ DR 1185 Attachments 1,3,5,7,9,10.

²⁰ DR 258 Supp 2 Attachment 9, DR 1185.

²¹ <https://www.avangrid.com/w/avangrid-s-new-york-companies-file-action-plan-to-advance-state-climate-goals>

RG&E. Goal-alignment occurs in many areas among the three, including the following:

- Avangrid Networks Financial Performance
 - NY Adjusted Net Income Budget Achieved
 - NY Business Area Net Operating Expenses
 - Reduced Negative Revenue Adjustments
- Avangrid Networks Growth
 - NY Plant Additions + Rate Base
- Avangrid Rate Case
 - NY Company Regulatory Business Area Targets
 - NY 2023 Rate Case Filing Milestones
- Avangrid Networks Operational Excellence
 - Reduced Negative Revenue Adjustments
- ESG and Other
 - NYSEG Total Recordable Injury Rate (TRIR)
 - RG&E TRIR
 - Net TRIR - Contractors
 - Legislation and Community Stakeholder Engagement²²

5. The CNC is responsible for administering EVP plans and the Management Committee for APA plans (until 2022). The CNC replaced the Management Committee for APA plan administration in 2023. Approval of incentive-plan changes made in 2018 to include a “200% Incentive Factor” is not evident.

- Avangrid non-union employees assigned to NYSEG and RG&E participate in Avangrid’s incentive plans.
- EAIP to EVP – Effective January 1, 2018, the Executive Annual Incentive Plan (EAIP) has been replaced with the EVP plan. The EVP plan is based on a new Avangrid Group model. Eligibility is open to the Avangrid CEO, MC Members, and VP-level executives reporting to MC members.²³ EVP plan participants are mainly those who hold senior-level positions within Avangrid, along with regulated utility Presidents/CEOs.

²² DR 1253.

²³ DR 641 Attachment 7B.

- Several plan components have been modified. An overview of changes between the EAIP and the EVP plan is shown in **Exhibit XIII-4**.

Exhibit XIII-4
Avangrid EAIP vs EVP Plan

Component	EAIP	EVP Plan
Eligibility	Eligibility for participation in the Plan is limited to the CEO of Avangrid and to officers and other key employees of Avangrid and its Affiliates.	Unless otherwise determined by the Administrator, eligibility for participation in the Plan is limited to the CEO, MC Members, and Vice President equivalent or above who report to MC members at Avangrid.
Incentive Objective Groupings	Weightings vary based on Executive Role. Avangrid CEO is 100% Avangrid Objectives, SVPs weightings: • Avangrid Objectives (50%) • Business Areas/ Corp Function Objectives (40%) • Personal Targets (10%)	Weightings vary based on Executive Role. Components include: [Note 1] • Avangrid Objectives • Individual Objectives • Performance assessment by Supervisor
Objective Achievement Scale	0 to 120% scale • Not Achieved – 0% • Satisfactory – 50% allocated points • Good – Target 100% allocated points • Excellent – Max 120% allocated points	• Performance results are measured on a 0-100% scale. Intermediate results calculated by liner interpolation. • Satisfactory Performance 0% • Excellent Performance 100%
Incentive Factor	n/a	The “Incentive Factor” is 200% for all Participants unless designated otherwise by the Administrator. .
Individual Performance Achievement Scale	Same as Incentive Objective Achievement Scale. • Not Achieved – 0% • Satisfactory – 50% allocated points • Good – Target 100% allocated points • Excellent – Max 120% allocated points	No Scale. Appears to be a discretionary assessment by the Avangrid CEO without a scale and by the board for the Avangrid CEO evaluation.
Award	Incentive awards may be granted in cash, in AVANGRID, Inc. stock, or in a combination thereof, as determined by the Board.	Cash award.
Incentives Paid	Not Provided	Indicated as paid by March 15 (or March 31 depending on plan year)..
Plan Administrator	Avangrid’s Company’s Board of Directors or a committee to the extent that the Board’s powers or authority under the Plan have been delegated to such committee.	The “Administrator” is Avangrid’s Board of Directors or a committee to the extent that the Board’s powers or authority under the Plan have been delegated to such committee. The Compensation, Nominating & Corporate Governance Committee (CNCGC) is the administering committee for EVP plans but not named on the document. [Note 2]

Note 1: Using 2022 Plan year.

Note 2: The 2023 Amended and Restated EVP plan doc it states: "The "Administrator" is the Company's Board of Directors Compensation and Nomination Committee.

Source: DR 641 Attachments (1a, 7b), DR 662 Attachment 2 (Internal Audit), DR 258 Supp 2 Attachment 8, DR 641 Supp3, Fact Verification, NorthStar Analysis.

<https://www.sec.gov/Archives/edgar/data/1634997/000119312517054164/d341763dex101.htm> (2017),

<https://www.sec.gov/Archives/edgar/data/1634997/000119312522168377/d318618dex101.htm> (2022)

- NorthStar's review of technical changes between EAIP to EVP found CNC presentation materials from the February 2018 CNC committee meeting where plan changes were presented, did not address introduction of the 200-percent incentive factor but included other changes such as the achievement scale changing from 0% to 100%, eligibility changes, plan administrator changes and incentive payment date clarifications. NorthStar's review of incentive plan calculations found this incentive factor doubles the salary amount to establish "Maximum Award Opportunity" used as the basis for determining bonus amounts. Awards of over 100 percent of base salary should not be interpreted as stretch goal achievement.²⁴
- The February 2018 CNC meeting minutes do indicate "A presentation and copy of the plan had previously been provided to the Committee". However, evidence to support what material was distributed prior to the meeting and to whom it was distributed to, was not provided.²⁵
- GAIP to APA – Effective January 1, 2018, the Group Annual Incentive Plan (GAIP) was replaced with the APA plan. Non-Union employees are eligible for the APA plan, provided they do not qualify to participate in the EVP plan.²⁶
- NorthStar's review of changes between the GAIP an APA plan found:
 - Formal APA plan document changes are effective January 1, 2018, and January 1, 2023. APA documents indicate inclusion of a 200-percent incentive factor.²⁷ However, presentation materials from a Human Resource Update to the CNC committee on February 15, 2018, do not discuss that plan change. The April 25, 2018, CNC meeting minutes indicate "A presentation and copy of the Annual Performance Award plan had previously been provided to the Committee". However, evidence to support what material was distributed prior to the meeting and to whom it was distributed to, was not provided. APA plans are not mentioned again until the end of 2023.²⁸
 - On December 7, 2023, the APA Plan and Payment Administration was changed to delegate approval and payment of incentive awards to CEO and CHRO after CNC approval of business objectives performance. Changes were also made to

²⁴ DR 641 Attachment 7a, 7b, DR 743 Attachment 1.

²⁵ Fact Verification XIII-20, 255-256

²⁶ DR 641 Attachment 12b. Due to Avangrid confidentiality concerns, detailed information was removed.

²⁷ DR 641 Attachment 2b, 2c. DR 1185 Attachment 11, May 20, 2019 Direct Testimony of Workforce, Compensation, and Benefits Panel.

²⁸ DR 641 Attachment 7b, Fact Verification XIII, 286-292.

performance ratings, individual achievement factors and objective component weighting. Changes were retroactive for the 2023 performance year.²⁹

6. EVP plans that include discretionary assessment are unusual within the utility industry, where executive compensation typically relies on clear, objective performance metrics. This deviation leads to concerns about transparency, fairness, and goal alignment, which are critical in maintaining stakeholder trust and regulatory compliance.

- **Exhibit XIII-5** provides an overview by position of objective weightings and components for the EVP plan for 2022 plan year.

**Exhibit XIII-5
2022 EVP Plan Objective Weightings**

Role	Avangrid Objectives Weight	Business Area	Individual Objectives	Other Assessment Component
2022				
CEO	60%	N/A	N/A	40% Discretionary Assessment by The Board
Networks or Renewables CEO's	25%	45%	N/A	30% Discretionary Assessment by the Avangrid CEO
Corporate Function Leaders (MC Members reporting to CEO)	25%	45%	N/A	30% Discretionary Assessment by the Avangrid CEO
Vice President or above (reporting to MC Members) [Note 1]	20%	20%	60%	N/A

Note 1: NYSEG / RG&E President and CEO level.

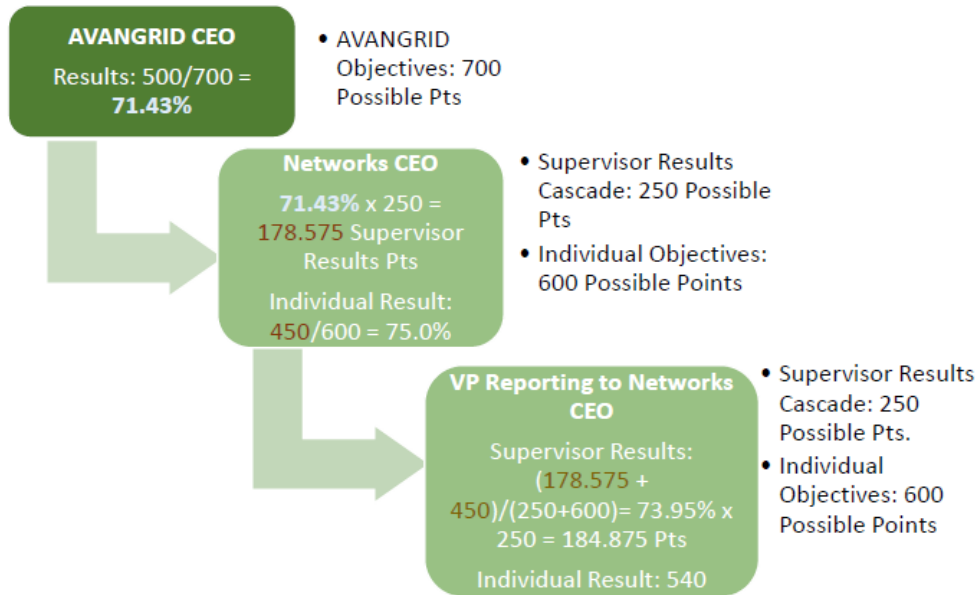
Source: DR 641 Attachment 3.

- For 2022, the Avangrid Networks CEO and other MC members were not evaluated against individual objectives; instead, 30 percent-40 percent of EVP assessment was based on a discretionary assessment from the Avangrid CEO. The NYSEG and RG&E President/CEO was assessed against individual goals as an EVP plan component without a discretionary assessment.
- For 2023, as depicted in the diagram in **Exhibit XIII-6**, the plan introduced a “cascading” mechanism, starting with the Avangrid CEO’s achievement results cascaded to reporting individuals and becoming a component of their performance achievement.

²⁹ DR 641 Attachment 19-20.

Exhibit XIII-6 EVP Plan Cascading Achievement - 2023

Business Area Participants



Source: DR 641 Attachment 4.

- The results of each supervisor's achievements are combined with individual results to determine a "Supervisor Objective" achievement value for the next level of employees. A discretionary assessment component became incorporated for all EVP plans. Plan changes have impacted EVP plan participants only.³⁰
- Exhibit XIII-7** indicates objective weightings for each role for the 2023 EVP plan.

Exhibit XIII-7 EVP Plan Objective Weightings - 2023

Role	Avangrid Objectives Weight	Supervisors Objectives	Individual Objectives	Other Assessment Component
2023				
Avangrid CEO	70%	N/A	N/A	30% Performance Assessment by the Board
Businesses CEO (Networks / Renewables)	N/A	25% (Avangrid CEO)	60%	15% Assessment by the Avangrid CEO
Corporate Area leaders (MC Members reporting to CEO)	N/A	50% (Avangrid CEO)	35%	15% Assessment by the Avangrid CEO

³⁰ DR 641 Attachment 4, DR 1185 Attachment 3.

Role	Avangrid Objectives Weight	Supervisors Objectives	Individual Objectives	Other Assessment Component
Business Area Vice President or above (reporting to Businesses CEO) [Note 1]	N/A	25% (Avangrid Business CEO)	60%	15% Assessment by the Avangrid CEO
Corporate Area Vice President or above (reporting to Corporate Leader)	N/A	50% (Associated Avangrid MC Member)	35%	15% Assessment by the Avangrid Supervisor

Note 1: NYSEG / RG&E President and CEO level.

Source: DR 641 Attachment 4.

- There is no cascading of goals from the NYSEG and RG&E President/CEO because all reporting employees are on APA plans rather than EVP plans. The position has a limited span of control, with few direct reports (see **Chapter III – Corporate Governance**). The majority of NYSEG and RG&E employees report to managers within Avangrid and union employees (who make up two-thirds of the New York regional utility) and are subject to goals set forth in union agreements.³¹
- NorthStar’s research found executive compensation with discretionary assessments are not recommended and atypical within the utility industry. Discretionary assessments bring forth an array of issues such as:
 - Lack of Transparency - Discretionary assessments can lead to perceptions of favoritism or bias, as they are not based on clear, objective criteria. This lack of transparency can undermine trust among shareholders and other stakeholders.
 - Uncertainty - Executives may find it challenging to understand how their performance will be evaluated, leading to uncertainty and potential dissatisfaction. This can affect their motivation and alignment with the company’s strategic goals.
 - Potential for Misalignment - Without clear, measurable goals, discretionary assessments can result in compensation that does not accurately reflect the company’s performance or the executive’s contribution. This misalignment can be particularly problematic if the compensation is perceived as unjustified.
 - Regulatory and Public Scrutiny – Discretionary assessment can be viewed as not having a clear linkage to performance, impacting regulatory and public perceptions.
 - Inconsistent application – Discretionary assessments can lead to inconsistent application across different executives, which can create internal equity issues and dissatisfaction among the leadership team.³²

³¹ DR 742.

³² [Using Discretion Effectively in Your Annual Incentive Plan - Meridian Compensation Partners \(meridiancp.com\)](#), [A New Framework for Executive Compensation \(hbr.org\)](#), [ESG Performance Metrics in Executive Pay \(harvard.edu\)](#), NorthStar Analysis

7. Union employees make up the largest percentage of the NYSEG and RG&E workforce, with incentives based solely on collective targets that allow for a 1-percent maximum award.³³

- APA and union plans make up the remaining options available to NYSEG and RG&E employees.
 - About one-third (969) of total employees are on an APA plan that ranges in annual incentive from five percent salary at a Representative level to 35 percent salary at a VP level.
 - Two-thirds (2,013) of employees are on a Union incentive plan, with a 1-percent maximum performance incentive.
- **Exhibit XIII-8** shows the number of Avangrid employees assigned to NYSEG and RG&E, along with their respective incentive plan and objective weightings. Employee counts do not include Avangrid employees who allocate time to one or both New York utilities.

**Exhibit XIII-8
APA / Union Objective Weightings – 2022**

Avangrid Assigned Role	Plan Type	# Empl [Note 1]	Avangrid Objectives	Avangrid Networks Objectives	Individual Objectives	Total
NYSEG / RG&E Vice Presidents - Directors	APA Plan	19	25%	35%	40%	100%
NYSEG / RG&E Senior Managers - Representatives	APA Plan	969	20%	30%	50%	100%
NYSEG / RG&E Union	Union	2,013	Determined by Union Contract – maximum individual award of 1%			
Total:		3,002				

Note 1: Data counts as of 10/3/2023.

Source: DR 495, DR 641 Attachment 3, 16.

- No changes were made to the APA plan between 2018 and 2022. In 2023, all participants now have objective weightings as follows: 35 percent Avangrid, Inc., 35 percent Avangrid Networks, 30 percent individual performance.³⁴
- Incentive plan payouts to NYSEG and RG&E Union employees are *de minimis*. The maximum individual award is 1 percent of employee salary.
- Employees on APA plans are assessed against individual “Specific, Measurable, Achievable, Relevant, Time-bound” (SMART) goals. Union employees do not have individual (SMART) goals.

³³ Approximately 67% of the NYSEG and RG&E workforce is union represented.

³⁴ DR 641 Attachment 5.

- In 2022, NYSEG Union employees received 0.5 percent because two of four metrics were not achieved. Achieved metrics included contact satisfaction (ETR) and Timely Reporting of Safety Metrics. The metrics not achieved were CAIDI and Gas Safety.³⁵

8. NYSEG and RG&E rate payers contribute to incentive plan payouts across Avangrid and pay for performance not achieved in their respective service areas. Setting and measuring performance at an Avangrid level is disadvantageous to New York rate payers.

- NYSPSC requirements for incentive compensation cost recovery set forth in the June 17, 2011, Order Establishing Rates for Electric Service in Case 10-E-0362 stipulate the following:
 - A utility must demonstrate that its total level of employee compensation, including incentive pay, is reasonable relative to peer companies. This can be documented in a compensation study of similarly situated companies.
 - An incentive pay plan is not reasonable if it includes performance targets that adversely affect rate-payer interests or are inconsistent with New York Public Service Commission policies.
- Rate Case testimony did not articulate recovery needs for ASC and AMC employees – nor did it provide a compensation study for these employees.³⁶
- As of December 31, 2023, the number of union employees, plus ASC and AMC employees with allocated time to NYSEG or RG&E included the following:
 - NYSEG Union: 1,612 employees
 - RG&E Union: 374 employees
 - ASC: 660 employees.
 - AMC: 498 employees.³⁷
- The Rate Case Testimony did not clarify that goal setting or achievement criteria for annual objectives was based on combined Avangrid performance.³⁸
- This method of incentivizing leads to the following situations:
 - A Short-Term Incentive Plan payout occurs without requiring NYSEG or RG&E to meet goals as a standalone utility.
 - Avangrid Renewables' goals incorporated within Avangrid, Inc. metrics, and metrics that did not benefit New York customers.

³⁵ DR 258 Supplement 1 Attachment 2.

³⁶ Case 22-E-0317 et al.

³⁷ DR 746, DR 746 Supp Attachment 1-2.

³⁸ Case 22-E-0317 et al.

- Below are examples from performance year 2022:
 - NYSEG did not meet its SAIFI goal, but Avangrid, Inc. and Avangrid Networks achieved their SAIFI goal at 63.2 percent, based on combined performance of BGC, CMP, CNG, NYSEG, RG&E, SCG, UI.
 - Metrics associated with Avangrid Renewable Vineyard Wind 1 project, Park City Wind & Commonwealth Wind project, Avangrid Renewables/Copenhagen Infrastructure Partners Restructuring Close, and Kitty Hawk Memorandum of Understanding were achieved outside of NYSEG and RG&E service territories.³⁹
- Utility performance is masked. Certain performance metrics are only reported at the Avangrid level. Apart from financials, this includes the following:
 - Outage alerts
 - TRIR for employees and contractors
 - Sustainable providers⁴⁰
- NorthStar inquired whether adjustments were made to the allocation process if an individual utility did not achieve its incentive-program targets. Avangrid responded:

“There were no adjustments made to the amounts allocated from AMC ASC to NYSEG and RGE related to NYSEG and RGE’s achievement of targets.”⁴¹

9. Individual SMART goals are established exclusively for non-union employees, but guidance does not specify that customer benefit be addressed. In addition, some goals fail to meet the SMART criterion.

- In its most recent rate case, Avangrid portrayed individual performance goals for each utility as customer-benefitting measures, rather than goals that benefit only shareholders. However, this concept is not conveyed within employee guidance documents for setting individual (SMART) performance goals. Consequently, two individual goals were found to include financial components and goals for supporting other Avangrid entities, such as UI, CMP within test selections.⁴²
- Avangrid has stated that the employee performance evaluation process begins with the setting of individual goals. At the beginning of each calendar year, non-union employees are asked to formalize annual goals outlining what they and their manager agree they will accomplish during the year.⁴³
- Objectives must be clear, establishing specific, predetermined, quantifiable expectations related to Avangrid’s economic/financial, operational, technological and

³⁹ DR 258 Supp 1 Attachment 1 and Supp 2 Attachment 8.

⁴⁰ DR 258 Supp 1 Attachment 1 and 8.

⁴¹ DR 891.

⁴² Case 22-E-0317 et al. WCP Exhibit 12, DR 489 Attachment 2.

⁴³ DR 262.

sustainability parameters. Measurement criteria, calculation formula and associated time series must be specific and fully described. The employee and manager are the main parties in this process, and objectives must include the following:⁴⁴

- A description of the objective and indicators
 - The degree of fulfillment
 - The measurement criteria
 - The source for data
- Employees add their objectives to the SAP tool, where they are reviewed by the associated MC member to ensure they support business objectives. HR also reviews objectives to ensure metrics are created consistently with an objective's intent.⁴⁵
 - NorthStar selected various non-union and union positions and analyzed appropriateness of each goal with respect to employee's job level, role description and use of SMART goal structure (specific, measurable, achievable, relevant and time-based).⁴⁶
 - NorthStar analyzed SMART goal-setting for 12 non-union employees and determined that goal refinement is needed within Field Customer Service and for Representatives within Credit and Collections. Some observations are as follow:
 - NYSEG Field Customer Service Analyst (Field Customer Service – Lockport) and Meter Services Analyst (Field Customer Service – Binghamton) goals are identical, despite different job descriptions.⁴⁷
 - Goals do not align with job descriptions, and over 50 percent are identical to manager goals two levels above position.
 - Goals are not specific, including vagaries such as, “manage operating expenses to ensure efficient practices” and “ensure focus on NY Customer Service External Expense Budget.”
 - Goals do not include measurable targets – “support reduction of overdue debt.”
 - Goals are not realistic for position responsibilities – “ensure operational excellence of the NY Customer Service team.”
 - RG&E Field Customer Service Representative (RG&E Walk in Office) goals lack specificity and measurability. For example, “provide best customer service to onsite customers” and “Offer accurate and effective solutions to customers...”⁴⁸

⁴⁴ DR 259.

⁴⁵ DR 259.

⁴⁶ DR 489-492 Supp and Attachments, NorthStar Analysis.

⁴⁷ DR 489.

⁴⁸ DR 491.

- RG&E Credit & Collections Representative goals are not specific or realistic for position level. For example:⁴⁹

“Support reduction/avoidance of bad debt exposure. Continue to develop an office collections strategy to minimize WO and AR. Use company resources prudently to assist in managing the department's expense budget.”

“Support projects such as CRMB & AMI, and initiatives that will result in implementing best practices and process efficiencies. Identify and implement process efficiencies that will result in time savings, dollar savings, decreasing arrears, or increased customer satisfaction. Results are a direct reflection of one's individual level of effort. Must identify actions taken to achieve.”

10. Avangrid did not perform benchmarking related to annual performance management.

- Avangrid's benchmarking efforts are confined to consulting firm reports and presentations that include extensive business operations analysis to identify areas of opportunity. Such areas may include increasing efficiency, incorporating automation, integrating technical solutions, and outsourcing select utility functions. The following reports were provided:
 - 2019 Assessment of Network Business
 - 2021 Assessment of Asset Operations
 - 2021 Assessment of Customer Operations
 - 2021 Assessment of IT Operations
 - 2023 NY Customer Service recommended roadmap⁵⁰
- Relevant report information is incorporated into respective subject matter chapters where applicable.

D. RECOMMENDATIONS

1. In support of developing separate NYSEG and RG&E strategic plans (see **Chapter III-Governance and Management**), create a performance management program that provides a clear line of sight from top-level NYSEG and RG&E corporate goals supported by subsequent department/operational goals and KPIs.
2. Create individual incentive plans for NYSEG and RG&E.
3. Include CLCPA initiatives in annual NYSEG and RG&E corporate goals.
4. To the extent that New York ratepayers have contributed to annual incentive payments to Avangrid employees (i.e. ASC, AMC, NYSEG and RG&E), NYSEG and RG&E should

⁴⁹ DR 491.

⁵⁰ DR 11.

adjust incentive compensation for performance metrics not related to NYSEG and RG&E and where NYSEG and RG&E performance did not meet targets.

5. Formally document the annual goal-setting process.
6. Ensure that annual goals presented to CNC include clear targets and measurement criteria. Clearly indicate when a goal represents a customer-benefiting measure.
7. Expand third-party auditor review to include Avangrid Networks and the NYSEG and RG&E President and CEO individual metrics.
8. Ensure that CNC meeting minutes are reflective of pre-meeting distributed materials. All such materials should be included in the meeting minute package for official records.
9. Clarify the CNC role and Management Committee roles for APA plan administration within the formal APA plan documents.
10. Include date and version for all incentive plans, along with including the plan administrator's name.
11. Develop individual goals and career paths for union employees.
12. Pursue additional training and oversight to ensure individual goals are appropriately structured and focused on customer benefits.
13. Discontinue discretionary assessments in incentive compensation plans to ensure that all employees are evaluated based on consistent and measurable performance metrics.

**A COMPREHENSIVE MANAGEMENT AND
OPERATIONS AUDIT OF NEW YORK
STATE ELECTRIC & GAS CORPORATION
AND ROCHESTER GAS & ELECTRIC
CORPORATION**

CASE 23-M-0103

Final Report Appendix: Benefit/Cost Analyses

February 4, 2025



NORTHSTAR CONSULTING GROUP

MANAGEMENT CONSULTANTS

FINAL REPORT APPENDIX: BENEFIT/COST ANALYSES

This Appendix to the Final Audit Report provides NorthStar's benefit/cost analyses (BCAs). The BCAs provide context regarding the estimated financial consequences of implementing NorthStar's recommendations. Recommendations for improvements and/or change are described and accompanied by adequate supporting information, especially those involving significant implementation costs and/or savings.

- For some recommendations, there may be a direct correlation between the recommendation and the cost savings, for example the elimination of certain positions or a reduction in activity times. For others, specific costs or savings may be difficult to quantify.
- For those recommendations where the expected costs or benefits are difficult to quantify, we will provide qualitative measures and expected benefits.
- In other areas, the costs of implementation may be *de minimis* and not warrant a detailed cost analysis.

It is also important for the reader to note that weighing the merits of various audit recommendations based solely on economic costs versus benefits could be misleading. Therefore, in many cases BCA economic analysis is not provided for:

- Recommendations offered and implementation ordered in prior audits, yet Avangrid failed to implement.
- Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders.
- Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates.
- Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations.
 - Operation transparency
 - Data privacy
 - Physical, information and technology protection

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Governance and Management
BCA III-1

Recommendation Number(s)	Recommendation Text
III-1	Revise the Avangrid, NYSEG and RG&E organization and governance to comply with each element of the NYSPSC Order Adopting Staff Report and Approving Reorganization – Case 12-M-0066, et al. Provide a report to DPS demonstrating how each element has been satisfied.
Priority:	High
Background:	Numerous positions presented as NYSEG and/or RG&E are Avangrid resources or report to Avangrid management.¹ - Patricia Nilsen serves as President and Chief Executive Officer for NYSEG and RG&E and is a member of the board of directors of NYSEG and RG&E. She also serves as the Chief Executive Officer, President, and Controller of RGS Energy Group, Inc. - Noelle Kinsch serves as Vice President, General Counsel and Corporate Secretary of Avangrid Networks, Inc. She is also a member of the Avangrid Networks Senior Management Team. Serving as General Counsel of Avangrid Networks since April 2016, Ms. Kinsch manages the Avangrid Networks legal department and oversees all legal matters for Avangrid Networks and its operating companies. - Joseph Purington serves as the President and Chief Executive Officer of Central Maine Power Company (CMP) and is also a member of the CMP Board of Directors. He also serves as the President of Avangrid Service Company (ASC) and is a member of the ASC Board of Directors. - Andrea VanLuling serves as Vice President, Controller and Treasurer of Avangrid Networks, Inc. and Avangrid Service Company. She is also the Controller and Treasurer of NYSEG, RG&E, and Central Maine Power Company (CMP). In addition, Ms. VanLuling serves on many boards of directors of Avangrid Networks subsidiary companies, including NYSEG and RG&E. - Jeffery Rosenbloom, New York VP, General Counsel and Secretary, is an Avangrid, Deputy General Counsel. The Avangrid, NYSEG and RG&E organization and governance do not comply with NYSPSC Order Adopting Staff Report and Approving Reorganization – Case 12-M-0066, et al. Appendix I of the Order – Financial and Corporate Protection Conditions §7. Governance Provisions (d) states: A majority of the Utility Board of Directors shall be Eligible Directors. An Eligible Director is any individual who is not: (i) an officer or director of HoldCo (other than Networks only); or (ii) an officer or director of any of Iberdrola’s non-utility Affiliates; or (iii) an officer or director of any Competitive Energy Affiliate or Unregulated Affiliate.² §7. Governance Provisions (h) states: NYSEG, RG&E and Networks shall prohibit the members of their Boards of Directors from having

¹ DR 26, 336 and 1226

² NYSPSC Order, Case 12-M-0066, Issued and Effective November 5, 2013.

	interests, financial or otherwise, in competitors to NYSEG, RG&E or Networks, or in Iberdrola affiliates or subsidiaries that are not subject to ratemaking regulation. All four members of the NYSEG and RG&E Board of Directors are officers/directors of other Avangrid unregulated affiliates as described in Chapter III - Conclusion 3. Report Exhibits III-1 and III-6 illustrate the Avangrid corporate structure and highlight these unregulated entities.
Improvements:	Compliance with NYSPSC Order Adopting Staff Report and Approving Reorganization – Case 12-M-0066, et al. Compliance with NYSPSC Orders is necessary for continued operation.
Expected Implement. Timeline:	Six Months
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	As a condition of continued regulated utility operation in the State of New York, Avangrid must comply with NYSPSC Order Adopting Staff Report and Approving Reorganization – Case 12-M-0066, et al. Based on the following, weighing the merits of various audit recommendations using a traditional analysis of economic costs versus benefits could be misleading. - Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders. - Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. - Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-time costs	
Increased annual costs	
Cumulative costs	
Annual savings	
Cumulative savings	

Governance and Management
BCA III-2 through III-12

Recommendation Number(s)	Recommendation Text
III-2	Develop SLAs that include detailed descriptions of services to be provided to clients such as NYSEG and RG&E.
III-3	Revise and update the CAM to provide a detailed list of functions and charges based on the level of products and services descriptions.
III-4	Develop SLAs that define units of measure and volumes of products and services to be provided over specified time periods. Units of measure and volumes are necessary to reconcile levels of services provided – whether they are directly charged or allocated.
III-5	Provide comparisons of cost competitiveness between SLA products and services versus third-party providers to demonstrate whether Avangrid services charged are greater or less than other commercially available services. Report this information in SLAs and implementation plans. Provide updates to the extent information changes.
III-6	Report SLA cost competitiveness to DPS on an annual basis.
III-7	Develop and include comprehensive SLA key performance metrics that pertain to all products and services provided. Report this information in SLAs and implementation plans. Provide updates to the extent information changes.
III-8	Provide measures of quality for SLA products and services.
III-9	Establish SLA economic performance premiums and penalties for all products and services provided.
III-10	Develop and report SLA true-up for budget amounts and invoice amounts based on actual volume of services, quality and cost at year-end.
III-11	Provide a review of SLA agreed-upon service level expectations from the previous year, plus expectations for the upcoming year.
III-12	Provide a detailed comparison of actual versus budgeted services/expenditures and invoice an amount at year-end with supporting variance information.
Priority:	High
Background:	NYSEG and RG&E do not perform traditional utility functions. An extraordinary portfolio of services is provided by the two unregulated Avangrid, Inc. service companies: Avangrid Management Company, LLC (AMC) and Avangrid Networks' subsidiary company – Avangrid Service Company (ASC).³ SLA charges from AMC/ASC to NYSEG and RG&E are determined solely by the service provider and invoiced without the client utility's detailed review, adjustment and approval. As addressed in the prior, and current management

³ DR 26 page 19

	audit, SLAs do not support O&M costs or capital investments for meaningful rate case evaluation. The SLAs implemented by Avangrid do not address all the elements contained in the prior management audit recommendation #8.2:⁴ Avangrid should develop affiliate-specific service agreements covering the individual relationships between the New York utilities and their affiliates, rather than having one generic agreement covering all U.S. service companies and client companies. Avangrid should also develop service level agreements (SLAs) to support and document the services to be provided under the terms of each agreement. SLAs should list and fully describe the services to be provided during the upcoming budget year, anticipated service volumes, the basis for pricing and allocation methods when applicable. When feasible, service agreements and accompanying SLAs should provide for client companies to have control over the volume of service they must purchase, and evidence of client company acceptance of service volumes and prices should be established and documented during the intercompany services budgeting process. Both the affiliate providing services and the affiliate receiving the services should approve and sign the overall agreement covering the general terms of the affiliate relationship as well as each SLA. Avangrid's use of the budgeting process (the Model) to execute the SLAs presents numerous deficiencies.⁵ Without improved SLAs governing the services AMC and ASC provide to their utility clients, charges are imprecise for the sake of accounting labor efficiencies. Cost allocations fail to charge clients for all services provided, irrespective of actual products/services volumes, or providing some clients with a higher level of service/quality than other affiliates.
Improvements:	Compliance with NYSPSC Order - Case 16-M-0610.
Expected Implement. Timeline:	Six Months
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The prior audit recommended that Avangrid develop affiliate-specific service agreements between the New York utilities and affiliates and develop a single Cost Allocation Manual (CAM) that properly describes the corporate and affiliate entities and sufficiently describes all levels of allocation. According to the Revised Implementation Plan, Avangrid accepted these recommendations and would create a single service agreement and a single CAM that include both corporate services and technical services to be signed by the Corporate Service companies and affiliates.⁶ However, Avangrid failed to implement all of the elements contained within the audit recommendation. These elements are provided in greater detail within the audit recommendations III-2 through III-12 noted above.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-time costs:	
Increased annual costs:	
Cumulative costs:	
Annual savings:	

⁴ *Comprehensive Management and Operations Audit of New York State Electric & Gas Corporations and Rochester Gas and Electric Corporation*, Case 16-M-0610, November 2018

⁵ DRs 593, and 892 through 895

⁶ Order Approving an Implementation Plan, Case 16-M-0610, August 8, 2019.

Cumulative savings:	As a condition of continued regulated utility operation in the State of New York, Avangrid must comply with NYSPSC Orders such as 16-M-0610. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations offered and implementation ordered in prior audits, yet Avangrid failed to implement. • Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection

Governance and Management - BCA III-13
Performance Management – BCA XIII-1 and XIII-3

Recommendation Number(s)	Recommendation Text
III-13	Develop strategic planning processes and strategic plans for NYSEG and RG&E, respectively. The resulting plans must focus on the unique issues impacting each utility, with specific goals, objectives, and performance metrics that represent the strategic, operating, and regulatory environment of each utility. See Chapter XIII- Performance Management .
XIII-1	In support of developing separate NYSEG and RG&E strategic plans (see Chapter III- Governance and Management), create a performance management program that provides a clear line of sight from top-level NYSEG and RG&E corporate goals supported by subsequent department/operational goals and KPIs.
XIII-3	Include CLCPA initiatives in annual NYSEG and RG&E corporate goals.
Priority:	High
Background:	Avangrid's strategic planning process, which includes a financial long-term outlook (LTO), SWOT analysis, and strategic objectives are largely focused at the corporate level and does not extend to specific planning for NYSEG and RG&E or other regulated affiliates. NYSEG and RG&E lack independent strategic planning frameworks and are not adequately represented in Avangrid's broader strategic goals. The latest Avangrid strategic plan provides a list of objectives for NYSEG and RG&E, these represent a list of initiatives that do not tie to any improved service levels or performance - highlighting a gap between Avangrid's corporate goals, the local operational needs of NYSEG and RG&E, and utility performance metrics. The latest Avangrid strategic plan does not provide any specific NYSEG or RG&E CLCPA related goals or objectives pertinent to NYPSC orders in Case 18-M-0084. Rather the document only refers to the State of New York CLCPA goals and objectives.
Expected Implement. Timeline:	6 months
Expected Improvement Timeline:	Immediately after implementation
Cost Analysis:	Recommendations to develop strategic planning process documents, as well as the establishment of a performance management framework are expected as part of normal business practice. Inclusion of CLCPA requirements reflected in Case 18-M-0084 in NYSEG and RG&E corporate goals is a recommendation to strengthen corporate governance that supports long-term value, regulatory compliance, and reputation management. Consider the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders.
Benefit Analysis:	
Other Costs and Benefits	
Five Year Payback Analysis	
One Time Costs	
Increased Annual Costs	

Cumulative Costs	• Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Annual Savings	
Cumulative Savings	

Governance and Management
BCA-III-14 and III-15

Recommendation Number(s)	Recommendation
III-14	Have an independent, third-party firm specializing in ERM maturity assessments conduct a comprehensive study of Avangrid's ERM program using industry accepted standards. Review ERM Maturity Assessment RFP with DPS prior to issuance to obtain feedback. Review vendor selection with DPS. Upon completion of the study, provide a full copy of results and plans to implement recommendations with DPS.
III-15	Develop a comprehensive and fully resourced ERM program for Avangrid Networks, NYSEG, and RG&E incorporating all recommendations from the third-party maturity assessment. Furthermore, the ERM program should be aligned with internal controls such that risks can be monitored on a continuous basis. Internal audits of ERM programs, processes, and risk registers must be performed at least on a biennial basis and documented and maintained for future evaluation.
Priority:	Medium
Background:	Avangrid Networks, along with its subsidiaries NYSEG and RG&E, lacks a fully developed Enterprise Risk Management (ERM) program. Although Avangrid Networks' risk management is structured under a General Risk Control and Management Policy with both top-down and bottom-up risk identification approaches, it is limited by only two dedicated ERM resources and lacks a formalized risk appetite statement or well-defined risk tolerances. Risk identification is conducted informally through individual discussions with executives and participation in committees, but without recorded meeting minutes or employee input documentation. The ERM team uses scenario-based analysis and occasionally Monte Carlo simulations for risk quantification but does not consistently apply formal risk-mitigation techniques like "bowtie" analysis, nor does it leverage Key Risk Indicators (KRIs). Additionally, Avangrid Networks' ERM process does not link identified risks with internal controls for ongoing monitoring, resulting in potential gaps in risk management practices and limited influence on strategic or capital planning processes. Avangrid's ERM program has never been reviewed by a third-party, independent firm to assess the maturity of its risk management practices.
Expected Implement. Timeline:	4 months for an ERM assessment. 12 months implement ERM assessment recommendations as part of a fully functional ERM program for Avangrid, NYSEG and RG&E as well as to link risks and internal controls for ongoing monitoring.
Expected Improvement Timeline:	Immediately upon effective implementation of ERM recommendations.
Cost Analysis:	Cost of a comprehensive third-party, independent assessment of the Avangrid ERM program is approximately \$150-\$250k. Recommendations to strengthen corporate governance processes such as ERM support of long-term value, regulatory compliance, and reputation management of Avangrid which extends beyond the economic considerations derived from a cost benefit analysis. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	

	Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates.
One-Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

Budget and Finance
BCA IV-1

Recommendation Number(s)	Recommendation Text
IV-1	Simplify the service company cost-allocation process. Increase the illustration and support documentation so the user can easily understand and verify the allocations to the FERC Form 1. Also, prepare an annual report that summarizes and supports the amounts charged to NYSEG and RG&E. Reporting should be provided to DPS during interim periods between rate cases to support affiliate charges.
Priority:	High
Background:	The complexity of Avangrid's corporate structure inhibits transparency of allocated costs from various affiliates. Two entities are positioned above the New York utilities and allocate charges to NYSEG and RG&E (Avangrid, Inc and Avangrid Networks Inc.). In addition, NYSEG and RG&E are receiving goods or services from other Avangrid operating companies. In total NYSEG and RG&E receive charges from 13 different affiliates The complexity of this structure makes it difficult to evaluate if the New York utilities are receiving appropriate allocated costs based on cost-causation principles.
Improvements:	Improved reporting of affiliate charges is necessary to evaluate the reasonableness of charges to NYSEG and RG&E during interim periods between rate cases.
Expected Implement. Timeline:	Six Months
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The costs of this recommendation should be de minimis as the underlying information already exist in SAP. Capturing and reporting this information in summary form should not be prohibitively time-consuming for internal resources or require outside service providers. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. - Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. - Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-time costs	
Increased annual costs	
Cumulative costs	
Annual savings	
Cumulative savings	

Budget and Finance
BCA IV-2

Recommendation Number(s)	Recommendation Text
IV-2	Improve unitization process. Going forward, Avangrid must ensure that unitized fixed asset data are accurate and consistent for NYSEG and RG&E. Future plant in-service additions must accurately reflect cost, units, vintage and material.
Priority:	High
Background:	Understanding historical unit costs is an important metric to determine if individual capital projects are being managed prudently and consistently. The companies' plant accounting data lack granular detail to allow for calculating a precise unit-cost metric by asset type. Reliable unit costs would provide sound metrics for capital budgeting. Without reliable historic unit costs, the budgeting process is constrained in evaluating the reasonableness and consistency of capital costs.
Improvements:	Improve unitization process
Expected Implement. Timeline:	Six Months
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The costs of this recommendation should be de minimis as Avangrid already performs unitization procedures for NYSEG and RG&E capital assets. Improving on the accuracy of this process should not add significant time for internal resources or require outside service providers. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-time costs	
Increased annual costs	
Cumulative costs	
Annual savings	
Cumulative savings	

Electric Operations - BCA V-1
Gas Operations – BCA VI-12

Recommendation Number(s)	Recommendation Text
V-1	Improve the electric load forecast model(s) used to address issues specific to NYSEG and RG&E, focusing on the following: 1.1. Accuracy 1.2. Weather-normalization methodologies 1.3. Sector segmentation 1.4. Forecasting horizon 1.5. CLCPA considerations 1.6. Econometric equation specification
VI-12	Improve the gas load forecast model(s) to better address CLCPA considerations and to increase the forecasting horizon.
Priority:	Medium
Background:	NorthStar’s review of Avangrid’s load forecasting platform found significant issues in accuracy and completeness. Accuracy issues included large variances between actual and forecast sales and demand. A deeper look into the inaccuracies identified the following concerns: • Poor statistical fit in the regression equations • Poor statistical fit in the weather normalization equations • Insufficient detail in the sector models NorthStar also found that CLCPA initiatives such as energy efficiency and beneficial electrification were improperly included in the forecasts and other technologies were limited in scope and application (such as DER). NorthStar has found that the forecasting function is resource limited due to expansive workload for eight utilities. It appears that a one-size fits all methodology has been applied that does not adequately address the needs of RG&E and NYSEG.
Improvements:	Accurate forecasting provides better tools for: • Revenue forecasting • System Planning
Expected Implement. Timeline:	Two years.
Expected Improvement Timeline:	One year after implementation.
Cost Analysis:	NorthStar has identified the following costs associated with implementing this recommendation: • One additional full-time employee dedicated to NYSEG and RG&E forecasting – Labor Cost \$416,000 per year (2,000 hours at \$200/hour (fully loaded)).
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	

One-time costs	- Consulting services of a specialist in utility load forecasting and statistics for the subject areas listed in the recommendation – One year contract at \$250,000. Based on the following, weighing the merits of various audit recommendations using a traditional analysis of economic costs versus benefits could be misleading. - Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates.
Increased annual costs	
Cumulative costs	
Annual savings	
Cumulative savings	

Electric Operations BCA V-2

Recommendation Number(s)	Recommendation Text
V-2	Issue RFP for planning services for an asset-management system. Work products should include the following: 2.1 Data needs assessment 2.2 Software needs assessment 2.3 System needs assessment 2.4 Staffing needs assessment 2.5 Change management assessment 2.6 List of proposed systems, business and system integrators
Priority:	High
Background:	NYSEG has not achieved its SAIFI targets for the past five years. Avangrid also does not have an enterprise asset management program or an integrated asset management program for its New York utilities. Development of an asset management program since the prior audit has been limited. Avangrid primarily focused on evaluation of substation transformers and circuit breakers using a data analysis tool that offers a first level evaluation of asset condition.⁷ From 2020 thru Q3 2024, Avangrid has invested approximately \$750 million on capital equipment expenditures for NYSEG's and RG&E's electric transmission and distribution infrastructure. The distribution system represents \$536 million of the \$750 million in capital expenditures.⁸ The combined book value of the utilities' electric transmission and distribution systems exceeds \$9B.⁹ Avangrid's focus on substation transformers and circuit breakers in its asset management analysis does not necessarily target the primary equipment failure drivers of poor reliability performance as there are many other assets in the electric system that Avangrid does not conduct analysis. Capital expenditure for substation equipment was over \$120 million from 2020 to Q3 2024.¹⁰ One of the primary purposes of asset management is determining asset performance and health analytics to develop a predictive, capital planning and maintenance strategy. The distribution system represents the largest portion of Avangrid assets and capital expenditure. The largest contributor to outages is distribution system equipment failures, not just substations.¹¹ It is unlikely that the existing data analysis tool will provide the necessary platform to address distribution system asset management.
Improvements:	• Improved public safety. • Possible elimination of DPS negative revenue adjustments due to missed reliability metrics. • Efficient expenditure of capital budgets.

⁷ DR 391

⁸ DRs 1321, 1322, 1323

⁹ RG&E 2023 FERC Form 1 (Page 204-207), and NYSEG 2023 FERC Form 1 (Page 204-207)

¹⁰ DR 1321.

¹¹ DR 685 Attachment 1

	• More detailed knowledge of the systems' strengths and weaknesses. • The ability to target investment decisions to maximize improvement in reliability. • Improved financial value of the systems.
Expected Implement. Timeline:	Three years
Expected Improvement Timeline:	Gradual upon implementation. This recommendation may take up to three years to obtain the full benefits.
Cost Analysis:	Cost Analysis: The development of the asset management plan will require external professional services and/or software systems for: 1) development of a plan and process; 2) development of lifecycle; 3) development of a capital plan; and 4) establishment of service levels. NorthStar found that the cost of developing an asset management plan appears to be dependent on the size and complexity (various types of equipment) of the system. The cost will also be dependent on the amount of effort performed by Avangrid versus the professional services Avangrid may procure. In order of magnitude, asset management plans may cost anywhere from \$150,000 to several million dollars. The full cost is unknown and based on functional requirements, scope (electric/gas/fleet/other) and system selection.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-time costs	
Increased annual costs	
Cumulative costs	
Annual savings	

Cumulative savings	In addition to the capital cost of the system, at least two full-time data entry employees would be necessary to populate the system. NorthStar estimates this cost to be \$800,000/year (4,000 hours/year multiplied by \$200/hour (fully loaded)). Benefit Analysis: NorthStar identified at least six benefits to support this recommendation. These benefits can be quantified by Avangrid when the asset management program is proposed and performance targets are established through a submission of a robust business case including cost/benefit analysis as part of rate case testimony and associated workpapers. <u>Increased public safety.</u> Avangrid's risk associated with failed equipment and contact with non-utility person or property is reduced with few outage events. <u>Reduction in Emergency Response Time.</u> With fewer system outages, more maintenance resources are available on a per outage basis. <u>Increased reliability.</u> The increased reliability will lower Avangrid's exposure to regulatory fines. <u>Increased efficiency in capital program expenditures.</u> NYSEG and RG&E electric transmission and distribution assets are valued at approximately \$9B and Avangrid invests \$150 million in its electric assets annually.¹² It is in Avangrid's interest to logically and methodically address the risks to NYSEG's and RG&E's electric transmission and distribution assets. The asset management plan will establish performance goals where capital programs can be designed for specific performance results. System performance can then be correlated with financial impact. <u>Identification and documentation of system risk.</u> Analysis and documentation will provide a firmer understanding of infrastructure conditions and needs. <u>Reduced operating costs and environmental impacts.</u> As the system risk is identified and mitigated before failures occur operating costs and truck rolls will be reduced.

¹² DR 1321, DR 1322, DR 1323, RG&E 2023 FERC Form 1 (Page 204 to 207), and NYSEG 2023 FERC Form 1 (Page 204 to 207)

**Electric Operations
BCA V-3**

Recommendation Number(s)	Recommendation Text
V-3	Implement a trim cycle of five or six years consistent with the last Joint Proposal.
Priority:	High
Background:	NYSEG has not met its SAIFI target performance in the past five years. Vegetation contact is one of two main causes (equipment failure is the other) for failure to meet the SAIFI target. Avangrid's goal is to reduce trim cycles to 6 years by 2029.
Improvements:	Improved reliability. Compliance with NY State reliability targets. Improved public safety.
Expected Implement. Timeline:	Two years
Expected Improvement Timeline:	This will be a gradual improvement from the first increased trim cycle.
Cost Analysis:	For the past five years, NYSEG has incurred \$ 31.5 million dollars (\$6.1 million per year) in negative revenue adjustments for failure to meet SAIFI targets. NYSEG's vegetation management budget was \$ 53.5 and \$56.4 million in 2022 and 2023 respectively. DPS negative revenue adjustments represent about eleven percent of the trim budget. SAIFI targets are a requirement in the rate cases. Avangrid has committed to a six-year trim cycle. As a condition of continued regulated utility operation in the State of New York, Avangrid must comply with NYSPSC Orders. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-time costs	
Increased annual costs	
Cumulative costs	
Annual savings	
Cumulative savings	

Electric Operations BCA V-4

Recommendation Number(s)	Recommendation Text
V-4	Edit the link to the Hosting Capacity website to read “Hosting Capacity Portal (PV, BESS, Electrification)”. Update hosting-capacity maps according to the documented schedule.
Priority:	Medium
Background:	Avangrid provides hosting-capacity maps on the ArcGIS website for NYSEG and RG&E. The maps identify available areas on the system for the interconnection of EV Charging Stations, DERs, Energy Storage Systems, and Distributed Generation. Hosting maps include: • Photovoltaic • EV Charging and Building Electrification • Battery and Energy Storage¹³ These maps provide information to DER developers on the availability of capacity on the distribution system. The links on the utilities’ websites to the hosting-capacity maps are difficult to identify. They can be found using: Home Page>>Smart Energy>>Innovation>>Distributed Generation>>HC Portal
Improvements:	Improved visibility for DER developers.
Expected Implement. Timeline:	One month
Expected Improvement Timeline:	Immediately upon implementation.
Cost Analysis:	NorthStar believes that editing the link and updating the hosting capacity maps according to the documented schedule is administrative in nature and does not represent any increased costs outside of routine website maintenance. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-time costs	
Increased annual costs	
Cumulative costs	
Annual savings	

¹³ DR 780 and

<https://www.arcgis.com/apps/instant/portfolio/index.html?appid=5fc7fc4820af48838cb5bdfd54e5baad>

Cumulative savings	• Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection

**Electric Operations
BCA V-5**

Recommendation Number(s)	Recommendation Text
V-5	Conduct an independent, third-party audit with DPS oversight of storm costs to determine the accuracy of costs recorded to storm events that comply with the current rate plan and to provide more timely recovery of storm expenditures for NYSEG and RG&E. This includes but is not limited to tracing a major storm and a vegetation management work order to financial statements and reviewing the work order procedure to ensure there are no overlapping or duplicate cost collectors in storms, vegetation management, and capital. As a substantial portion of storm expenditures are paid to external parties, it is difficult to evaluate the reasonableness or accuracy of costs without auditing a valid sample of costs.
Priority:	High
Background:	Storm costs are allowed in rates based on an estimate of the routine costs of service restoration. NYSEG and RG&E are also allowed to defer unusually high levels of service restoration costs resulting from major storms when they meet certain criteria for severity and duration. NYSEG and RG&E's total storm balance was \$529.8 million and \$52.4 million at December 31, 2023, respectively. Within Cases 22-E-0317 et al., DPS Staff recognized that the major storm cost levels incorporated in the 2020 Rate Plan were not sufficient, which resulted in the build-up of substantial regulatory asset balances. The timely recoverability is inhibited by the volume of costs and the transparency of those costs. Recoverable storm costs should be 1) prudently incurred, 2) incremental to base rates, and 3) not funded through other mechanisms (i.e. vegetation management). Appendix H of Cases 22-E-0317 et.al. describes the storm cost accounting for both NYSEG and RG&E.
Improvements:	Conduct a third-party audit of storms costs to determine if the recorded costs comply with the current rate plan (Appendix H of Cases 22-E-0317 et al.).
Expected Implement. Timeline:	One year
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The Major Storm annual rate allowance for NYSEG Electric is approximately \$31.5 million in RY1, \$41.5 million in RY2, and \$46.5 million in RY3. The Major Storm annual rate allowance for RG&E Electric is approximately \$4.5 million in RY1, \$6.0 million in RY2, and \$7.6 million in RY3. Fees for a third-party audit are estimated at approximately 1% of storm costs incurred. Based on these rate allowances the fees for an audit would range from \$460K to \$550K if actual storm incurred costs are consistent with the rate allowance. Additional deferred storm costs would
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-time costs	
Increased annual costs	

Cumulative costs	increase the cost of a third-party audit proportionally (approximately 1% of fees). The benefits of a third-party storm audit are difficult to quantify as direct rate benefits are contingent on audit findings. The audits will provide transparency and additional due diligence on the prudence and transparency of storm costs. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Information and technology protection

**Gas Operations
BCA VI-1 through VI-11**

Recommendation Number(s)	Recommendation Text
VI-1	Comply with §192.1007(a): based on the DIMP presentations of 18 risk categories, identify missing data for the entire pipeline system and develop a plan to collect all relevant information as part of normal pipeline activities.
VI-2	Utilize sources of information such as past O&M procedures, abnormal operating events, purchase orders, material lists from old field orders or standards, and information from industry sources (e.g., plastic pipe database committee (PPDC), NTSB accident reports, or PHMSA advisory bulletins) to help identify threats. PHMSA identified potential threats that include, but are not limited to, non-leak events such as near misses, over pressurizations, and material and appurtenance failures
VI-3	Comply with §192.1007(b): use the information gathered in compliance with §192.1007(a) to identify threats to the integrity of the entire gas distribution systems by segment or lengths of similar characteristics – LPM, traditional LPM, non-traditional LPM and non LPM
VI-4	Do not eliminate any existing or potential threat to a system segment or lengths of pipeline without an adequate basis and justification for doing so. PHMSA clarified through enforcement guidance that to exclude a threat from consideration (i.e., the absence of a risk category as identified in the DIMP), an operator should document the basis for that conclusion and should not exclude a threat based on the unavailability of information to support the existence of such a threat
VI-5	Establish a formal schedule for the identification of missing risk data and report progress to the DPS quarterly
VI-6	Comply with §192.1007(c): subdivide all the NYSEG/RG&E pipeline systems into multiple regions based on similar pipeline characteristics (e.g., contiguous areas within a distribution pipeline consisting of mains, services and other appurtenances; areas with common materials or environmental factors), and for which similar mitigation actions would be effective in reducing risk
VI-7	Comply with §192.1007(d): determine and implement measures designed to reduce the risks from failure of their gas distribution pipelines. Define measures (actions and activities not merely statistical measures) to improve the leak management program
VI-8	Comply with §192.1007(d): prioritize, plan and address the risks of greatest concern first in the NYSEG/RG&E pipeline system replacement program
VI-9	Accelerate the replacement of LPM before the life expectancy expiration of pipeline materials
VI-10	Reconcile, correct and report solutions on record keeping discrepancies in the inspection data based on Conclusion VI-15. Add records that are missing or perform inspections and update the work management system to include missing inspections.

VI-11	Comply with 16 NYCRR 255.825 and change the methodology per DPS guidelines to calculate emergency response time. Report these changes to DPS and revise/correct the emergency response data reported since 2019
Priority:	High
Background:	Avangrid's LPM data is inconsistent and therefore unreliable. Replacement targets are misleading. Avangrid could not reconcile the various levels of mileage of LPM reported.¹⁴ Avangrid's gas pipeline risk analysis and prioritized LPM replacement to improve public safety is deficient and does not comply with Federal and State regulations, as highlighted below. • Highest-risk LPM is not systematically replaced. • Risk analysis is extensively addressed in the DIMP but not implemented as described. • Risk analysis is extensively addressed in the DIMP but not implemented as described. • Even though risk analysis is documented at length in DIMP/TIMP materials reported annually, Avangrid has not effectively applied risk factors to its Leak Prone Pipe. • Avangrid has not updated risk values annually, historical scoring was lost, and LPM segments identified since 2019 will not have a risk score. • Avangrid does not replace NYSEG and RG&E Leak Prone Main pipeline segments based on the highest risk. • Avangrid's process for determining which segments are included in the capital plan does not appear to be based on risk. • Avangrid does not comply with Title 49 Part §192 of the Code of Federal Regulations (CFR), enacted February 12, 2010, specifically §192.1007.
Improvements:	Compliance with the U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) to enact a final rule establishing distribution system and transmission system integrity management requirements (DIMP and TIMP programs, respectively) for natural gas companies to improve public safety. ¹⁵
Expected Implement. Timeline:	One year
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	As a condition of continued regulated utility operation as an operator of natural gas transmission and distribution in the United States and in the State of New York, Avangrid must comply with Title 49 CFR §192 and Title 16 NYCRR Part §255. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-time costs	
Increased annual costs	

¹⁴ DRs 514, 842, 878, 962, and associated Attachments

¹⁵ Title 49 Part 192 of the Code of Federal Regulations (CFR), enacted February 12, 2010, <https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/technical-resources/pipeline/gas-distribution-integrity-management/61706/historyofdimp06152011.pdf>

Cumulative costs	• Recommendations VI-1 through VI-11 require Avangrid to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. • Compliance with Federal and State regulations is not optional. • Ratepayers and investors have relied on and have paid for operational compliance in existing rates since regulations were enacted.

**Project Management
BCA VII-1 and VII-2**

Recommendation Number(s)	Recommendation Text
VII-1	Develop industry-accepted Work Breakdown Structures (WBS) for capital programs/projects and use WBSs in initial phases of project justification and conceptual estimating. Continue refinement as a project progresses. 1.1. Develop well-defined work packages that can be used to track and measure project performance based on earned value. 1.2. Plan work in logical work groupings or packages and subdivide into smaller work groupings. 1.3. Ensure that activities required to perform work in each group are identified and defined, and that dependent relationships are established. 1.4. Formalize use of WBS elements by all project participants in their respective areas of responsibility and as an identification tool for project-management performance measurement. 1.5. Use new WBSs in procurement/contracting activities and specify WBS in contractor framework agreements. 1.6. Use new WBSs for project costing and as a means to assess impact of programmatic changes in funding levels on work content, schedules and contractual support. 1.7. Prepare cost estimates for each WBS element to assist budgeting and project validation. 1.8. Integrate new WBSs with Avangrid's accounting systems, project cost-management systems and schedule-management system (Primavera P6). 1.9. Integrate master work plans and detailed contractor schedules/activities into new WBS to permit integration of schedule information and to facilitate review of status reports and change proposals. 1.10. Refine detailed project estimates initially prepared by WBS element and follow manner in which project work was planned, scheduled, estimated, funded and executed. 1.11. Keep all final, detailed program/project WBSs in project folder for regulatory and audit purposes.
VII-2	Address deficiencies in project estimating by making process improvements. 2.1. Formally assess process used to develop and update capital program/project cost estimates and develop detailed study. Submit detailed study to DPS. 2.2. Formally document in detail development of all electric and gas program/project cost estimates at each level of estimate according to Avangrid's SOP.E-CD.04.04: Cost Management Standard Operating Procedure and at various stages of project life cycle. 2.3. Formally document in detail project cost-estimate reviews at each level of estimate. 2.4. Continuously verify accuracy of estimates versus actual project costs and maintain record of updates to cost-estimating tools. 2.5. Keep all detailed cost estimates in program/project folder for regulatory and audit purposes.
Priority:	High
Background:	The effectiveness of program and project management must include the integration of management decision-making processes used to control construction costs, schedules and quality – as evidenced, for example, by organization and control

	mechanisms used and whether they are sound, adhered to, logical, and responsive to changing conditions. There is a robust body of knowledge defining “generally recognized good practices” in portfolio, program, and project management. Among them are the following: ▪ Practice Standard for Work Breakdown Structure (WBS), Third Edition, Project Management Institute ▪ Construction Management Standards of Practice – 2021; Construction Management Association of America (CMAA) ▪ Guide to the Project Management Body of Knowledge (PMBOK® Guide), 7th Edition, Project Management Institute ▪ Organizational Project Management Maturity Model – 3rd Edition, Project Management Institute (PMI) ▪ Advancement of Cost Engineering International (AACEI) Recommended Practice No. 56R-08. ▪ Best Practices Procurement Manual, FTA, October 2016 Avangrid has cost and schedule management procedures related to program and project planning and management.¹⁶ Avangrid’s SOP.E-CD.04.04: Cost Management Standard Operating Procedure includes a section to guide project managers and the project team through the activities required when developing a WBS associated with cost estimates. Avangrid’s SOP.E-CD.E.04.03: Schedule Management Standard Operating Procedure points out using a WBS in the development of a project schedule. NorthStar found that Avangrid does not use an industry accepted WBS. Furthermore, SOP.E-CD.04.04 address many components of project cost estimating; however, these activities are not followed by project teams. SOP.E-CD.E.04.03 and SOP.E-CD.04.04 are part of Avangrid’s Quality Management System (QMS) that was developed and implemented in 2014 and is ISO9001-certified. The “recognized good practices” contained within the references noted above, when evaluated against current Avangrid program and project management practices result in recommendations VII-1 and VII-2. These recommendations must be implemented and work in concert to ensure the effectiveness of Avangrid’s program and project management performance on behalf of NYSEG and RG&E.
Improvements:	The development and use of a robust WBS enhances scope management, cost control, time estimation, resource allocation, risk management, communication, tracking, and quality control. For large and complex capital projects, a well-defined WBS leads to improved project outcomes, efficient use of resources, and increased stakeholder satisfaction.
Expected Implement. Timeline:	Within a year
Expected Improvement Timeline:	After full implementation of each recommendation and associated tasks.
Cost Analysis:	The cost of following established project management policies, procedures, processes for developing project WBSs and cost estimates are considered part of normal business operations. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading.
Benefit Analysis:	
Other Costs and Benefits:	

¹⁶ DR 239 Attachment 3 Confidential 3.

Five Year Payback Analysis:	Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates.
One-Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Project Management
BCA VII- 3 and VII-4**

Recommendation Number(s)	Recommendation Text
VII-3	Standardize project-prioritization process across all Avangrid departments that provide services to NYSEG and RG&E. Record and retain meeting minutes for all governance committees involved in project-prioritization process.
VII-4	Integrate CLCPA requirements into electric and gas capital project-prioritization process/algorithm. Review requirements and prioritization process/algorithm with DPS.
Priority:	High
Background:	Avangrid employs multiple project prioritization methodologies across departments with little alignment between them. While the Investment Planning group has attempted to integrate quantitative inputs into the project prioritization process since the 2022 capital budget, decisions remain influenced by subjective determinations. NorthStar's review highlighted inconsistencies and disconnects between departments, revealing that Avangrid's current approaches hinder coherent decision-making for NYSEG and RG&E capital investment strategies. Avangrid has yet to incorporate relevant components of CLCPA into project-prioritization methodology.
Improvements:	Improvements to the Company's project prioritization process ensure that resources are allocated to initiatives with the highest strategic impact, optimizing value for the organization. It enables consistent, objective decision-making, reducing biases and improving transparency in project selection. By clearly aligning projects with corporate goals, prioritization enhances focus on key business objectives, driving efficiency and accountability. According to the Joint Utilities of New York statements, New York's utilities are committed to helping make the CLCPA successful. Creating New York's sustainable, clean energy future requires prioritizing reliability, identifying low-cost decarbonization strategies, and investing in new technologies. ¹⁷ CLCPA requirements must be considered in the capital project prioritization process.
Expected Implement. Timeline:	Immediately
Expected Improvement Timeline:	Upon full implementation of a standardized project prioritization methodology across all departments.
Cost Analysis:	The costs to standardize project prioritization processes and integrate CLCPA requirements should be incurred as part of the normal course of business and thus expected to be de minimis. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	

¹⁷ <https://jointutilitiesofny.org/regulatory-resources>

One-Time Costs:	• Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. – Operation transparency – Data privacy – Physical, information and technology protection
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Project Management
BCA VII-5**

Recommendation Number(s)	Recommendation Text
VII-5	Identify and document all tangible benefits for each capital program/project as part of Project Charters and Project Management Plans. Develop and implement method to track and report project benefits for life of program/project. Provide benefit realization reports to DPS for each completed program/project.
Priority:	Medium
Background:	Avangrid's Project Charters and Project Management Plans for NYSEG and RG&E do not include relevant benefits analysis. Instead, they include aspirational statements of benefits. Avangrid has stated that it does not have a process to track benefits following the completion of an electric project. In addition, Avangrid has stated that for gas projects there are several methods for measuring benefits. Outside of greenhouse-gas-emission filing that would demonstrate some amount of improvement due to the LPM program, other examples suggest what Avangrid <i>could do</i>, rather than what it <i>actually does</i> to track benefit realization for certain gas projects.
Improvements:	Documenting tangible project benefits as part of project planning enables Avangrid to drive accountability, align projects with strategic and regulatory priorities, and ensure that investments deliver measurable value to its customers. Tracking and reporting on benefits after project completion is essential for Avangrid to ensure that its capital investments are effective, transparent, and aligned with regulatory expectations.
Expected Implement. Timeline:	Immediately
Expected Improvement Timeline:	Immediately upon implementation.
Cost Analysis:	The costs to include meaningful benefits in project plans and track these benefits should be incurred as part of the normal course of business and thus are expected to be de minimis. Avangrid's project management documentation provide guidance on developing Project Charters and Project Management Plans. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Project Management
BCA VII-6**

Recommendation Number(s)	Recommendation Text
VII-6	Conduct an independent, third-party audit with DPS oversight of Avangrid's record-management practices that includes electric and gas program/project records.
Priority:	High
Background:	During the audit, NorthStar reviewed Avangrid's extensive library of project management policies and procedures and requested a selection of capital project documentation. NorthStar requested project management documents such as Work Breakdown Structure, detailed cost estimates, project schedules, earned-value reporting, project closure reports (PCR)/forms, etc., for a selection of completed NYSEG and RG&E electric and gas projects. Avangrid was unable to produce documents as part of its own capital investment planning and execution process. Avangrid has procedure documentation on project records/documents as well as record retention schedules. ¹⁸
Improvements:	An independent, third-party audit would lead to improved compliance, reduced risk, enhanced transparency, and strengthened record-management practices, alignment of the company's operations with regulatory and industry standards. Furthermore, an audit should lead to Avangrid following its own procedures concerning identifying, filing, and retaining capital project records.
Expected Implement. Timeline:	Immediately
Expected Improvement Timeline:	Improvements expected upon implementation of audit results.
Cost Analysis:	Cost of a records management audit would be between \$250k-\$500k depending upon the scope of work. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. – Operation transparency – Data privacy – Physical, Information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

¹⁸ DRs 239 Attachment 2 and 885 Attachment 1.

**Project Management
BCA VII-7**

Recommendation Number(s)	Recommendation Text
VII-7	Develop project plan and schedule and assign resources to update all Avangrid QMS procedure documentation. Include incentive compensation metrics for VPs of Electric and Gas Operations, respectively, to complete documentation updates. Review plan, schedule and incentive compensation metrics with DPS.
Priority:	High
Background:	During the audit, NorthStar reviewed Avangrid's extensive library of project management policies and procedures. However, almost half of procedures have not been revised for more than five years, including some that date back over a decade. The process to update procedures has been slow, with no schedule of completion or sense of urgency noted at any of Avangrid's ISO 9001 and ISO 14001 management review meetings. NYSEG's and RG&E's capital budget forecasts are hundreds of millions each year with team's executing projects without the benefit of updated policies and procedures.
Improvements:	Maintaining updated QMS documentation is essential to ensure that processes reflect current operations, meet regulatory and stakeholder requirements, and support effective quality management. There are ISO-9001 clauses that discuss maintaining updated documentation.
Expected Implement. Timeline:	3 months
Expected Improvement Timeline:	Immediate upon completion
Cost Analysis:	The estimated cost of updating policies and procedures is between \$500,000 and \$1M depending on the number of outdated policy and procedure documents. This estimate considers 5-10 internal resources, 3 months, \$200/hour (fully loaded). Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. - Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. - Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

Project Management BCA VII-8

Recommendation Number(s)	Recommendation Text
VII-8	Engage an independent monitor to oversee electric and gas program/project planning, management and delivery. Key responsibility of the independent monitor is to review and report to DPS Staff on effectiveness of capital program/project planning, capital budgeting processes and program/project management, plus program/project cost effectiveness, efficiency, appropriate cost assignment, benefit realization and tracking, and other information. Include DPS in RFP development, vendor proposal review and selection, and contracting. Shareholders should be responsible for the cost of the independent monitor.
Priority:	High
Background:	During the audit it was found that Avangrid could not demonstrate effective management of NYSEG and RG&E capital projects. Avangrid could not produce documentation necessary to assess the decision-making process and for an independent observer to evaluate effectiveness of the organization and control mechanisms used during project planning, delivery and close-out. NorthStar's review of the project management task area found that Avangrid does not retain project records or documentation to demonstrate effective project management or evidence of sound project decision-making. This recommendation, in conjunction with Recommendation VII-11, will ensure on a going forward basis that Avangrid implements and adheres to proper project management practices.
Improvements:	The appointment of an independent monitor is expected to drive improvements across multiple dimensions—accountability, financial accuracy, resource allocation, project delivery, and benefit tracking—leading to a more effective, transparent, and compliant capital program. This oversight could transform Avangrid's project management into a more reliable and efficient system, delivering measurable value to both the utility and its stakeholders.
Expected Implement. Timeline:	6 months
Expected Improvement Timeline:	Once the Independent Monitor (IM) is in place.
Cost Analysis:	Once the scope of the Independent Monitor is defined by DPS and Avangrid and proposals are received the true cost be known. The cost determined as part of the IM selection should be attributed to shareholders. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. - Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. - Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-Time Costs:	
Increased Annual Costs:	

Cumulative Costs:	– Operational transparency – Data privacy – Physical, information and technology protection
Annual Savings:	
Cumulative Savings:	

**Project Management
BCA VII-9 and VII-10**

Recommendation Number(s)	Recommendation
VII-9	Improve coordination and management of public improvement and interference projects. 9.1 Develop and implement procedure documentation for coordination of electric and gas public improvement and interference projects with municipalities and agencies. Integrate with Project Outreach group's procedures. 9.2 Actively solicit short- and long-term capital plans from key municipal and agency stakeholders. 9.3 Work with DPS to develop annual post-project survey for public improvement and interference projects to be delivered to municipalities and agencies upon project completion. 9.3.1 Incorporate results into continuing process-improvement efforts. 9.3.2 Provide annual report of survey results and process-improvement initiatives/progress to DPS. 9.3.3 Include completed survey metric as part of incentive compensation for VPs delivering services to municipalities and agencies. Review survey completion metric to be included in incentive compensation plan with DPS.
VII-10	Include all project outreach costs in capital program/project cost estimates. Directly charge all actual project outreach costs to capital programs/projects so that booked capital costs reflect actual project costs.
Priority:	Medium
Background:	Avangrid's Gas Operations and Electric Operations groups lack formal procedure documentation for managing interference/public improvement projects on behalf of NYSEG and RG&E. Avangrid stated that it has not received any formal complaints from stakeholders involved in interference/public improvement projects during the audit period. However, Avangrid does not proactively perform post-project surveys with stakeholders to identify process improvements or other issues in planning, coordination or execution of interference and public improvement work. Avangrid's process improvements related to interference/public improvement projects focused on meetings with stakeholders. Specifically, improvements focused on increasing the number of meetings – for example, moving from annual to biennial frequency – and addressing structure and content of meetings (i.e., subject area, length of meeting time, and resources involved, etc.) for interference projects. Avangrid did not provide any performance measures related to interference/public improvement projects. Avangrid does not receive long-term capital project plans from municipalities or government agencies to coordinate interference/public improvement projects with NYSEG or RG&E capital plans. Avangrid Project Outreach group does not budget or charge projects when outreach services are provided to NYSEG and RG&E capital projects.
Improvements:	Improved coordination and management of public improvement and interference projects are expected to yield operational efficiencies, cost savings, stronger stakeholder relationships, enhanced customer service, and improved regulatory compliance through policy and procedure documentation, better understanding of

	future municipal projects, and post project survey that could lead to project delivery improvements. Including outreach costs into project estimates and directly charging these costs will improve budgeting accuracy, financial accountability resulting in transparent and efficient project management at Avangrid.
Expected Implement. Timeline:	3 months
Expected Improvement Timeline:	Improvements should manifest upon implementation of the recommendations.
Cost Analysis:	The costs of policy and procedure documentation, change management associated with these procedures and post-project survey development is estimated at two resources for 3 months at \$200/hour (fully loaded) for approximately \$200,000. Obtaining municipal and agency plans and including outreach costs in project estimates should be incurred as part of the normal course of business and thus are currently expected to be de minimis.
Benefit Analysis:	Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. – Operation transparency – Data privacy – Physical, information and technology protection
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Project Management
BCA VII-11**

Recommendation Number(s)	Recommendation
VII-11	Initiate an independent review with DPS oversight to determine if Avangrid is following its own project management policies and procedures on select, completed gas projects over \$500K and select, completed electric projects over \$1M up to CY2023 to quantify the cost of unreasonable management.
Priority:	High
Background:	During the audit it was found that Avangrid could not demonstrate effective management of NYSEG and RG&E capital projects. Avangrid could not produce documentation necessary to assess the decision-making process and for an independent observer to evaluate effectiveness of the organization and control mechanisms used during project planning, delivery and close-out. NorthStar's review of the project management task area found that Avangrid does not retain project records or documentation to demonstrate effective project management or evidence of sound project decision-making.
Expected Implement. Timeline:	3 to 5 months to identify a third-party and begin the study.
Expected Improvement Timeline:	N/A
Cost Analysis:	Capital projects are essential investments for maintaining the NYSEG and RG&E gas and electric infrastructure, enhancing system reliability, safety, and efficiency, and meeting environmental goals. Their success depends on strong project management, governance, and skilled teams with industry expertise. However, NorthStar's review found that Avangrid lacks adequate project records and documentation, which hinders the ability to assess the effectiveness of project decisions and management practices. This gap in project records limits transparency, impedes fair evaluation of project outcomes, and raises concerns about the reliability of current project oversight. To address these issues, an in-depth study is warranted to fully analyze the underlying causes, assess potential impacts on financial and operational performance, and identify areas of unreasonable management decisions.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback:	
One-Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	
	Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection

**Work Management
BCA VIII-1 through VIII-8**

Recommendation Number(s)	Recommendation Text
VIII-1	Develop an integrated work management system covering all NYSEG and RG&E Gas and Electric operations, maintenance and construction resources based on engineered time standards. This system should cover routine operations, repetitive maintenance activities, planned work and support requirements, while also providing continuous feedback on workforce effectiveness. The system should be in an easy-to-use format expressed in man-hours, along with the combined employee and contractor capacity available, supported by real-time reporting of capacity utilization. The system should include the following specific elements: 1.1. Documentation of work level versus resource histogram development and work plan process 1.2. Enhanced methods to calculate workforce capacity and utilization 1.3. Expanded workforce coverage in reports 1.4. Documentation of processes for establishing workforce levels 1.5. Documentation of criteria for adding contractor capacity 1.6. Real-time variance reporting for O&M and project costs 1.7. Tracking performance targets versus actuals.
VIII-2	Develop management information reporting and organizational reporting relationships to support integrated work management system.
VIII-3	Develop formal reports on trends covering NYSEG and RG&E workload levels, workforce productivity and utilization. Analysis of these trends should identify high-performing functional areas, along with areas needing improvement. This should serve as a foundation for developing strategies to improve workforce performance.
VIII-4	Integrate reported information covering NYSEG and RG&E workload levels, workforce productivity and utilization with SLA recommendations contained in Chapter III – Governance.
VIII-5	Establish formal processes to use work management data as part of annual business planning for NYSEG and RG&E operations and maintenance.
VIII-6	Refine formal work management practices for NYSEG and RG&E Gas and Electric engineering and design functions. Work management systems should include appropriate system tools to support various individual and distinct engineering functional processes and integrate with SLA recommendations contained in Chapter III – Governance and Management. Elements that should be formalized include the following: 6.1. Scheduling 6.2. Prioritization and planning 6.3. Resource allocation and leveling 6.4. Performance measurement 6.5. Budget planning and control 6.6. Vendor tracking 6.7. Document/drawing control 6.8. Records management 6.9. Procurement management 6.10. Time reporting.
VIII-7	Develop and report on overtime targets and performance metrics for NYSEG and RG&E Gas and Electric operations and maintenance organizations. These metrics should be based on economic analyses and verified industry norms.
VIII-8	Annually review the design of monitoring and controlling reports to improve their usefulness.

Priority:	Medium
Background:	Work definition is the description, documentation and communication of all activities needed to accomplish objectives, including a standard or estimate of resource requirements in man-hours. Work definition involves the determination of the work performed and allocation into discrete, measurable units. Avangrid's unregulated service companies – ASC and AMC – providing an extensive portfolio of products and services to NYSEG and RG&E, do not have formal, standardized work management processes in the performance of traditional gas and electric utility operations for NYSEG and RG&E. While some organizations and functional areas may use informal activities for planning, scheduling and reporting work, none have sufficient data and tools to support a continuous improvement effort. More importantly, Avangrid does not report work accomplished and performance to its client utilities – NYSEG and RG&E. Avangrid does not use accepted industrial definitions of work management or report work performed directly for NYSEG and RG&E. Responses to NorthStar work management inquiries in this area consisted of oversimplifications. Responses to work management and current service level agreements cannot support charges from Avangrid AMC and ASC for services charged to NYSEG and RG&E. Avangrid's responses to changes in its work management processes have been contradicted in its responses to NorthStar inquiries. Avangrid describes five work management related system implementation efforts, but these do not address fundamental work management elements such as work definition, assignment, scheduling or performance reporting. Based on responses to audit information requests, the five Avangrid work management-related system implementation efforts evaluated exhibit multiple deficiencies Work definitions that have been defined to date do not include man-hours required to perform the core work activities. Without quantification the fundamental processes of work management, including scheduling, work order procedures, progress reporting against tasks, quality controls, or performance measurements such as productivity, utilization, lost/delay time and trend analyses cannot be supported.
Expected Implement. Timeline:	To the extent possible, the implementation of routine trend reporting should be done in conjunction with any planned work management system improvements, such as those planned for operations, maintenance, and support functions. To start, each of the Avangrid organizations providing products and services to NYSEG and RG&E should perform a gap analysis of their respective work management systems and processes, covering the functional processes for the following: • Scheduling • Prioritization and planning • Resource allocation and leveling • Performance measurement • Budget planning and control

	- Records management - Time reporting. The gap analysis will identify the need for work management system and process improvements in each organization and should be performed. Following the gap analysis, Avangrid should determine what can be leveraged from current development efforts: - Prepare a document which provides an overview of a work management improvement program for operations, maintenance, and support organizations. The overview should describe the purpose, methodology, and results of each initiative, including the impact on the work processes. - Each organization should determine and quantify the potential to improve its operations, and to identify other opportunities to improve its work processes. Once all organizations identify their work management needs, and assess the applicability of the existing initiatives, Avangrid should determine the steps for development and implementation of an enterprise-wide program.																				
Expected Improvement Timeline:	Upon implementation and ongoing.																				
Cost Analysis:	A thorough gap analysis should be performed by an independent consulting firm with requisite expertise in work management and industrial engineering. NorthStar estimates that this could cost \$500,000 to \$1,000,000. Developing engineered standards for operations, maintenance and support functions along with work management reporting should be performed by a combined Avangrid and independent consulting firm. Avangrid labor estimate: \$1,000,000 Contracted labor: \$2,000,000 O&M <table> <tr><td>Labor</td><td></td></tr> <tr><td>Outside services</td><td>\$4,000,000</td></tr> <tr><td>Materials</td><td></td></tr> <tr><td>Systems</td><td></td></tr> <tr><td>Other Costs</td><td></td></tr> </table> Capital <table> <tr><td>Labor</td><td></td></tr> <tr><td>Outside services</td><td></td></tr> <tr><td>Materials</td><td></td></tr> <tr><td>Systems</td><td>\$ - unknown and based on functional requirements and system selection.</td></tr> <tr><td>Other Costs</td><td></td></tr> </table>	Labor		Outside services	\$4,000,000	Materials		Systems		Other Costs		Labor		Outside services		Materials		Systems	\$ - unknown and based on functional requirements and system selection.	Other Costs	
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Outside services																					
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Systems	\$ - unknown and based on functional requirements and system selection.																				
Other Costs																					
Benefit Analysis:	Benefits associated with engineering work management processes and systems include: - Framework for prioritizing workload. - Improved means of tracking funding commitments, and using this information in the budget control and performance measurement processes - Improved means to capture, track, and schedule work backlog.																				
Other Costs and Benefits:																					
Five-Year Payback:																					

One-Time Costs:	• Consolidation of tools, and consistency in the methods, processes, and convention employed for all aspects of manpower planning and scope management. • Improved time reporting, formatted correctly for work management, providing the appropriate link to schedule updates and the performance measurement, and the ability to communicate with accounting. • More flexible, comprehensive reporting and feedback mechanisms enabling a quicker and more effective response to management requests. • Improved historical data repository for all work categories to improve future planning and budget management. • Complete, integrated work plans which assist operations, maintenance and support personnel in managing their entire workload, and which are responsive to day-to-day work-load dynamics. • Expanded scope of schedule and resource management representing all competition for all resources. • Improved work completion commitment planning. • Improved scope control due to the availability of information to accomplish work scope tradeoffs at all levels in the organization. • Improved link between budgeting and workload requirements. NorthStar cannot perform payback analysis without additional data, such as the annual labor cost of Avangrid and consulting resources.
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Customer Operations
BCA IX-1 and IX-2**

Recommendation Number(s)	Recommendation
IX-1	Perform in-depth analysis to cross reference NYCRR Part 11 and 13 regulations with built-in system controls and manual processes required for compliance with each customer service rule. Exception reports should be created to ensure controls are sufficient.
IX-2	Implement the following as related to compliance assessment findings for 16 NYCRR Part 11 and 13: 2.1 Create metric to monitor Timing of Service non-compliance instances. 2.2 Include actual payment due date on customer bills. 2.3 Provide training and updated materials related to security-deposit requirements and reasonable proof of identify. 2.4 Allow for negotiation of Deferred Payment Agreements (DPAs) to ensure fair and equitable consideration of the customer's financial circumstances. 2.5 Mail the Annual Notification of Rights to every customer
Priority:	High
Background:	During NorthStar's review of Avangrid's controls for NYCRR Part 11 and 13 deficiencies were found in training documentation and controls. • Service Application and Provision of Utility Service (Written notification of Service Denial) – Control needed to ensure Customer should receive prompt written notice of denial within 3 business days of receipt of application for service. • Service Termination Notice – Due dates need to be included on customer bills. • Security Deposits - Training material needs to be updated to reflect the utility cannot require deposits for those that fail to provide reasonable proof of identity unless a hearing has been held pursuant to PSL section 26(2) and required findings have been made by the commission. • Deferred Payment Agreements – Customers need to be made aware that customization of payment agreements is an option. • Annual Notification of Rights – Annual notification of rights have to be mailed to the customer to meet definition of notice requirement.
Expected Implement: Timeline:	One year
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The costs for process improvements and updating documentation should be incurred as part of the normal course of business and thus are currently expected to be de minimis. The following expected benefits will be realized: • 16 NYCRR § Part 11 & 13 compliance. • Fair Treatment: Ensures fair treatment of all residential energy customers. • Consumer Protections: Strengthens consumer protections and boosts consumer confidence in the energy market.
Benefit Analysis:	
Other Costs and Benefits:	
Five-Year Payback:	

One-Time Costs:	• Utility Service Continuity: Helps ensure continued utility service as part of the public good. • Billing and Payment Protections: Provides protections in areas such as application for service, customer billing, and payment and complaint procedure.
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

Customer Operations
BCA IX-3, IX-11, and IX-12 and IX-16

Recommendation Number(s)	Recommendation Text
IX-3	Implement version control for process and procedure/training documents, including but not limited to, description of content changed, date content changed, required update frequency, content author, reviewer and approver.
IX-11	Formally communicate to DPS any planned changes to business operations that result in consolidation or situations where outsourcing of utility work is done.
IX-12	Implement formal contract management to ensure such things as agreement-number assignments, change-order numbering, and monitoring of contract values in comparison to invoiced amounts.
IX-16	Create a formal invoice review process and ensure this review process includes, but is not limited to, the following: 16.1 Invoices received and added to transaction record. 16.2 Invoice contains appropriate line-item information 16.3 Invoice aligns with invoiceable items, per contract, and item amounts match. 16.4 Cost allocations are justified, and methodology is within transaction record. Also ensure that charges to NYSEG and RG&E can be directed supported, and that each budget owner has approved. 16.5 Transaction record indicates all budget owners have approved cost allocations. 16.6 Transaction is recorded correctly.
Priority:	Medium
Background:	During NorthStar's audit of Customer Operations deficiencies in general business standards. • Formal Version Control - Avangrid training material covers a wide range of customer operations functions but lack formal version control to determine basic information – such as when material was changed, what material was changed, reviewers, approvers etc., making it impossible to determine when process changes were made. • Contract Management – The following examples of issues were found with contract management and contract value monitoring: - Contracts do not include contract / PO numbers. - Vendor name on the contract does not match vendor name on financial summary data. There is no dba or other reference on the contract to indicate any relationship between companies. - Avangrid contract with the vendor shows a large time lag between agreement made and executed date. Accounting transaction data also indicate payments were made to vendor for services prior to contract execution. - Business budgets did not reflect contract amounts. - Vendor invoices exceed contracted values. • DPS was not informed of decisions made to outsource work impactful to NYSEG and RG&E operations, thus impacting DPS oversight. • Invoice Review Process – The following examples of issues were observed: - Avangrid did not provide invoices to substantiate call-center charges for a major call center vendor.

	- Vendor invoiced for a fee that was not a chargeable fee. - Accounting entries were not appropriately itemized. - PO numbers on majority of invoices were hand corrected.
Expected Implement: Timeline:	One year
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The costs for process improvements and updating documentation should be incurred as part of the normal course of business and thus are currently expected to be de minimis. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Customer Operations
BCA IX-4**

Recommendation Number(s)	Recommendation Text
IX-4	Eliminate bi-monthly meter readings and complete universal AMI implementation. Until then, offer to move customers complaining of bill estimates to a leveled payment plan.
Priority:	High
Background:	Avangrid does not follow its own bill estimation procedures for NYSEG and RG&E. NYSEG and RG&E customers are billed monthly, but meters are read bi-monthly. The bill between the meter reads is estimated based on the daily usage from the billing cycle, one year prior. Avangrid's procedures call for adjustments based on weather differences between the current estimated bill and the bill from one-year ago. Avangrid does not execute this activity as noted in its own procedure.¹⁹ The monetary impacts to NYSEG and RG&E customers associated with Avangrid not following bill-estimation procedure are minimal and temporary only in the case when an actual read is obtained after estimate. The consequence when this action is not completed results in customer inconvenience, which may increase customer complaints, and call center call volume. When AMI is universally installed on the NYSEG and RG&E systems, meters will be read monthly eliminating the mid-cycle estimated bill. Until such time, Avangrid can eliminate estimated bill complaints by offering budget billing (leveled payment plan).
Improvements:	Fewer customer complaints related to estimated bills. Increased customer satisfaction
Expected Implement. Timeline:	Three months
Expected Improvement Timeline:	Immediately after implementation
Cost Analysis:	The NYSPSC issued an Order approving NYSEG's and RG&E's AMI programs in Cases 19-E-0378 et al. on November 19, 2020.²⁰ AMI is a recognized operational improvement in many NY Commission Orders. Avangrid is in progress of installing AMI on the NYSEG and RG&E systems. Project completion is expected mid-year 2025. Until Avangrid completes AMI installation, Avangrid must train customer service representatives to offer budget billing until the AMI migration is completed. The costs associated with enrolling a customer in budget billing are considered de minimis. Based on the following, weighing the merits of various audit
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-time costs	
Increased annual costs	
Cumulative costs	
Annual savings	

¹⁹ DRs 1064 and 1065

²⁰ See Cases 19-E-0378 et al, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation for Electric and Gas Service, ORDER APPROVING ELECTRIC AND GAS RATE PLANS IN ACCORD WITH JOINT PROPOSAL, WITH MODIFICATIONS, Issued and Effective, November 19, 2020.

Cumulative savings	recommendations using traditional economic costs versus benefits could be misleading. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection

**Customer Operations
BCAs IX-5 through IX-7**

Recommendation Number(s)	Recommendation Text
IX-5	Develop quarterly report of shared-meter investigations, including status and pending issues for upper management. Include milestones of investigations.
IX-6	Develop database of shared-meter investigations including customer information, date of complaint, date of investigation, resulting actions and dates, and record locator.
IX-7	Maintain shared-meter investigation records for a minimum of five years.
Priority:	High
Background:	A “shared meter,” also referred to as diversion of service, occurs when a utility meter that measures gas, electricity or steam service to a tenant’s dwelling also measures service to areas outside the dwelling. This may include another apartment or common-area lighting. The tenant pays for services to both the rental unit and the outside areas.²¹ Section 52 of the New York Public Service Law, also referred to as the New York Shared Meter Law, was enacted on October 24, 1991. A review of Avangrid’s shared meter investigations found poor documentation and record retention.²²
Improvements:	Demonstration of compliance with Section 52 of the New Public Service Law.
Expected Implement. Timeline:	Six months
Expected Improvement Timeline:	Immediately after implementation.
Cost Analysis:	The recommendation compels Avangrid to demonstrate compliance with Section 52 of the New York State Public Service Law and Avangrid document retention requirements. As a condition of continued regulated utility operation in the State of New York, Avangrid must comply with regulations such as the NY Shared Meter Law. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-time Costs	
Increased Annual Costs	
Cumulative Costs	
Annual Savings	

²¹ NY Shared Meter Law <https://codes.findlaw.com/ny/public-service-law/pbs-sect-52/>

²² DR 292 and DR 292 Attachments 1-3, DR 296 Supplement 1, DR 851 Supp 1, DR 292, DR 296 Supplement 1 Attachment 1, DR 851 all attachments, DR 851 Supp 1, DR 885 Supp1.

Cumulative Savings	• Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection

**Customer Operations
BCA IX-8**

Recommendation Number(s)	Recommendation Text
IX-8	Include additional information in the letters sent to customers about rate changes. 8.1 Current rate schedule – NYSEG only 8.2 Requirements of current rate schedule – NYSEG only 8.3 Detailed reason for change (e.g., the demand on your facility was 512 kW, exceeding 500 kW twice in the past 12 months) – both RG&E and NYSEG. 8.4 Requirements of new rate schedule – NYSEG only
Priority:	Medium
Background:	NYSEG and RG&E develop monthly exception reports identifying customers that do not qualify for their currently assigned rate. After analysis of the customer's billing information, if a rate change is necessary, a letter is sent to the customer and the rate is changed. NorthStar found, particularly at NYSEG, that the letters were deficient of relevant information regarding the change. ²³
Improvements:	Increased transparency of operations. Improved customer service. Reduced customer calls to the call center.
Expected Implement. Timeline:	One month
Expected Improvement Timeline:	Immediately after implementation.
Cost Analysis:	The recommended information to be included in the standardized letters is necessary to evaluate whether the customer is assigned the correct rate. The effort and cost to revise the standard letter format and include the relevant information is de minimis. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. - Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. - Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-time costs	
Increased annual costs	
Cumulative costs	
Annual savings	
Cumulative savings	

²³ DR 272 and DR 272 Attachments 1-15

Customer Operations BCA IX-9

Recommendation Number(s)	Recommendation Text
IX-9	Provide more visibility on the utilities' websites for time-of-use rate options.
Priority:	High
Background:	Both NYSEG and RG&E offer residential time-of-use rates. These rates offer cost savings to customers that can shift energy use to off-peak periods. The shift in usage is beneficial to the utility as the summer system load factor would become more efficient. In areas of load constraint, this becomes a reasonable alternative to NWA and infrastructure investments. A review of the utilities' website found it very difficult to learn about and obtain access to the time-of-use rate options.
Improvements:	Increased transparency of operations. Improved customer service. Potential utility summer on-peak cost savings. Potential customer cost savings on utility bills.
Expected Implement. Timeline:	Six months
Expected Improvement Timeline:	Immediately after implementation.
Cost Analysis:	The utilities have a menu option for Smart Energy on their home pages. NorthStar suggests adding a new link to the time-of-use pricing options on the Smart Energy page. This link can then connect to a Time-of-Use page that provides: • A description of the rate • The types of customers that benefit from the rate • How to apply for the rate The costs associated with creating a new link with the required information to the web are de minimis. Utility savings are dependent on customer enrollment and cannot be quantified at this time. With that said, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operational transparency - Data privacy - Physical, information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-time costs	
Increased annual costs	
Cumulative costs	
Annual savings	
Cumulative savings	

**Customer Operations
BCA IX-10, IX-13 and IX-19**

Recommendation Number(s)	Recommendation Text
IX-10	Determine drivers of substantial increase in Call Center costs between 2018 and 2023. Ensure costs are directly attributable to NYSEG and RG&E.
IX-13	Unsupported expenses such as Customer Operations charges that cannot be substantiated by invoices and proven to be directly attributable to services for NYSEG and RG&E, should be classified as “below the line” and paid by shareholders.
IX-19	Perform further financial review of Marketing and Outreach transactions to determine if costs are attributable to NYSEG and RG&E – and to define extent of corporate marketing transactions included in reporting. Eliminate corporate marketing costs in Outreach and Education and costs that are not directly attributable to NYSEG and RG&E.
Priority:	Medium
Background:	- NorthStar’s audit of Customer Operations found a substantial increase in Call Center costs between 2018 and 2023 with little improvement in customer operations metrics. - The annual reporting process is completed manually outside of SAP to identify applicable transactions for reporting purposes. Overall quality of response indicates that Avangrid has difficulty reporting spend for Outreach and Education. Variances also were evident between SAP data and reported spend. Energy-efficiency spend was provided as annual aggregated amounts, also without vendor names, and contained color-coded identifiers for outreach-method category.
Expected Implement: Timeline:	6 months
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The costs for transaction analysis and verification should be incurred as part of the normal course of business and thus are currently expected to be de minimis. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. - Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. - Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Customer Operations
BCA IX-14 and IX-15**

Recommendation Number(s)	Recommendation
IX-14	Improve QRS and SRS case file documentation. Include a minimum of the following: 14.1 Usage and billing history. 14.2 Customer communication log. 14.3 Root cause assessment. 14.4 Proof of feedback sent to responsible department. 14.5 Copy of customer letter for case closeout.
IX-15	Create KPIs to track and monitor the following: 15.1 First Call resolution 15.2 Delayed Bills 15.3 Commitments to follow-up with customers on issues when call-back is promised.
Priority:	Medium
Background:	During NorthStar’s review of Avangrid’s QRS and SRS cases, deficiencies with complaint tracking, case file documentation, representatives achieving first-call resolution, resolution of customer issues, and internal mechanism to provide feedback to operational area that was the root cause of customer complaint was evident. • A summary of observations from the NYSEG and RG&E case files is below: - Missing dates: Some QRS response dates and SRS response dates. - Case Closeout: Cases closed without evidence of SRS response or customer letter. - Incomplete case files: Generally, files do not include information such as usage and billing history or the communication log between customer and Avangrid representative. - Internal actions: No internal follow-up is noted to fix root causes of issues such as determining why a customer was double-billed for service or why a safety-inspection record was missing from the system. - Actions to resolve customer problems: Opportunities to solve customer issues not taken, such as asking the customer to take a picture of their meter to determine if usage was reasonable or if meter was not misread. - Service level: Inability to meet service-level response time. - Starting in 2024, weekly meetings were held to discuss customer escalation, known as the CRC – NYSPSC Weekly Review. Case discussions reflect the following: - Difficulty in first-call resolution, as indicated by extensive number of times the customer calls without problem resolution and multiple call transfers. - Call Center Representatives incapable of solving customer issues and lack of research and follow-up to assist customer. - Reasons given for escalated complaints were from the perspective of why a customer issue became an SRS complaint

	and, in most cases, lacked internal feedback to the responsible (root-cause) department within the company. - Internal weekly meetings indicate: - Difficulty in first-call resolution, as indicated by extensive number of times the customer calls without problem resolution and multiple call transfers. - Call Center Representatives incapable of solving customer issues and lack of research and follow-up to assist customer. - Reasons given for escalated complaints were from the perspective of why a customer issue became an SRS complaint and, in most cases, lacked internal feedback to the responsible (root-cause) department within the company.
Expected Implement: Timeline:	One year
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The costs for process improvements and updating documentation should be incurred as part of the normal course of business and thus are currently expected to be de minimis. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. - Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. - Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

Customer Operations BCA IX-17

Recommendation Number(s)	Recommendation Text
IX-17	Several areas of deficiency were noted in the Low-Income Program area: 17.1. Create a comprehensive Program Manual to include end-to-end program management. Include a minimum of the following: 17.1.1. Stakeholders. 17.1.2. Applicable tariffs. 17.1.3. Proof of eligibility requirements. 17.1.4. Process and procedure documentation. 17.1.5. Program goals and KPIs. 17.1.6. Program budget by admin, marketing/outreach and implementation. 17.1.7. OTDA file-matching cadence. 17.1.8. Tier discounts – maintenance of Tier discounts. 17.1.9. EAP form – English and other languages. 17.1.10. EAP letters – English and other languages. 17.1.11. Marketing and Outreach collateral – English and other languages. 17.1.12. Marketing and Outreach Strategy. 17.1.13. Community Based Organization partners. 17.1.14. List of reports with samples. 17.1.15. Training material locations. 17.1.16. Quality audit report locations. 17.2. Update Tariffs as noted in chapter. 17.3. Implement monthly quality review process.
Priority:	Medium
Background:	During NorthStar's audit of Customer Operations deficiencies in Tariffs and program administration were observed. Tariff deficiencies: • Training documents dated July 2022, November 2023 and July 2023 indicate that program changes took place effective September 1, 2021. Training documents were not provided prior to July 2022. Similar to tariffs and EAP form, the training document is missing expanded eligibility programs. • Program eligibility verbiage within training documents shows that TANF and Tribal TANF are not separately distinguished. Training documents are missing Utility Guarantee/Direct Vendor programs, Safety Net Assistance, and some Federal Lifeline-qualifying programs, such as (Federal Public Housing Assistance, Bureau of Indian Affairs General Assistance and Head Start (if living on tribal lands) • NYSEG and RG&E tariffs are missing a provision to allow for automated customer enrollment through the bi-annual OTDA file-matching process. • NYSEG and RG&E tariffs are missing a provision for customer eligibility renewal for customers enrolled via qualifying programs. Tariffs are limited to HEAP and federal Lifeline. - Prior to each HEAP season, a customer who has not received a HEAP benefit in the preceding 12 months shall be removed from the Low-Income Program.

	- A customer currently enrolled in the Low-Income Program must provide documentation every 12 months to verify that they are still receiving benefits through the Federal Lifeline Program. • Low-Income Program Discount Statement tariffs are missing language for Tier placement of customers enrolled based on qualifying programs – apart from HEAP and the Federal Lifeline program. In addition, tariffs do not define requirement criteria for Tier 4 placement. Program management deficiencies: • Program Administration - The program does not have an overarching Program Manager. Nor does it have comprehensive, end-to-end, formally documented processes for program administration, quality, document storage/security, or record retention. Program responsibility is segmented with Back-office Credit & Collection representatives responsible for posting HEAP payments and manually processing self-certification applications. The Business Support & Solutions department is responsible for the OTDA file match. • Enrollment – Program practices (not documented) show that NYSEG and RG&E customers can be enrolled in the EAP in three ways (HEAP Pay: Receive a HEAP payment, Self-Certify, OTDA file match. • Removal – NYSEG’s and RG&E’s annual Low-Income program removal process for non-eligible customers is not developed. Avangrid initially indicated that customers are removed annually from the program as required (in alignment with tariff renewal requirements). Further inquiry found the companies had not removed customers from the program in compliance with tariff requirements. • Budget Billing – NYSEG and RG&E Tariffs state: “A customer enrolled in the Low- Income Program shall be billed in accordance with Rule 4.P.(1) Budget Billing of this Schedule.” The applicable Tariff does not state that a customer will be denied budget billing if they are in arrears at time of Low-Income Program enrollment. • NYSEG’s and RG&E’s Low Income Implementation plan states: “The Companies will also begin enrolling all eligible customers into Budget Billing upon approval of the Companies’ Low Income Implementation Plan.” NorthStar’s review of eight new customer enrollments (one example provided for each Tier by utility) shows only one of four NYSEG customers enrolled in budget billing (a Tier 4 customer) and one of four RG&E customers enrolled in budget billing (a Tier 2 customer) – indicating that new program customers are not consistently enrolled in budget billing. • The Tariff indicates that if a customer falls into arrears, they shall be removed from Budget Billing in accordance with Rule 4.P.(1)(b) of this Schedule. Once the customer resolves the arrears, they can be re-enrolled in Budget Billing. The Tariff does not state that a customer will be denied budget billing if they are in arrears at time of Low-Income Program enrollment. • Discount – Some discrepancies exist between the Low-Income Program Implementation plan and actual implementation. • Discussion within the implementation plan refers to “bill discounts.” Actual implementation shows that customers do not receive a discount on their bill, but rather a credit against the delivery charge – which impacts tax calculations differently than if typical bill discounts occurred.

	- The implementation plan states that the companies propose a fixed-discount approach consistent with that proposed in the Low-Income Order. Actual implementation shows that, for electric, the discount amount is not a fixed amount but varies depending on the number of days in a billing cycle. The discount amount is fixed for gas – it does not change if a customer is billed for more than one billing cycle. - Program Reporting – Program-reporting capabilities are limited. The companies are unable to provide program reporting of total discount amounts by tier level, which is typically a standard program report. Avangrid has stated that they do not track these data by Tier. Reporting of manually processed applications and tier level was also inaccurate.
Expected Implement: Timeline:	One year
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The costs of program documentation improvements and updating tariffs should be incurred as part of the normal course of business and thus are currently expected to be de minimis. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. - Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders. - Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. - Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	- Operation transparency - Data privacy - Physical, information and technology protection

Customer Operations
BCA IX-18, IX-20, IX-21 and IX-22

Recommendation Number(s)	Recommendation Text
IX-18	Provide supplemental data on the monthly CSPI report to DPS to include the number of bills not yet issued, number of bills issued late, number of days bills delayed by situation category (i.e. implausible, CDG Bill, etc.). In addition, each month indicates the number of accounts where consecutive bills were delayed including the number of consecutive months.
IX-20	Update CSPI process documentation to define how percentage of calls answered is calculated and retain numerator and denominator values in workpapers.
IX-21	Create formal override process to allow proper authority to approve adjustments made to CSPI metrics with appropriate supporting information on why it meets OCS definition and reason raw data reflected a different outcome.
IX-22	Ensure CSPI report model calculates all data in all cells, make sure quality checks are evident, review, document and certify all metric adjustments, and re-file CSPI metrics
Priority:	Medium
Background:	During NorthStar's review of Avangrid's CSPI (metrics) several deficiencies were identified. Refer to applicable findings discussed in the Customer Operations Chapter. For example: • Excel Model had unpopulated cell formulas and hard-coded results in cells that caused misidentification of appointment entries. And cell formula ranges are missing lines of data. The model is not robust. • Appointments reclassified from missed to kept lacked support that reclass met the OCS definition. • The number of adjusted bills does not account for bills that are delayed in issuance (i.e. CDG Bills or implausible reads for example) and therefore does not provide OCS with visibility into this issue. The number of bills with delayed issuance, or extent of delay is also not tracked. • The percent of calls answered is deemed to be 100%. The metric does not have a differentiated numerator and denominator. • The percent of calls answered within 30 seconds (by a representative) does not calculate correctly (SVL % (NY) PSC PI). • Estimated bills inclusion and exclusion criteria is not defined in procedure to ensure it aligns with OCS definition. • Customer satisfaction survey raw data results were not retained. • QA/QC procedures and internal controls are lacking. There is currently no independent review or calculations.
Expected Implement: Timeline:	One year

Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The costs for process improvements and updating documentation should be incurred as part of the normal course of business and thus are currently expected to be de minimis. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Customer Operations
BCA IX-23**

Recommendation Number(s)	Recommendation Text
IX-23	Develop narrative of observations/actions to accompany staffing reports.
Priority:	Medium
Background:	During NorthStar’s audit of customer operations staffing reports some areas of deficiency were identified with reports and communication of actionable steps to be taken given the information presented on the staffing report. The following observations were noted by NorthStar. • The Front Office Contact Staffing Report: Avangrid tracks NYSEG and RG&E beginning-of-year headcount, current snapshot headcount, and target headcount periodically throughout the year. As of October 2023, NYSEG’s headcount is 191 and RG&E headcount is 17, with a planned target headcount of 140 and 41, respectively. The years 2020-2022 show similar disparities, where RG&E is significantly under target and NYSEG is over. • Customer Service Headcount Report: This report provides a monthly snapshot of headcount for NYSEG and RG&E. There is no department information indicated. The report shows monthly staff number change and year-to-date change. The report does not provide department visibility of hiring or attrition. • External Call Center Report - Reported data starts for the week of May 7, 2023, and combines statistics for NYSEG & RG&E as New York performance. The report also provides separate data for each utility. For example, various aggregated inbound contact volume, average handling time, headcount and attrition by work week data points are included.²⁴ - The report appears to be a projected call volume by vendor handling area (Move-In / Move-Out , credit, general), with vendor headcount requirements to meet volume in each area. The results show the following: • 2021 – An annual average shortage of 89 resources (based on weekly values). • 2022 – An annual average shortage of 82 resources (based on weekly values). • 2023 – Improvement, with the first quarter showing an overage of 12, second quarter showing an overage of 33, third quarter showing a shortage of seven, and fourth quarter showing a shortage of 19. - The report exists as an Excel workbook with three tables that do not include vendor names or describe the purpose of the report. • The summary tab begins with data starting in January 2022, with Vendor SL actual updated through September 2022 only.

²⁴ DR 277 Attachment 3

	The monthly view is for 2023 data only and includes a visual that attempts to compare required headcount versus projected headcount – indicating over/under resources. However, the graph’s secondary X axis is set at a value of -150 (with incremental units of 50), which makes the comparative resource over / under differential difficult to identify.
Expected Implement: Timeline:	Immediate
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The costs of developing a narrative of observations/actions to accompany staffing reports should be incurred as part of the normal course of business and thus are currently expected to be de minimis. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. - Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders. - Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Customer Operations
BCA IX-24**

Recommendation Number(s)	Recommendation Text
IX-24	Continue to make improvements to scam-tracking database to allow for reporting of scam types, amounts, verified scams, completed actions, and customer contact for closeout.
Priority:	Medium
Background:	During NorthStar's audit of Customer Operations deficiencies in scam tracking and reporting capabilities. The tracking sheet provided for scams does not indicate whether the scam is verified and what action was taken. Avangrid has indicated that it will add these columns into the database by September 2024.
Expected Implement: Timeline:	Three Months
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The costs of updating the database should be incurred as part of the normal course of business and thus are currently expected to be de minimis. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. - Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. - Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Customer Operations
BCA IX-25 and IX-26**

Recommendation Number(s)	Recommendation Text
IX-25	Implement quality review and controls to ensure accuracy of Energy Efficiency data.
IX-26	Create implementation plan for all vendor recommendations to improve Energy Efficiency programs and data.
Priority:	Medium
Background:	During NorthStar's audit of energy efficiency, evaluation reports indicated that Avangrid does not have a robust system to ensure accuracy of energy-efficiency programming and energy savings reporting. Additionally, several vendor recommendations related to program impact and process evaluations remain unaddressed. • Avangrid did not provide any internal documentation or evidence of program administration handbooks, internal processes, procedures or tracking of energy-efficiency program data. The sole document produced was the guidance document provided by DPS. • NorthStar's review of third-party evaluation reports indicates that Avangrid's Energy Efficiency Programs do not have an established reporting system and use Excel workbooks to calculate energy savings. Energy-saving calculation adjustments have been necessary because of the following types of issues: - Data inputs. - Measure selection / classification. - TRM and EUL deviations. - Mischaracterization of participating properties. - Appliances not in use at time of recycling. • Third-party reports have provided several impact and process evaluation recommendations, many of which have not yet been implemented.
Expected Implement: Timeline:	One year
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The costs of energy efficiency program improvements should be incurred as part of the normal course of business and thus are currently expected to be de minimis. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
Increased Annual Costs:	

Cumulative Costs:	• Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Annual Savings:	
Cumulative Savings:	

**Physical and Cybersecurity
BCA X-1 and X-2**

Recommendation Number(s)	Recommendation Text
X-1	Provide a detailed report and in-person presentation to DPS on Avangrid’s prior and current plans to implement NIST CSF. This report must be provided at least one month prior to an in-person presentation. The report and presentation must include, at minimum, the following: 1.1. Detailed description of CSMP from original assessment in March 2020 to current date. 1.2. Review of each CSMP reassessment/re-evaluation performed and reason each reassessment/re-evaluation was required. 1.3. Discussion of CSMP governance model and all committees – including committee membership, responsibilities and work products produced. 1.4. Discussion of project management approach and implementation. Include all changes to project management since inception to current date. 1.5. Past and current CSMP procurement plans and contracting for all vendors, equipment and materials. 1.6. Scope changes to CSMP from inception to current date, with justifications for each scope change. Include information on all scope changes currently planned. Discuss scope risks and mitigation strategies. 1.7. CSMP resource management approach, staffing plans and actuals (internal and external) from inception to current date – with verifiable justifications for changes to staffing plans. Include discussion of program attrition issues and attrition rates since inception (for both internal and external resources). Include discussion of Avangrid’s staffing plans going forward to complete project. Include resourcing risks and mitigation strategies. 1.8. CSMP schedule-management approach, schedule plans, milestones and actuals from inception to current date – with verifiable justification for all modifications. Include detailed discussion of CSMP schedule and milestones going forward, plus schedule risks and mitigation strategies. 1.9. CSMP cost management approach, budgets and actuals from inception to current date, with verifiable justification for all changes. Include discussion of workstream budget plans, controls, budget risks and mitigation strategies. 1.10. CSMP performance from inception to current date. Provide program metrics and examples of all forms of management reporting. 1.11. Discussion of business impacts for delays in implementing CSMP, with details regarding all vulnerabilities. 1.12. Discussion of change-management approach, plans and efforts to date. 1.13. Scope and approach for prior and future maturity assessments of Avangrid’s NIST CSF programs. Provide DPS with prior final reports provided by vendors (no executive or management summaries) describing maturity study results. Include name of vendor that performed assessments, signed contracts, copies of all vendor-provided proposals, and Avangrid Procurement group’s assessments of vendors providing proposals to perform maturity assessments. 1.14. Detailed account of funding provided for these activities within rates and how those funds have been used for the past five years. Discussion should also address how Avangrid plans to use funding for the next five years.

	1.15. Current and future efforts to protect Avangrid IT and OT environments until NIST CSF is in place and functioning as intended.
X-2	Formalize CSMP expectations and planned outcomes with DPS. Provide testimony in future NYSEG and RG&E rate cases regarding CSMP expectations. Furthermore, provide DPS with semi-annual Avangrid CSMP reports going forward. At minimum, these reports should include metrics for scope, cost, schedule and resource management, plus earned value. Provide DPS with detailed variance reporting, with verifiable justification for all variances. Notify DPS of all Avangrid NIST CSF maturity assessments in terms of timing, scope, cost and vendor selection. Provide all signed Avangrid contracts, procurement assessments and full study results going forward. Meet with DPS to finalize CSMP expectations, outcomes and all reporting requirements.
Priority:	High
Background:	Avangrid's cybersecurity program faces significant challenges in achieving a NIST Cybersecurity Framework (CSF) Tier 3.0-plus maturity level, despite increasing investments and continuous efforts since 2020. A third-party assessment highlighted that Avangrid's IT and OT environments lag behind industry averages in cybersecurity maturity, with a recent NIST CSF maturity OT score of 2.1. Originally targeted for 2023, the goal to reach Tier 3.0 for Avangrid's OT environment has been delayed multiple times and is now projected for 2026-2027, with costs escalating from an initial \$17.1 million estimate to over \$80 million. Furthermore, recent penetration tests reveal critical gaps, such as the lack of an inventory of connected OT devices, delayed network segmentation, and absent "zero-trust" architecture, which collectively hinder Avangrid's cyber resilience. Additionally, Avangrid's data protection, disaster recovery, and third-party risk management capabilities are underdeveloped, exposing the company to potential cyber threats.
Expected Implement. Timeline:	Two to three months
Expected Improvement Timeline:	Immediately after presentation and continued reporting
Cost Analysis:	There will be one-time internal labor costs for report and presentation material for DPS. Estimated hours to assemble existing material, presentation, and report development are 3 to 4 employees for a total of 200 hours each. Estimated cost for internal resources is \$54/hour.²⁵ Simple calculation of the internal effort is at a cost of \$50,000 including meeting with DPS. Cost for ongoing project reporting to DPS should be incurred as a normal course of business. Based on the following, weighing the merits of various audit recommendations based on economic costs versus benefits could be misleading. - Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders. - Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-Time Costs	
Increased Annual Costs	
Cumulative Costs	
Annual Savings:	

²⁵ Based on NYSEG and RG&E internal labor costs reported in FERC Form 1.

Cumulative Savings	- Operation transparency - Data privacy - Information and technology protection

**Physical and Cybersecurity
BCA X-3, X-4, X-12 and X-15**

Recommendation Number(s)	Recommendation Text
X-3	Develop metrics to track effectiveness of remediation efforts associated with Vulnerability Assessments/Penetration Tests and similar audits/assessments. Include these metrics as part of responsible executives'/employees' incentive compensation plans.
X-4	Develop a detailed plan to implement all NERC CIP internal controls and provide to DPS. Also provide quarterly implementation progress updates. Perform internal audit of NERC CIP controls for high-risk standards, as well those for CIP 004, 007, 010, and 011 and provide results and workpapers to DPS.
X-12	Update Comprehensive Security Plan to meet all requirements in New York State's Critical Energy Generating and Transmission Facilities pursuant to Executive Law Section 713 and provide copy of Plan to DPS.
X-15	Revise position descriptions for all resources supporting the NERC CIP program to clearly detail NERC CIP roles and responsibilities.
Priority:	High
Background:	Avangrid lacks a systematic process to ensure remediation of issues identified in third-party network vulnerability assessments and penetration tests, raising concerns about the program's effectiveness. Key third-party assessments, as required by the NYSPSC and NERC CIP standards, have revealed recurring issues, such as weak password management, exposed sensitive documents, and unpatched vulnerabilities. Additionally, Avangrid has imposed restrictions on the scope of testing, limiting third parties' ability to conduct thorough assessments across all critical systems and networks. Record retention policies further complicate matters, as assessment records prior to 2020 are unavailable, limiting reviews between DPS directed management audits. Avangrid has recorded over 130 self-reports and audit findings for NERC CIP Potential Non-Compliance (PNC) issues across NYSEG and RG&E since 2017. These recurring PNCs span multiple standards, particularly CIP-004, CIP-007, and CIP-010, indicating persistent challenges in areas like access management, security patching, and configuration control. Although Avangrid has initiated an internal control program to address NERC CIP compliance, progress has been slow, with formal controls still under development and gaps in documentation and responsibility alignment. A 2020 benchmark study classified Avangrid's NERC compliance program as deficient, underscoring significant operational, financial, and reputational risks if these compliance and control weaknesses are not effectively addressed. Following the 2020 NERC CIP Best Practices Study, Avangrid outlined an implementation plan addressing executive engagement, compliance ownership, and organizational alignment. While the Avangrid implementation plan suggests that all except three recommendations were fully implemented, this is misleading. Furthermore, Avangrid has developed a roles and responsibilities chart for NERC CIP standards, detailing personnel involved in compliance oversight, but position descriptions generally lack specific NERC CIP-related roles and responsibilities. Avangrid's Comprehensive Security Plan does not meet all requirements of security measures in New York State's Critical Energy Generating and Transmission Facilities Prepared Pursuant to Executive Law Section 713

Expected Implement. Timeline:	4 to 6 months
Expected Improvement Timeline:	Immediately after effective implementation of recommendations.
Cost Analysis:	The cost for implementing these recommendations should be incurred as part of the normal course of business. Based on the following, weighing the merits of various audit recommendations based on economic costs versus benefits could be misleading. - Recommendations offered and implementation ordered in prior audits, yet Avangrid failed to implement. - Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders. - Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. • Operation transparency • Data privacy • Physical, Information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Physical and Cybersecurity
BCA X-5 and X-6**

Recommendation Number(s)	Recommendation Text
X-5	Provide DPS with detailed report and in-person presentation of Avangrid's business resilience program and current effort to revise the company's program, materials and reporting. The report must be provided to DPS at least one month in advance of in-person presentation. As part of this presentation, include a demonstration of the Business Continuity Management tool. Also provide DPS with a copy of all updated Business Impact Analysis, Business Continuity and Disaster Recovery Plans upon completion of these materials. The report and presentation should describe funding provided in rates for these activities and how funds have been used for the last five years.
X-6	Include DPS in all business resilience drills/exercises to observe activities. Provide DPS with post-drill/exercise reports, findings, recommendations and implementation plans.
Priority:	High
Background:	Avangrid's business resilience program currently has significant gaps and inconsistencies in key underlying documents - Business Impact Analysis (BIA), Business Continuity Plans (BCP), and Disaster Recovery Plans (DRP). Issues include conflicts among documents, incomplete information, and lack of alignment with business needs. Furthermore, current plans lack robust testing, clear documentation of key metrics like RTO and RPO, and do not consistently incorporate feedback from drills and exercises. There is an initiative to update and improve Avangrid's business resilience program. Additionally, communication protocols with federal and state officials during a crisis are fragmented, with no streamlined process for maintaining up-to-date contact information, which could impede effective response during incidents. Despite some structured testing in physical and cybersecurity areas, lessons learned from exercises are not fully documented or systematically integrated into Avangrid's resilience practices.
Expected Implement. Timeline:	2 to 3 months
Expected Improvement Timeline:	Immediately upon effective implementation of recommendations.
Cost Analysis:	There will be one-time costs for report and presentation development by 3-4 internal resources. Estimated hours to assemble existing material, presentation, and report development are 3 to 4 employees for a total of 200 hours each. Estimated cost for internal resources is approximately \$200/hour.²⁶ Simple calculation of total cost of effort is \$160,000 including presentation to DPS. Cost for including DPS in drills and exercises and reporting on these activities is considered de minimis. Based on the following, weighing the merits of various
Benefit Analysis:	
Other Costs and Benefits:	
Five-Year Payback Analysis:	

²⁶ Based on NYSEG and RG&E internal labor costs reported in FERC Form 1.

One-Time Costs:	audit recommendations based on economic costs versus benefits could be misleading. • Recommendations offered and implementation ordered in prior audits, yet Avangrid failed to implement. • Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

Physical and Cybersecurity BCA X-7

Recommendation Number	Recommendation Text
X-7	Develop thresholds for “bad swipes” at non-NERC CIP-covered NYSEG and RG&E facilities and apply appropriate remediation for repeat offenders.
Priority:	Medium
Background:	Avangrid's physical security measures are insufficient in addressing unauthorized access to NYSEG and RG&E facilities, as evidenced by multiple instances of invalid badge transactions. Despite Avangrid's assertion of no unauthorized access, NorthStar identified multiple cases where employees and contractors had repeated “bad swipes” at card readers across consecutive years, with over 100 incidents documented for some individuals annually. Although the Security Operations Center tracks and addresses invalid badge swipes for NERC CIP areas, similar corrective actions are unclear for non-CIP facilities, where most incidents occur. Additionally, a 2020 NPCC finding highlighted inadequate access authorization records for individuals with access to BES Cyber System Information, underscoring a need for stronger access control measures and record-keeping to enhance regulatory compliance and physical security.
Expected Implement. Timeline:	Three Months
Expected Improvement Timeline:	Immediately upon effective implementation and communication of the swipe thresholds.
Cost Analysis:	Costs to develop “bad swipe” thresholds and remediation actions for repeat offenders are incremental and should be part of normal business/physical security operations. When considering the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. – Operation transparency – Data privacy – Physical, information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Physical and Cybersecurity
BCA X-8 through X-11**

Recommendation Number(s)	Recommendation Text
X-8	Develop annual goals for all Avangrid phishing program metrics and report quarterly results to DPS.
X-9	Benchmark how other industries, not just energy/utilities, are adapting proactive cybersecurity programs to the evolving cyber-threat environment (e.g., integration of AI into social engineering attacks). Complete benchmark and provide detailed report to DPS.
X-10	Conduct an internal audit of all contractors using their own computers to access Avangrid networks/systems/applications. Develop the audit scope in collaboration with DPS. At minimum, this audit must assess impact to Avangrid's cyber-security posture. Provide audit results and associated work papers to DPS. Avangrid Internal Audit must make a presentation to DPS on audit results.
X-11	Clearly document and provide verifiable evidence to support adherence to implementation plans filed in Case 13-M-0178. Submit document and associated materials for DPS review.
Priority:	High
Background:	Avangrid has implemented a phishing program as part of its cybersecurity strategy, which includes employee training, endpoint security, and data loss prevention (DLP) measures to mitigate the risks associated with social engineering attacks. However, the program requires further improvement. Performance metrics such as report rate, click rate, and resiliency rate indicate progress but lack specific goals for some metrics. Phishing campaigns have been limited to easier difficulty levels, with no advanced campaigns to challenge and strengthen employee resilience against sophisticated attacks. Notably, repeat clickers—those who continue to fall for phishing attempts—remain an area of concern, highlighting a need for enhanced training to reduce susceptibility. Additionally, access by contractors, particularly those on non-Avangrid devices, introduces further security risks. Avangrid's current processes and mechanisms to support implementation plans filed in Case 13-M-0178 exhibit notable gaps, particularly in areas of business resilience, vulnerability assessment remediation, and personally identifiable information (PII) training.
Expected Implement. Timeline:	Benchmarking – 6 months Other recommendations – 4 months
Expected Improvement Timeline:	Immediately after effective implementation of the recommendations.
Cost Analysis:	Costs associated with the development of social engineering goals and reporting results to management and DPS are de minimis and incurred as part of the normal course of business. Cost of benchmarking social engineering practices would be expected to incur costs between \$250,000 and \$300,000. Internal audit of contractor computers with access to Avangrid's systems and networks is estimated to take 2-3 internal audit resources over 3-4 months on a
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	

One-Time Costs:	part time basis. Estimated hourly rate for internal resources is approximately \$54/hour. Estimated cost to complete the audit using internal labor is \$50,000 including presentation development and meeting with DPS. As a condition of continued regulated utility operation in the State of New York, Avangrid must comply with NYSPSC Orders such as 13-M-0178. Based on the following, weighing the merits of various audit recommendations based on economic costs versus benefits could be misleading. • Recommendations offered and implementation ordered in prior audits, yet Avangrid failed to implement. • Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Physical and Cybersecurity
BCA X-13 and X-14**

Recommendation Numbers	Recommendation Text
X-13	Immediately notify DPS of all physical and cyber-security staffing changes. Avangrid will meet with DPS to standardize and finalize reporting requirements as an activity in forthcoming audit recommendations implementation plan.
X-14	Perform background checks on all Avangrid physical and cyber-security employees who don't have a background check on file or have a background check that has not been updated within five years. Revise procedures to include requirement for updating physical and cyber-security personnel background checks on mutually agreeable timing with DPS and collective bargaining units (as required).
Priority:	High
Background:	Avangrid's hiring and onboarding process for security personnel, particularly in cybersecurity roles, lacks consistency and thoroughness. Background checks for these positions are not routinely updated, with some dating back to 2016, and critical hiring records, such as intake sessions, posting dates, and signed offer letters, are missing due to a system transition. Additionally, while Avangrid has a roles and responsibilities chart for NERC CIP compliance, position descriptions often fail to specify NERC CIP-related responsibilities and expectations.
Expected Implement. Timeline:	3 months
Expected Improvement Timeline:	Immediately upon effective implementation of the recommendations.
Cost Analysis:	The cost of immediately notifying DPS of all physical and cyber-security staffing changes is de minimis. The estimated cost of background checks for all physical and cyber security personnel and updates performed every five years should be incurred during the normal course of business. Based on the following, weighing the merits of various audit recommendations based on economic costs versus benefits could be misleading. • Recommendations offered and implementation ordered in prior audits, yet Avangrid failed to implement. • Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
One-Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Information Systems
BCA XI-1 through XI-3**

Recommendation Number(s)	Recommendation Text
XI-1	Develop formal documentation and standardized templates to support management decision-making for IT project selection and prioritization. Documentation and templates must be aligned with and support Investment Planning's prioritization processes.
XI-2	Complete all IT PDDs according to Avangrid's documented instructions. Ensure all PDDs include comprehensive documentation of project purpose/justification, detailed cost estimates, cost-benefit analysis, estimated efficiency (ROI, quantified performance/process improvements, etc.), and standardized risk analysis. Each project should clearly map to specific NYSEG and RG&E strategic objectives.
XI-3	Develop a standardized method to track and report progress toward and attained benefit realization for each IT project. Provide annual reports to DPS.
Priority:	High
Background:	Avangrid lacks a standardized, transparent process for IT project selection and prioritization, leading to an inconsistent, subjective approach that prioritizes Avangrid's broader corporate goals over the specific needs of subsidiaries NYSEG and RG&E. Avangrid stated that each business area has historically employed its own criteria for IT project prioritization, yet only provided a project prioritization approach and methodology from the Network Operations group. Network Operations approach and methodology does not align with Avangrid's overall Investment Planning framework. Furthermore, the IT project selection process largely excludes input from NYSEG and RG&E leadership, focusing instead on aligning with Avangrid's strategic objectives. Notably, Avangrid's "Strategy" category has guided \$123 million in IT spending over the past five years, yet there is no clear connection between these expenditures and the strategic objectives outlined in Avangrid's strategic plans or NYSEG/RG&E outcomes and objectives. Avangrid's IT PDDs lack sufficient detail and accuracy, impeding the ability to prioritize projects effectively based on merit. Key deficiencies include the absence of documented versions, inconsistent project justifications, and incomplete cost-benefit analyses. Many PDDs do not clearly classify projects by purpose or align with strategic objectives, while those labeled as "Efficiency" often lack quantifiable metrics on cost savings or operational improvements. Additionally, there is no standardized risk analysis, and Avangrid does not track the realized benefits of IT projects, making it difficult to validate claims of efficiency and/or effectiveness. Significant cost estimation variances between PDDs and IT Plan projections further highlight these documentation issues.
Expected Implement. Timeline:	3 to 4 months
Expected Improvement Timeline:	Immediately upon effective implementation of recommendations.
Cost Analysis:	Costs associated with the recommendations noted above should be incurred as part of normal business operations. Providing reports to DPS should be the same provided to Avangrid/NYSEG/RG&E management. Any added cost
Benefit Analysis:	

Other Costs and Benefits:	would be de minimis. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Five-Year Payback Analysis:	
One-Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

Information Systems
BCA XI-4, XI-5, XI-8, XI-9

Recommendation Number(s)	Recommendation Text
XI-4	Perform closer monitoring of AMI-installed endpoints that are not communicating and develop cost estimates based on anticipated solution category.
XI-5	Create a model to track and quantify AMI benefits and review with DPS.
XI-8	Adhere to formal project management practices, with proper monitoring and controls. This includes but is not limited to the following: 8.1 Use Earned Value Management to measure project performance. 8.2 Ensure project financial health is presented to stakeholders in a transparent manner and not subject to interpretation. Include workstream by budget. 8.3 Ensure all work efforts, including work areas not started, are communicated to stakeholders with cost estimates and that work is reflected in project schedule. 8.4 Include system performance by deployment region on stakeholder reports. 8.5 Perform quality reviews to ensure that invoices and SAP amounts match – and that transactions are for AMI Project, within scope, and match contract-pricing schedule. 8.6 Implement controls for contract-value monitoring and ensure products are not able to be ordered unless contracted for. 8.7 Maintain risk register with impact analysis. 8.8 Develop SAP reporting for increased visibility into internal and external costs.
XI-9	Formally disclose AMI AFUDC and all other AMI expenses as well as all other AMI plan deviations not captured in prior Rate Case testimony / workpapers to the DPS.
Priority:	Medium
Background:	During NorthStar’s audit of Information Systems, AMI issues related to endpoint performance monitoring, benefit tracking model, program management, and deviations from AMI rate case testimony were found. • Avangrid’s System Performance reports related to NYSEG and RG&E AMI Project deployment lack sufficient information to conclude that overall system performance consistently meets specified performance criteria within each utility’s service area. • Avangrid has not developed a mechanism to track and realize AMI Project benefits for NYSEG and RG&E. • Avangrid’s delivery of the AMI Project for NYSEG and RG&E lacks strong project management processes. Challenges include project cost control and reporting, risk management and analysis, and project performance.

	- Avangrid's cost control for the NYSEG and RG&E AMI Project has not been effective. - Avangrid is managing the AMI Project to a total project cost. Exhibit XI-13 (audit report) provides the AMI Project budget compared to estimated project completion costs. The exhibit shows large variances in some cost categories, yet the project is estimated to be overspent by \$12.5M. Avangrid shows that recovery of the \$12.5M is dependent on anticipated vendor credits to be issued to offset costs. - Avangrid distributed contingency funds to workstream budgets without justification. Contingency should only be used to offset costs associated with specific project risks identified during ongoing project risk analysis (i.e., "known unknowns") or costs associated with issues determined to be beyond management control (i.e., "unknown unknowns"). - The AMI Project's project risk register is not comprehensive or useful and lacks any analytical relationship to budgeted \$34M in contingency funds. - NorthStar's invoice testing comparison to SAP project reporting extract found the following issues with transaction matching: - Vendor invoice PO number and amount could not be found in SAP extract. - Vendor invoice could not be matched on amount. - Some invoiced work is not included in AMI Project scope - NorthStar reviewed a vendor contract for supply of AMI meters, modules and collectors. The review indicates deficiencies in contract monitoring, change-order controls, and invoice verification - Avangrid did not budget for AFUDC. The Cost/Benefit Analysis filed in Case 19-E-0378, et al. did not include AFUDC funds. - The technology for backhaul services was changed deviating from Rate Case Testimony. Further deviations included RFPs that were not released for Network Canopy, AMI Network Solution, and Network Troubleshooting.
Expected Implement: Timeline:	Six months
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The costs of improvements and disclosures related to the NYSEG and RG&E AMI Project should be incurred as part of the normal course of business and thus are currently expected to be de minimis. Based on the following, weighing the merits
Benefit Analysis:	

Other Costs and Benefits:	of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Five Year Payback Analysis:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Information Systems
BCA XI-6, XI-12, XI-13**

Recommendation Number(s)	Recommendation Text
XI-6	Adhere to procurement policies. Require a formal justification document to be completed and included with all single-source and sole-source contracts
XI-12	Ensure vendor costs are directly charged for work performed on behalf of specific utilities. Where costs cannot be directly charged, clearly document planned allocation methodology and reasons for adjustments
XI-13	Ensure that Budget Transfer forms include the name of approver and approval date fields
Priority:	Medium
Background:	During NorthStar's audit of Information System projects issues related to procurement and cost allocations were found. • Single-source contracts lacked formal documented justification. - Avangrid's Finances and Resources document states that certain criteria need to be met for single sourcing. The document notes that the lack of time is not a justifiable reason for single sourcing. The use of a single source should be compelling, and the justification should be impartial and obvious. - A single-source award was given to a firm to manage the AMI communications network deployment because the contracted individual currently at the firm was a former employee of an Avangrid affiliate. This employee led a network-installation effort in 2010 and 2011 at the affiliate. - Avangrid has stated that other vendors had existing framework agreements in place as a rationale for single-source procurement. • A review of five selected IT projects found no clear reasons for use of cost allocations. In addition, only one project had a referenced cost-allocation methodology (Massachusetts formula). Otherwise, project documentation shows no established rational for project allocations percentages amongst Avangrid utilities. • Equipment costs for ASC and AMC employees are allocated to NYSEG and RG&E without justification. • Budget Transfer forms do not include the name of approver and approval date.
Expected Implement: Timeline:	Three months
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The costs of improvements and disclosure should be incurred as part of the normal course of business and thus are currently expected to be de minimis. Based on the
Benefit Analysis:	

Other Costs and Benefits:	following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Five Year Payback Analysis:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Information Systems
BCA XI-7**

Recommendation Number(s)	Recommendation Text
XI-7	Engage a third-party to perform an independent and thorough study of Avangrid's IT project delivery practices. Incorporate recommendations into IT project management policies and procedures. Provide a full copy of the study results and revised policies and procedures to DPS.
Priority:	High
Background:	During NorthStar's audit of Information Systems it was noted that there has not been a review of Avangrid's IT project delivery practices.²⁷ Avangrid's IT budget from 2018 to 2023 was \$338.5 million, not including the AMI project. • Avangrid does not have a standardized method for IT project selection and prioritization. • Avangrid's information systems are challenged to effectively support core utility functions for NYSEG and RG&E.
Expected Implement Timeline:	6 months
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	Assuming an independent consulting firm with requisite expertise is retained, NorthStar estimates that this could cost \$750,000 to \$1,200,000 depending on scope.
Cost Analysis:	An independent, third-party assessment of Avangrid's IT project delivery practices would identify inefficiencies, misalignments, and risks to NYSEG and RG&E. Furthermore, such an assessment would ensure that IT investments support NYSEG and RG&E business goals, regulatory compliance, and customer needs. The findings and recommendations from such an assessment would enable Avangrid to improve its IT project governance and management, execution efficiency, and strategic alignment, ultimately leading to better operational outcomes. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	
Benefit Analysis:	

²⁷ DR 1167

Information Systems BCAs XI-10 and XI-11

Recommendation Number(s)	Recommendation Text
XI-10	Complete CIS assessment and roadmap. Provide assessment, roadmap and workpapers as part of a detailed presentation for DPS.
XI-11	Perform an annual comprehensive assessment to determine what routine manual work is completed outside of CIS and determine cost to business. Perform cost-benefit analysis for CIS change.
Priority:	High
Background:	A Customer Information System (CIS) is one of the key, foundational platforms essential to the execution of critical utility services. The CIS is central to supporting processes such as metering, billing, credit and collections, services orders and revenue reporting. A utility's CIS is its primary repository of data that are leveraged by many other customer-enabling technologies and programs, plus operational systems. A CIS must be properly maintained and upgraded to enable seamless integration with other existing critical systems, plus those proposed to improve future customer experience. An application roadmap is a strategic tool that outlines evolution of a software platform within an organization over a specified timeframe. A well-defined roadmap would demonstrate how CIS development is aligned with NYSEG and RG&E business objectives; provide a clear view of upcoming projects to plan resources; identify potential interdependency risk, security issues, and integration challenges; and support management decision-making and stakeholder communication. During the audit, NorthStar found that Avangrid does not have an application roadmap to plan current and future CIS needs. Avangrid cannot demonstrate a clear plan for CIS technology development or informed decision-making about resource allocation, project prioritization, or alignment of CIS development with NYSEG and RG&E business objectives.
Expected Implement: Timeline:	6 months or less if not completed in Q4 2024 as stated by the Company
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	Formation of a CIS application roadmap has been contemplated by the Company, however, experiences delays. The latest due date was Q4 2024. The cost of annual assessments performed by internal resources is approximately \$80k to \$160k using a rate of \$200/hour fully loaded cost rate.
Cost Analysis:	Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. - Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders. - Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
Increased Annual Costs:	

Cumulative Costs:	• Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Annual Savings:	
Cumulative Savings:	
Benefit Analysis:	

Information Systems
BCA XI-14

Recommendation Number(s)	Recommendation Text
XI-14	Initiate an independent review with DPS oversight of AMI and other IT projects to quantify the cost of unreasonable management.
Priority:	High
Background:	During NorthStar's audit of Information System Projects, deficiencies with project management, procurement, communication to DPS on project status and documentation of cost allocation methodologies were found. For example: • Avangrid did not consistently issue Requests for Proposals (RFP) to obtain competitive bids for AMI products and services. A competitive procurement process is critical for cost control and the development of a credible cost-benefit analysis. • Single-source contracts were issued for the AMI project. These contracts lack formal, documented justification. • Avangrid's delivery of the AMI Project for NYSEG and RG&E lacks strong project management processes. Challenges include project cost control and reporting, risk management and analysis, and project performance. • The AMI project's financial reporting process is manual and dependent on SAP transactions correctly entered into the system and assigned to appropriate WBS#. There are insufficient quality checks to ensure that data are accurate and that all costs are accounted for. • Avangrid's allocation of IT project costs to NYSEG and RG&E lacks transparency. Information provided prohibits determination of how NYSEG's and RG&E's allocated costs are commensurate with project benefits.
Expected Implement: Timeline:	One Year
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	Assuming an independent consulting firm with requisite expertise is retained, NorthStar estimates that this could cost \$750,000 to \$1,400,000 depending on scope.
Cost Analysis:	Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
	- Operation transparency - Data privacy - Physical, information and technology protection

Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	
Benefit Analysis:	

**Procurement
BCA XII-1**

Recommendation Number(s)	Recommendation Text
XII-1	Redefine competitive procurement of goods and services versus transparency using accepted industrial terminology and include this in policies and procedures documents.
Priority:	Medium
Background:	Avangrid’s Purchasing, Insurance and General Services organization is structured to support AMC regional operations, not individual subsidiary utilities such as NYSEG and RG&E. There is no NYSEG or RG&E procurement function. Avangrid’s procurement function, evaluation and selection serve the combined benefit of Avangrid Networks, Avangrid Management Company, and Renewables, Inc. and do not optimize vendor selection for each subsidiary. Costs of materials and services, administrative charges and performance results are not directly applicable or meaningful to the New York utilities because they are aggregated and then allocated among the eight subsidiary utilities. Avangrid’s policies and procedures combine the use of bid tendering, competitive purchasing and transparency: - Avangrid Purchasing presents “transparency” as if it was synonymous with competitive procurement – which it is not. - The Procurement Governance Model Transparency requirement notes that three valid offers in sealed bids are required.²⁸ - “Avangrid’s Purchasing Risk Policy and Avangrid’s Purchasing Procedure provide detail on the company’s policies and procedures for competitive procurement of goods and services...”²⁹ - Avangrid states that a competitive tender is where at least three technically valid offers have been received.³⁰ However, a “tender” is a formal document/process that is used by organizations to invite suppliers to provide goods or services. It’s an invitation to submit bids, outlining how they can fulfil the required specifications, at a specified price or rate.³¹ It is not the result of a competitive evaluation of bids. - Avangrid stated that 85 percent of tender processes were considered competitive over the last three years (2021 – 2023) – yet without a formal definition of competitive procurement or supporting data.³² “There is reference throughout the Purchasing Procedures regarding competitive Procurement but it is not specifically defined.”³³
Improvements:	Regulators and NYSEG/RG&E ratepayers should know that Avangrid is utilizing the most cost-effective means to procure products and services. Avangrid’s procurement processes and results should be transparent.

²⁸ DR 26

²⁹ DR 592

³⁰ DR 695 and Supplement 1

³¹ [What Is a Tender in Procurement? – Tendium](#)

³² DR 695 Supplement 1

³³ DR 592

	The level of competitive procurement for Avangrid utility clients such as NYSEG and RG&E should be formally defined, reported, and supported.
Expected Implement. Timeline:	Six months
Expected Improvement Timeline:	Upon implementation
Cost Analysis:	Defining competitive procurement of goods and services versus Avangrid’s use of the term transparency, using accepted industrial terminology and including this in policies and procedures documents should be a straightforward update of Avangrid Procurement policies and procedures. In that regard: Labor costs are estimated at 40 hours x \$200/hour (fully loaded) = \$8,000 Accurate estimates of costs and benefits cannot be readily quantified for improved procurement practices and processes, and levels of procurement attributable to NYSEG and RG&E because “competition” is not formally defined and procurement charges to New York utilities are allocated based on SLA cost drivers. Nevertheless, the achievable savings from increased competitive procurement has been demonstrated to be 5 to 10 percent of spending amounts.
Benefit Analysis:	
Other Costs and Benefits:	
Five-Year Payback:	
One-Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Procurement
BCA XII-2 and XII-3**

Recommendation Number(s)	Recommendation Text
XII-2	Develop comprehensive performance metrics for the purchasing function. Formally define how each performance metric will be calculated and the data source for each.
XII-3	Develop a comprehensive, semi-annual report on the purchasing performance directly applicable to NYSEG and to RG&E supported by verifiable data. Ensure reports and supporting data are readily available and produced for the next management audit.
Priority:	Medium
Background:	Avangrid’s procedural activities do not, in and of themselves, result in competitive procurement • Avangrid stated: “Avangrid’s Purchasing Risk Policy and Avangrid’s Purchasing Procedure provide detail on the company’s policies and procedures for competitive procurement of goods and services including, preparing for a tender, selecting the suppliers to be invited to the tender, receipt of the bids, the technical evaluation of the offers, proposing the award, financial risk review, sustainability review, etc.”³⁴ • All goods and services procurement greater than \$10,000 is considered “competitive”, and direct purchases issued by the “Business” (Avangrid Networks operating utilities) are not considered competitive.³⁵ NYSEG and RG&E do not use a tender process; there is no Purchasing involvement. Avangrid Purchasing reported analysis of split purchase orders prior to 2023 and now uses an SAP system function to identify suspected split purchase orders for additional authorization.³⁶ • Avangrid’s Purchasing monitors KPIs for savings, transparency, single source, time periods and supplier participation. The Purchasing procedure does not apply to corporate credit card transactions, and no procurement card program exists.³⁷ • Avangrid’s economic analysis and selection of vendors is predominantly based on the combined impact on Avangrid and not on the individual impact on utility subsidiaries such as NYSEG and RG&E.³⁸ Costs of materials and services, administrative charges and performance results are not directly applicable or meaningful to the New York utilities because they are aggregated and then allocated among the eight subsidiary utilities. • Avangrid’s summary of procurement activity notes only Networks, Renewables and Corporate businesses as clients.³⁹ Materials and

³⁴ DR 592

³⁵ DR 26

³⁶ DR 26, 739 and 740

³⁷ DR 232 and 432

³⁸ NorthStar analysis of DRs 920 through 939

³⁹ DR 232 and Attachments

	services procurement that directly and specifically supports Avangrid's New York utilities is not reported. Avangrid charges to NYSEG and RG&E for Purchasing Services are allocations. Avangrid states that its SLA cost driver is the "amount of purchasing requests per each Client Company (value of open POS)."⁴⁰ However, Avangrid is the author of its own purchasing requests.
Improvements:	Development and reporting procurement performance metrics that are directly applicable to NYSEG and RG&E are necessary and important.
Expected Implement. Timeline:	Six months.
Expected Improvement Timeline:	Upon Implementation.
Cost Analysis:	Defining and reporting NYSEG and RG&E procurement performance should be a straightforward update of Avangrid Procurement policies, procedures and an enhancement of existing metrics reported. In that regard: Labor costs are estimated at 100 hours x \$200/hour (fully loaded) = \$20,000 Accurate estimates of costs and benefits cannot be readily quantified for improved procurement practices and processes, and levels of procurement attributable to NYSEG and RG&E because "competition" is not formally defined and procurement charges to New York utilities are allocated based on SLA cost drivers. Nevertheless, the achievable savings from increased competitive procurement has been demonstrated to be 5 to 10 percent of spending amounts.
Benefit Analysis:	
Other Costs and Benefits:	
Five-Year Payback:	
One-Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

⁴⁰ DR 593 Attachments 1 – 9, Appendix A

**Procurement
BCA XII-4 through XII-7**

Recommendation Number(s)	Recommendation Text
XII-4	Formally define how Supplier Diversity identification and certification will be conducted for NYSEG and for RG&E.
XII-5	Formally define how Supplier Diversity procurement will be conducted, how fair and equitable competition among suppliers will be ensured and include this in policies and procedures documents.
XII-6	Develop comprehensive performance metrics for Supplier Diversity procurement applicable to NYSEG and to RG&E.
XII-7	Develop a comprehensive, semi-annual report on Supplier Diversity purchasing performance directly applicable to NYSEG and to RG&E supported by verifiable data. Ensure reports and supporting data readily available and produced for the next management audit.
Priority:	Medium
Background:	Supplier diversity performance results are not directly applicable or meaningful to the New York utilities because they are aggregated Avangrid data. Supplier diversity data do not represent the product of a purchasing objective, but rather the retrospective analysis of vendor activity. - Avangrid does not certify diverse suppliers.⁴¹ Avangrid relies on third-party certifications and data management systems and has stated that Avangrid verifies certifications with multiple non-government organizations, along with state and local government agencies that offer diverse business certifications. - Avangrid conducts “data scrubs” by submitting a supplier list to its third-party data management system to review and validate suppliers.⁴² Avangrid has stated that it verifies diverse suppliers’ certifications with multiple non-government organizations: “‘The organizations we partner with for data validations are member-based organizations and we are not allowed to share the reports we receive back from the “data scrubs”.’”⁴³ “‘Our diverse supplier data validation process has continued to expand since the program started. The data scrub is the process when we upload Avangrid’s supplier list to a certain organization’s system, and they review the suppliers and send us back the file identifying which suppliers are certified by the organization.” - Supplier Diversity spend does not necessarily reflect New York suppliers or benefit New York utility ratepayers. Avangrid’s top 10 suppliers, representing 66 percent of total diversity spend, were presented in the audit orientation meeting.⁴⁴

⁴¹ DR 465

⁴² DR 465 and 589

⁴³ DR 465 and 1173

⁴⁴ DR 26

	- NorthStar discovered discrepancies and deficiencies in Avangrid's presentation materials.⁴⁵ - Reported suppliers whose status had changed or expired. - Diverse suppliers that were omitted from the materials. - Suppliers who conducted no business with Avangrid's regulated utilities.
Improvements:	Meaningful information on supplier diversity procurement performance depends on transparency of utility processes, controls and results that are applicable to New York utilities, ratepayers and regulators. Information applicable to NYSEG's and RG&E's Supplier Diversity Program (SDP) as conducted by Avangrid will help the New York utilities achieve the goals of the program.
Expected Implement. Timeline:	One year.
Expected Improvement Timeline:	Upon implementation.
Cost Analysis:	Defining and reporting NYSEG and RG&E diverse supplier procurement performance should be a straightforward update of Avangrid Procurement policies, procedures and an enhancement of existing metrics reported. In that regard: Labor costs are estimated at 100 hours x \$200/hour (fully loaded) = \$20,000 Compliance with CASE 22-M-0314 - Proceeding to Review Utilities' Diversity, Equity, and Inclusion Practices. More specifically: - The proceeding is instituted to examine the diversity, equity, and inclusion efforts of electric, gas, and water utilities with 100 or more employees in their New York operations. - Utilities included: Rochester Gas and Electric Corporation; New York State Electric & Gas Corporation are directed to develop and file diversity, equity, and inclusion plans consistent with the discussion in this Order. - DPS Staff is directed to host a working group to facilitate sharing information and best practices between the utilities consistent with the discussion in this Order. - DPS Staff is directed to issue a Request for Proposals and select an independent third-party consultant to assess utility diversity, equity, and inclusion plans and assist the working group discussions consistent with the discussion in this Order. - In the Secretary's sole discretion, the deadlines set forth in this Order may be extended. Any request for an extension must be in writing, must include a justification for the extension, and must be filed at least three days prior to the affected deadline
Benefit Analysis:	
Other Costs and Benefits:	
Five-Year Payback:	
One-Time Costs:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

⁴⁵ DRs 26, 462, 465, DRs 920 – 939, 591 and NorthStar analysis

Performance Management
BCA XIII-2, XIII-5, XIII-6, and XIII-8 through XIII-13

Recommendation Number(s)	Recommendation Text
XIII-2	Create individual incentive plans for NYSEG and RG&E.
XIII-5	Formally document the annual goal-setting process.
XIII-6	Ensure that annual goals presented to CNC include clear targets and measurement criteria. Clearly indicate when a goal represents a customer-benefiting measure.
XIII-8	Ensure that CNC meeting minutes are reflective of pre-meeting distributed materials. All such materials should be included in the meeting minute package for official records.
XIII-9	Clarify the CNC role and Management Committee roles for APA plan administration within the formal APA plan documents.
XIII-10	Include date and version for all incentive plans, along with including the plan administrator's name.
XIII-11	Develop individual goals and career paths for union employees.
XIII-12	Pursue additional training and oversight to ensure individual goals are appropriately structured and focused on customer benefits.
XIII-13	Discontinue discretionary assessments in incentive compensation plans to ensure that all employees are evaluated based on consistent and measurable performance metrics.
Priority:	High
Background:	During NorthStar's audit of Performance Management issues were found with the annual goal setting process, APA/EVP Plans, plan administration, presentation of goals, pre-meeting material distribution, and incentive plan components. Examples of issues are highlighted as follows: Annual goal setting: • NYSEG and RG&E do not have an annual goal-setting process. Annual goals are established at the Avangrid, Inc. and Avangrid Networks level. Incentive Plans: • NYSEG and RG&E do not have utility-level incentive plans. Performance is measured at the Avangrid, Inc and Avangrid Networks levels (aggregated). This could conceal inferior performance at any individual utility and impact urgency to improve. • Measurement criteria are not well defined and goals are presented as +/- from budget without a budget number stated. Definitions are not well defined upfront and subject to change / substitution. • Incentive plans are not dated or version controlled. Retroactive changes made to plans are not captured on plan documents.

	• The APA plan administrator is not specifically defined. • Plans that include discretionary assessment are unusual within the utility industry, where executive compensation typically relies on clear, objective performance metrics. This deviation leads to concerns about transparency, fairness, and goal alignment, which are critical in maintaining stakeholder trust and regulatory compliance. • NorthStar’s experience found executive compensation with discretionary assessments is not recommended and atypical within the utility industry. Discretionary assessments bring forth an array of issues such as lack of transparency, uncertainty, potential for misalignment, regulatory and public scrutiny, and inconsistent application. CNC: • Approval of incentive-plan changes made in 2018 to include a “200% Incentive Factor” is not evident in meeting minutes or CNC presentation materials. • Meeting minutes provided to NorthStar were highly redacted/restricted and verbiage remaining was non-substantive. Materials referenced as “being previously distributed” prior to the meeting did not specify a date or name of document. Individual Goal Setting: • In its most recent rate case, Avangrid portrayed individual performance goals for each utility as customer-benefitting measures, rather than goals that benefit only shareholders. However, this concept is not conveyed within employee guidance documents for setting individual (SMART) performance goals. Consequently, individual goals were found to include financial components and goals for supporting other Avangrid entities, such as UI, CMP. • Union employees do not have individual (SMART) goals. • Some goals failed to meet SMART criteria.
Expected Implement: Timeline:	Six Months
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	The costs of program improvements should be incurred as part of the normal course of business and thus are currently expected to be de minimis. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations to provide operational improvements that were addressed and included in prior rate cases and relevant Commission Orders.
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	

Increased Annual Costs:	• Recommendations that call for adherence to existing utility policies and procedures and therefore are contained in existing rates. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	

**Performance Management
BCA XIII-4 AND XIII-7**

Recommendation Number(s)	Recommendation Text
XIII-4	To the extent that New York ratepayers have contributed to annual incentive payments to Avangrid employees (i.e. ASC, AMC, NYSEG and RG&E), NYSEG and RG&E should adjust incentive compensation for performance metrics not related to NYSEG and RG&E and where NYSEG and RG&E performance did not meet targets.
XIII-7	Expand third-party auditor review to include Avangrid Networks and the NYSEG and RG&E President and CEO individual metrics.
Priority:	High
Background:	During NorthStar’s audit of Performance Management, issues related to New York ratepayers contributing to incentive payments to ASC and AMC employees as well as New York Ratepayers contributing to incentive compensation for performance outside the service area were found. In addition, third-party audit of annual results is limited to Avangrid Inc. metrics and does not include Avangrid Networks and the NYSEG and RGE President and CEO individual goals. • Rate Case testimony did not articulate recovery needs for ASC and AMC employees – nor did it provide a compensation study for these employees • The Rate Case Testimony did not clarify that goal setting or achievement criteria for annual objectives was based on combined Avangrid performance. This method of incentivizing leads to the following situations: - A Short-Term Incentive Plan payout occurs without requiring NYSEG or RG&E to meet goals as a standalone utility. - Avangrid Renewables’ goals incorporated within Avangrid, Inc. metrics, and metrics that did not benefit New York customers • Utility performance is masked. Certain performance metrics are only reported at the Avangrid level. Apart from financials, this includes the following: - Outage alerts - TRIR for employees and contractors - Sustainable providers • Avangrid did not make any adjustment to the amounts allocated from AMC /ASC to NYSEG and RGE related to NYSEG and RGE achievement (or lack of achievement) of targets. • Individual goals of the NYSEG and RG&E president/CEO include New York region performance goals is based on aggregated performance of NYSEG and RG&E. • Third-Party auditor annual metric review is limited to Avangrid Inc. metrics.

Expected Implement: Timeline:	Six months
Expected Improvement Timeline:	Immediate upon implementation
Cost Analysis:	An analysis to determine the extent that New York ratepayers have contributed to annual incentive payment to Avangrid employees (i.e. ASC, AMC, NYSEG and RG&E). A determination of payment for performance metrics not related to NYSEG and RG&E and where NYSEG and RG&E performance did not meet targets should be determined. Assuming an independent consulting firm with requisite expertise is retained, NorthStar estimates that this could cost \$250,000 to \$500,000 for three-year review aligning with rate case period. Expanding third-party auditor review to include Avangrid Networks and the NYSEG and RG&E President and CEO individual metrics is assumed to be an expansion of existing third-party scope of work that performs auditing of Avangrid Inc. annual metrics. NorthStar estimates an incremental cost of \$50,000 to \$100,000.
Cost Analysis:	The costs of program improvements should be incurred as part of the normal course of business and thus are currently expected to be de minimis. Based on the following, weighing the merits of various audit recommendations using traditional economic costs versus benefits could be misleading. • Recommendations to comply with legal and regulatory mandates that are fundamental conditions of utility service and expected within the context of normal business practice – baseline expectations. - Operation transparency - Data privacy - Physical, information and technology protection
Benefit Analysis:	
Other Costs and Benefits:	
Five Year Payback Analysis:	
Increased Annual Costs:	
Cumulative Costs:	
Annual Savings:	
Cumulative Savings:	
Benefit Analysis:	