BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

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Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of New York State Electric & Gas Corporation for Electric Service	Case 22-E- ____
Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of New York State Electric & Gas Corporation for Gas Service	Case 22-G- ____
Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Rochester Gas and Electric Corporation for Electric Service	Case 22-E- ____
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- ____

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DIRECT TESTIMONY OF NON-WIRES AND NON-PIPES ALTERNATIVES PANEL

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May 26, 2022

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DIRECT TESTIMONY OF NON-WIRES AND NON-PIPES ALTERNATIVES PANEL

I. INTRODUCTION

Q. Please state the names of the members on this Non-Wires and Non-Pipes Alternatives Panel (the "Panel").

A. We are Michael J. DeAngelo, Elizabeth K. Murphy, and Katherine L. Wright.

Q. Mr. DeAngelo, please state your title and business address.

A. I am the Program Manager – Non-Wires Alternatives ("NWA"). My business address is 18 Link Drive, Binghamton, New York 13903.

Q. Please summarize your work experience and educational background.

A. In my current role, I manage Avangrid Networks' NWA and Non-Pipes Alternatives ("NPA") efforts in New York, Maine, and Connecticut. I have over 14 years of experience in the power generation and electric and gas utility industries. I have a BS in Business Economics and Marketing and an MBA. My CV is set forth in Exhibit __ (NWA-NPA-1).

Q. Have you previously testified in other proceedings before the New York State Public Service Commission ("PSC" or the "Commission") or any other state or federal regulatory agency?

A. Yes. I previously testified before the Commission in the Companies' last rate proceedings, Cases 19-E-0378 et al. (the "2019 Rate Case"). I have also testified before the Maine Public Utilities Commission in multiple regulatory proceedings.

Q. Ms. Murphy, please state your title and business address.

A. I am the Supervisor – NWA. My business address is 100 Marsh Hill Road, Orange, Connecticut 06477.

Q. Please summarize your work experience and educational background.

A. In my current role, I manage Avangrid Networks' NWA and NPA programs in New York. I have over a decade of experience in the clean energy and electric and gas utility industries. I hold a BS in Economics from Rensselaer Polytechnic Institute and an MS in Resource Economics from the University of Connecticut. My CV is set forth in Exhibit __ (NWA-NPA-1).

Q. Have you previously testified in other proceedings before the Commission or any other state or federal regulatory agency?

A. No. However, I have represented Avangrid Networks in various technical meetings held by the Connecticut Department of Energy and Environmental Protection and the Connecticut Public Utilities Regulatory Authority in its Equitable Modern Grid proceeding (Docket No. 17-12-03RE03).

Q. Ms. Wright, please state your title and business address.

A. I am the Lead Analyst – NWA. My business address is 180 South Clinton Avenue, Rochester, New York 14604.

Q. Please summarize your work experience and educational background.

A. In my current role, I lead NWA and NPA project efforts in New York. I have over nine years of experience in the electric and gas utility industries. I have a BS in Business Administration from Ithaca College and an MBA from St. John Fisher College. My CV is set forth in Exhibit __ (NWA-NPA-1).

Q. Have you previously testified in other proceedings before the Commission or any other state or federal regulatory agency?

A. No.

II. OVERVIEW OF TESTIMONY

Q. Please provide an overview of the Panel's testimony.

A. As we look to transform our business model and support advancement towards a clean energy future, New York State Electric & Gas Corporation ("NYSEG") and Rochester Gas and Electric Corporation ("RG&E" and together with NYSEG, the "Companies") are making significant investments to drive innovative clean energy project adoption in support of the Climate Leadership and Community Protection Act ("CLCPA"). NWA and NPA programs are significant drivers of improved system resiliency and grid decarbonization and, ultimately, provide important pathways for achieving the greenhouse gas ("GHG") emissions reduction targets established by the CLCPA.

As further discussed in our testimony, the Companies seek to leverage their NWA and NPA programs to: 1) implement innovative solutions to improve system reliability; 2) provide cost-effective approaches on behalf of customers; 3) support advancement of New York's clean energy and climate goals, including the GHG emissions reduction targets set forth in the CLCPA; and 4) encourage local economic development.

Building off the Joint Proposal approved by the Commission in the 2019 Rate Case ("2020 Joint Proposal"), the Companies have worked closely with New York State Department of Public Service Staff ("Staff") to design a programmatic framework that enables efficient and effective identification and implementation of NWA and NPA solutions where appropriate. The programmatic framework developed with Staff reinforces the steps the Companies are taking to support a clean energy transformation that not only improves resiliency but is cost-effective for customers.

We also provide an overview of ongoing NWA and NPA projects and discuss plans for future project activity. Specifically, we:

1) Review the Stillwater NWA project, Java Substation Microgrid project, and Lansing NPA Portfolio in detail. These battery storage and NPA projects, each entailing an innovative solution to solving a critical system need, represent significant opportunities for NYSEG to implement its first NWA and NPA projects in New York. Furthermore, these projects will result in a host of other benefits, including increased resiliency, cost-savings, reduced carbon emissions, and opportunities to gain lessons learned that will inform future NWA and NPA efforts as the Companies seek to aggressively build out their program portfolios;
2) Seek approval of a cutting-edge NYSEG geothermal district energy system to be sited on a city block in Ithaca, New York. This pilot project is a significant opportunity to advance geothermal district energy system technology in NYSEG's service territory. The project will provide customers with a cost-effective clean energy heating and cooling solution and support advancement towards New York's clean energy and climate goals; and
3) Describe the additional resources necessary to support the scaling and advancement of the Companies' NWA and NPA efforts.

Q. Please elaborate on New York's clean energy and climate goals and the Companies' commitment to helping the State achieve these goals.

A. The CLCPA requires that 70% of statewide electric generation come from renewable energy systems by 2030, with a zero-emissions electric grid required by 2040. In addition, the CLCPA commits New York to reducing GHG emissions by 40% from 1990

levels by 2030 and 85% by 2050. Achieving these goals will require a dramatic shift towards innovative alternative approaches to solving traditional electric and natural gas system issues, such as NWA and NPA projects. The Companies are committed to building a portfolio of cost-effective and innovative NWA and NPA projects that will grow over time as new opportunities emerge to address traditional electric and natural gas system needs. Further discussion on the Companies' commitment to help achieve the State's clean energy and climate goals can be found in the direct testimony of the Companies' Policy Panel.

Q. How will the Companies' NWA programs support achievement of New York's clean energy and climate goals?

A. Electric grid decarbonization and strategic electrification efforts are resulting in increased electrical demand in certain areas of the grid, which is triggering a need for new electric infrastructure projects to support the projected load growth. Where suitable, NWAs (e.g., distributed generation, energy storage, energy efficiency, demand response) will be used to address these emerging system needs and play a key role in supporting the paradigm shift towards a clean energy future. NWA solutions are an important tool to help New York achieve the CLCPA clean energy mandates, particularly to the extent they may decrease the need to rely on fossil fuel generation and reduce the carbon intensity of the electric grid.

Q. How will the Companies' NPA programs help achieve New York's clean energy and climate goals?

A. Similar to NWA solutions, NPA solutions are intended to alleviate natural gas system constraints and reliability concerns while reducing reliance on fossil fuels, which

supports achievement of the CLCPA goals. Consistent with commitments made as part of the Companies' last rate case, the Companies have invested a significant amount of time developing an efficient and effective process for evaluating traditional natural gas infrastructure projects for applicability of NPA solutions. The Companies are striving to establish a portfolio of NPA projects offering diversity in terms of customer class (municipal, industrial, commercial, and residential), project size, solution technology type (e.g., heat pumps, demand response, energy efficiency), and location (communities designated as environmental justice or disadvantaged, areas with low to moderate income levels, geographical diversity, etc.). Not only does this growing portfolio demonstrate the Companies' commitment to pursuing innovative solutions to traditional system issues, but it will support New York's clean energy and climate goals by reducing fossil fuel dependence and mitigating GHG emissions through electrification and natural gas load reduction projects.

Q. Is the Commission currently considering the NPA framework in a generic proceeding?

A. Yes. The Panel acknowledges that in the Commission's Order Adopting Gas System Planning Process issued on May 12, 2022 in Cases 20-G-0131 et al. (the "Gas System Planning Order"), the Commission is considering, on a generic basis, an NPA framework within which to consider potential NPAs. The framework would have three components: 1) NPA suitability criteria; 2) an NPA cost recovery procedure; and 3) an NPA incentive mechanism. As directed by the Gas System Planning Order, the Companies will file with the Commission in that proceeding (either separately or as part of the joint utility group): 1) proposed NPA screening and suitability criteria; 2) a proposed NPA incentive mechanism; and 3) a proposed NPA cost recovery mechanism.

III. IDENTIFICATION AND SUMMARY OF EXHIBITS

Q. Is this Panel sponsoring any exhibits?

A. Yes. This Panel sponsors the following exhibits:

1) Exhibit __ (NWA-NPA-1) provides the CVs of the witnesses testifying on this Panel;
2) Exhibit __ (NWA-NPA-2) provides Appendix HH (Non-Wire Alternatives and Non-Pipe Alternatives) to the 2020 Joint Proposal;
3) Exhibit __ (NWA-NPA-3) provides the Non-Wires Alternative 2021 Fourth Quarter Report filed by NYSEG and RG&E on February 25, 2022;
4) Exhibit __ (NWA-NPA-4) provides the Non-Pipes Alternative 2021 Fourth Quarter Report filed by NYSEG and RG&E on February 25, 2022;
5) Exhibit __ (NWA-NPA-5) provides a New York Electric Capital Expenditure Projects/Programs Summary of the Stillwater NWA Project;
6) Exhibit __ (NWA-NPA-6) provides a New York Electric Capital Expenditure Projects/Programs Summary of the Java Substation Microgrid Project; and
7) Exhibit __ (NWA-NPA-7) provides a New York Gas Capital Expenditure Projects/Programs Summary for the Geothermal District Energy System Pilot Project.

IV. NON-WIRES ALTERNATIVES

A. Background on NWAs

Q. What are the Companies' approaches and objectives for NWA projects?

A. The Companies' approach to NWA projects involves reviewing traditional electric infrastructure improvements and determining whether there may be cost-effective and technically-feasible alternatives to those traditional infrastructure investments. The overall objectives for the Companies' NWA program are to build a portfolio of projects

which are cost-effective for customers, provide reliable alternatives to traditional capital investment projects, and provide a basis for the Companies to learn from and work cooperatively with other utilities and stakeholders. The Companies are committed to leveraging their NWA program to implement innovative solutions to improve system resiliency and reliability, provide cost savings to customers, support advancement towards New York's energy and climate goals, and encourage local economic development.

Q. Please describe the current process for selecting NWAs.

A. The Companies select NWAs using suitability criteria and the planning process that was first described in the Joint Utilities' May 2017 filing in Cases 14-M-0101 and 16-M-0411. The Companies' NWA process was further developed in the 2020 Joint Proposal. The Companies use the suitability criteria to determine which traditional wires solutions may be deferred or avoided via an NWA based on project type or system need, project timeline, and project cost. On an annual basis, the Companies apply the NWA suitability criteria to the full list of electric transmission-level and electric distribution-level projects included in the Companies' five-year Capital Investment Plan ("CIP"). This process enables proactive and comprehensive review and identification of NWA opportunities. Additionally, the Companies have established various checkpoints in the project approval process to ensure NWA solutions are fully contemplated as alternatives to defer or avoid the traditional capital project.

Q. Are the Companies proposing any modifications to their NWA suitability criteria?

A. No. These suitability criteria have proven effective in identifying potential NWA projects. As such, the Companies are not proposing any modifications to the NWA suitability criteria.

B. Current Projects

Q. Do the Companies currently have NWA projects underway?

A. The Companies are actively advancing two NWA projects which include the NYSEG Stillwater NWA project and the NYSEG Java Substation Microgrid project.

Q. Would the Panel please describe the NYSEG Stillwater NWA project?

A. Located in NYSEG's Mechanicville Division, the NYSEG Stillwater NWA project will address substation overload and low voltage power quality issues through a developer-installed and operated 1 megawatt ("MW")/2.9 MWh battery energy storage system located roughly 1.8 miles from the Stillwater substation on the 4.8 kV distribution circuit. With a Benefit Cost Analysis ("BCA") ratio of 1.37 calculated using the Societal Cost Test ("SCT"),[1] this project represents a positive opportunity for NYSEG customers. Operational benefits provided by the NYSEG Stillwater NWA project include the ability to keep the electrical load on the Stillwater substation's transformer bank below its nameplate rating and to minimize the possibility for transformer degradation and load curtailment. Additional details regarding this project, including the system need and

[1] Benefits and costs were calculated utilizing the Companies' Benefit Cost Analysis Handbook V3.0 filed contemporaneously with the Distributed System Implementation Plan ("DSIP") on June 30, 2020 in Case 16-M-0411.

traditional solution, can be found in Exhibit __ (NWA-NPA-3) and Exhibit __ (NWA-NPA-5).

Q. What is the current status of the NYSEG Stillwater NWA project?

A. NYSEG has been meeting regularly with the third-party developer to review interconnection details and the project agreement, which has been drafted and is pending execution. Contingent upon successful execution of the project agreement by both parties, NYSEG anticipates that the NYSEG Stillwater NWA project will be placed in service no later than May 31, 2023.

Q. Would the Panel please describe the NYSEG Java Substation Microgrid project?

A. Located in NYSEG's Lancaster Division, the NYSEG Java Substation Microgrid project is a 4 MW/35 MWh battery energy storage system designed to establish the redundancy necessary to address the potential risk of loss of the existing single incoming sub-transmission line and/or failure of the existing transformer bank at the Java substation. Installation of the Java Substation Microgrid project will defer portions of the traditional wires solution alternative. The solution is being designed to meet all Java substation customers' electric demand for up to approximately eight hours (until the contingency condition is repaired or a mobile substation is rolled out). NYSEG issued a Request for Proposals ("RFP") in 2016 to address the system need through an NWA, but the market failed to produce a viable solution. Consequently, NYSEG will own and operate the NWA asset and will capitalize all associated project costs. Please refer to Exhibit __ (NWA-NPA-3) and Exhibit __ (NWA-NPA-6) for additional information.

Q. What is the current status of the NYSEG Java Substation Microgrid project?

A. In the fourth quarter of 2021, NYSEG's vendor (selected through a competitive bid process) completed final drafts of the study report, completed the protection philosophy document for the project, and staked out the proposed design on the proposed land. Conceptual engineering was completed in early 2022 and NYSEG is planning to issue an equipment RFP in the second quarter of 2022.

Q. Please describe how the NYSEG Stillwater NWA project and the NYSEG Java Substation Microgrid project support the State's achievement of clean energy and climate goals.

A. The CLCPA codified the energy storage targets adopted by the Commission in its December 13, 2018, Order in Case 18-E-0130, requiring the procurement of 3,000 MW of energy storage in New York by 2030. These two projects further the State's goal of increasing the amount of energy storage on the electric grid. Additionally, NYSEG ownership and implementation of the NYSEG Java Substation Microgrid project presents opportunities for NYSEG to gain integration and operational experience to inform and support the development of battery storage across NYSEG's service territory.

C. Planned Projects

Q. Are the Companies pursuing other NWA opportunities?

A. Yes. The Companies are committed to building a robust and diverse portfolio of NWA projects that will grow over time as new opportunities emerge to address traditional electric system needs through cost-effective and innovative NWA solutions. Where suitable, the Companies will leverage NWAs to address emerging electric infrastructure needs to help New York achieve the CLCPA clean energy mandates, particularly to the

extent they may decrease the need to rely on fossil fuel generation and reduce the carbon intensity of the electric grid. The New York State Climate Action Council Draft Scoping Plan (released December 31, 2021) underscores the importance of increased adoption of distributed energy resources ("DER") which generate electricity closer to end users, thus delivering increased efficiency and reduced carbon emissions compared to other generation sources. DER may also potentially improve grid resiliency and reduce electric infrastructure investments. The NWA process is an important pathway for scaling up DER adoption in New York.

Q. Will the Companies continue to evaluate potential NWA solutions?

A. Yes. In addition to filing quarterly status reports with the Commission, the Companies will continue to involve Staff in the advancement of potential NWA opportunities.

D. NWA Cost Recovery

Q. How are NWA costs currently treated from an accounting and cost recovery perspective?

A. General NWA costs which are not applicable to specific NWA projects are treated as operations and maintenance ("O&M") expenses. Costs incurred by the Companies for implementation of new NWA projects during the current rate plan are deferred with carrying costs and amortized over a 10-year period. During the term of the Companies' current rate plan and until base rates are reset, the amortized portion of such costs are recovered through the Non-Bypassable Charge. Any unamortized costs plus carrying charges are incorporated into base rates when electric base rates are reset. Costs incurred by the Companies to advance wires projects which are ultimately deferred or avoided by an NWA remain in Construction Work in Progress ("CWIP") and are deferred for future

recovery. NWA project costs associated with assets that are owned by NYSEG or RG&E are treated as capital investments.

Q. Are the Companies proposing any changes to the treatment of NWA project cost recovery for currently active and future projects, including the amortization of such costs?

A. No.

E. NWA Incentive Mechanism, BCA Methodology and Reporting Requirements

Q. How is the current NWA incentive mechanism structured?

A. The Companies' current NWA incentive mechanism is set forth in Appendix HH to the 2020 Joint Proposal, which is attached to this testimony as Exhibit __ (NWA-NPA-2). Through their NWA incentive mechanism, the Companies may retain 30% of the present value of net benefits identified by comparing the NWA project to the traditional infrastructure project based on the BCA.[2] A true-up mechanism is used to adjust the incentive to account for differences between the forecasted and actual costs and number of MWs should changes occur. The NWA incentive mechanism provides an incentive floor of $0 and a cap of 50% of the initially identified net benefits.

Q. Are the Companies proposing any changes to the NWA incentive mechanism?

A. No, the Companies propose continuing to utilize the NWA incentive mechanism set forth in Exhibit __ (NWA-NPA-2).

[2] The Company may pursue multiple NWA projects to defer separate traditional infrastructure projects in the same area.

Q. Are the Companies proposing any changes to the NWA BCA methodology?

A. No. Consistent with Exhibit __ (NWA-NPA-2), the Companies will utilize the SCT as defined in the Companies' BCA Handbook V3.0 to determine if an NWA solution is cost-effective. For all NWA projects, the Companies will continue to use a full BCA to compare the present value of the net costs and benefits of an NWA project. The BCA will consider all of the benefit and cost categories in the Commission's January 21, 2016 Order Establishing the Benefit Cost Analysis Framework issued in Case 14-M-0101 and use the Companies' current BCA Handbook V3.0 filed on June 30, 2020 in Case 14-M-0101.

Q. Please provide an overview of current NWA reporting requirements.

A. The Companies file reports 60 days after the close of each quarter showing: 1) NWA project expenditures and all relevant details with respect to project costs; 2) a description of the NWA project activities; 3) anticipated project in-service dates; 4) NWA cost and incentive recoveries; and 5) identification of operational savings or other benefits. The Companies are also required to submit a detailed implementation plan and BCA for each NWA project or portfolio of NWA projects once there is reasonable certainty as to the total costs and file an updated implementation plan on an annual basis.

Q. Are the Companies proposing any changes to NWA reporting requirements?

A. No. The Companies, however, clarify that for purposes of filing a detailed implementation plan and BCA for an NWA project, "reasonable certainty" regarding the costs of the NWA project portfolio is established when a fully executed contract(s) is in place with the third-party project developer(s) selected to implement the NWA project.

V. NON-PIPES ALTERNATIVES

A. Background on NPAs

Q. What are the Companies' approaches and objectives for NPA projects?

A. The Companies' approach to NPA projects reflects the guidance received from the Commission and the commitments made as part of the 2020 Joint Proposal. The approach involves reviewing traditional natural gas infrastructure planned improvements and investments and determining whether there may be economic alternatives to these traditional infrastructure investments. Overall objectives for NPA projects are to build a portfolio of projects which are cost-effective for customers and provide reliable alternatives to traditional capital investment projects, while also providing a basis to learn from and work cooperatively with other utilities and stakeholders.

The Companies' NPA program also supports the Companies' commitment from Appendix M of the 2020 Joint Proposal to structure their gas planning with the objective of achieving a zero-net increase in billed natural gas use, normalized for temperature, in their service territories over the three-year term of the Companies' current rate plan. The Companies' NPA program works to reduce or eliminate natural gas consumption in targeted areas by deferring or avoiding certain traditional natural gas capital pipeline projects through cost-effective alternatives including supply-side and demand-side solutions. By utilizing innovative alternatives to traditional infrastructure, the Companies' NPA program furthers the State's clean energy and climate goals.

The Companies are committed to leveraging their NPA programs to implement innovative solutions to improve system reliability, potentially achieve cost savings for

customers, support advancement towards New York's energy and climate goals, and encourage local economic development.

Q. Please describe the current process for selecting NPAs.

A. The Companies' current NPA process is set forth in Appendix HH to the 2020 Joint Proposal (see Exhibit __ NWA-NPA-2). As technologies become available in the market, and regulatory requirements and state environmental policies progress, the Companies continue to review identified natural gas system reliability needs and traditional natural gas capital projects for NPA opportunities. The NPA process starts with performing an analysis of the natural gas system to determine if there are natural gas system reliability needs. For reliability needs that would normally result in pipeline infrastructure projects, an NPA screening process is conducted. If a project passes the NPA screening process, then it is considered for NPA solutions. As outlined in Appendix M of the 2020 Joint Proposal, projects are excluded from NPA consideration if construction is imminent (i.e., scheduled to start within 12 months) or the project poses an immediate threat to public safety.

A streamlined analysis is used for projects with a cost of $2 million or less, and for projects with a cost greater than $2 million, the NPA RFP process is used. If an NPA solution is technically and economically feasible, it is selected and implemented. If no

acceptable alternative solutions are available in the market, the traditional solution may be implemented.

B. Current Projects

Q. Do the Companies currently have any NPA projects underway?

A. Yes. The Companies are actively advancing the NYSEG Lansing NPA Portfolio of Projects (the "Lansing NPA"). The Lansing NPA, among the first of its kind in New York, uses a portfolio of innovative solutions that, when implemented together, will strengthen the reliability of service for NYSEG's gas customers in the impacted area. NYSEG's Ithaca Division has experienced significant growth on its natural gas distribution system which has led to lower than acceptable delivery pressures during peak conditions in the Lansing, New York area. Due to these reliability concerns, NYSEG has operated under a moratorium on new or expanded gas service in the Lansing area since February 2015. For much of the last decade, NYSEG has investigated and pursued remedies to the low-pressure situation in Lansing, including the traditional pipeline solution provided by the Lansing/Freeville Reinforcement Pipeline Project, and the non-traditional approach of the Natural Gas Compressor Pilot project. NYSEG reinforced the system with the East Shore Drive gas main installation project and anticipates additional system reliability gains with an NPA solution. In the process followed to arrive at an NPA solution, NYSEG issued an RFP, a Request for Information ("RFI"), and a second RFP, all seeking cost-effective, market-based solutions to the low-pressure situation, which would have a high potential for acceptance in the Lansing community. In support of those activities, NYSEG held several technical conferences, conducted community

outreach, and maintained a dialogue with Staff. NYSEG also gathered input from stakeholders and adjusted the developing NPA plan accordingly.

On September 1, 2020, NYSEG filed a petition with the Commission seeking authorization to implement a portfolio of NPA solutions which would eliminate the need for natural gas compressor stations and improve the low-pressure situation on the Lansing area distribution system. On June 21, 2021, the Commission issued its Order Approving Petition for Non-Pipe Alternative Project, With Modifications in Case 17-G-0432 (the "Lansing NPA Order"), authorizing NYSEG to proceed with the procurement of a modified portfolio of seven NPA projects, which is expected to provide a total reduction in hourly natural gas demand in the Lansing area of approximately 56 MCFH. Upon executing contracts with the seven third-party project developers, NYSEG will file an implementation plan with the Commission as directed in the Lansing NPA Order. Additional details regarding this project, including the system need, traditional solution, and NPA portfolio specifics, can be found in the Lansing NPA Order and Exhibit __ (NWA-NPA-4).

C. Planned Projects

Q. Are the Companies pursuing other NPA opportunities?

A. The Companies are actively developing their portfolio of NPA projects as new opportunities emerge to address traditional natural gas system needs through innovative NPA solutions intended to alleviate system reliability concerns, reduce reliance on fossil fuels, potentially deliver cost savings to customers, and support achievement of the goals established in the CLCPA. The Companies have invested a significant amount of time collaborating with Staff to design a programmatic framework that will enable efficient

and effective scaling of NPA efforts to support New York's shift away from fossil fuels. NPAs provide potentially cost-effective alternative solutions to traditional natural gas system investments which may reduce reliance on fossil fuels and support achievement of the carbon emissions reductions targets established through the CLCPA.

As previously discussed, the Companies have established an ongoing process where all planned natural gas capital projects are screened to determine if an NPA solution should be considered. Projects that pass the initial NPA evaluation are further evaluated for technical and economic feasibility of an NPA solution. This process enables proactive and comprehensive review and identification of NPA opportunities.

The Companies have established and implemented the process for reviewing planned natural gas capital projects and developing a prioritized list of promising NPA solutions after collaborative discussions with stakeholders.

The New York State Climate Action Council Draft Scoping Plan recommends that utilities be required to identify leak-prone main ("LPM") for replacement, quantify leakage, consider NPAs, and maintain safe and reliable service. The Companies have already committed to this practice under the 2020 Joint Proposal and involved Staff in the development of a streamlined process for the technical and economic evaluation of LPM replacement projects that could potentially be addressed through an NPA. Through this process, the Companies are assembling a portfolio of LPM replacement projects that will be targeted for an NPA solution. To ensure continued consideration for NPA solutions, the Companies get a one-for-one credit toward the overall LPM replacement mileage targets if an NPA or other economically viable solution is implemented in lieu of the

traditional LPM replacement project as described in Appendix M of the 2020 Joint Proposal.

While cost-effectiveness as determined through a streamlined BCA approach is an important driver for NPA consideration, the Companies are taking additional factors into account including the LPM replacement project's risk ranking, proximity to vulnerable system location, income level of impacted area, and other important designations (communities identified as disadvantaged, environmental justice, etc.).

Q. Are the Companies taking measures to increase the likelihood of successful NPA projects being implemented in lieu of the traditional LPM replacement projects?

A. Yes. First, the Companies are engaging a third-party expert to assist with marketing, customer outreach, project scoping, financial and technical analysis, and installation among other activities as needed. Second, the Companies are offering customers located in LPM replacement areas a cost-effective package of electrification measures at little to no cost to the customer[3] depending upon project economics evaluated through the BCA. The goal is to achieve full electrification of homes and businesses in the impacted area through a combination of financial incentives. Consistent with the 2020 Joint Proposal, the Companies are leveraging incentive stacking which combines NPA-based incentives with those offered through Energy Efficiency programs such as the Clean Heat Program. In addition to filing quarterly status updates with the Commission, the Companies will

[3] The Companies will offer a standard conversion package at no cost to the customer. Some premium measures (e.g., geothermal heating systems, high-end cooking equipment) requested by customers, may require a co-pay to achieve project cost-effectiveness.

continue to involve Staff regarding their efforts to advance non-gas NPA solutions for LPM replacement projects.

D. NPA Cost Recovery

Q. How are NPA costs currently treated from an accounting and cost recovery perspective?

A. General NPA costs not applicable to specific NPA projects are considered O&M expenses. Costs incurred by the Companies for implementation of new NPA projects during the rate plan will be deferred with carrying costs and amortized over the installed asset's anticipated "used and useful" life (or for a 20-year period if the useful life cannot be measured). During the term of the current rate plan and until base rates are reset, the amortized portion of such costs will be recovered through a separate surcharge. Any unamortized costs plus carrying charges will be incorporated into base rates when gas base rates are reset. Costs incurred by the Companies to advance pipeline projects which are ultimately deferred or avoided by an NPA would remain in CWIP until addressed in a future proceeding. NPA project costs for assets that are owned by NYSEG or RG&E are treated as capital investments.

Q. Are the Companies proposing any changes to the treatment of NPA project cost recovery?

A. The only change the Companies seek to make is with respect to costs associated with third-party support services for implementation of small NPA projects with a cost of $2 million or less, including the advancement of NPA solutions to address LPM replacement projects. The Companies have engaged a third-party expert to assist with marketing, customer outreach, project scoping, financial and technical analysis, and installation among other activities required to develop and advance small NPA projects. The 2020

Joint Proposal did not specifically contemplate such costs, so the Companies propose treating them in accordance with the mechanism used to recover other non-capital NPA project costs (i.e., deferred with carrying costs and amortized over the used and useful life of the installed assets and equipment).

Q. Are the Companies proposing any changes to the amortization of NPA project costs?

A. No.

E. NPA Incentive Mechanism, BCA Methodology and Reporting Requirements

Q. How does the current NPA incentive mechanism work?

A. Through the NPA incentive mechanism, the Companies may retain 30% of the present value of net benefits identified by comparing the NPA project to the traditional infrastructure project based on the BCA. The final incentive will equal the sum of the initial incentive and 50% of the difference in the NPA project cost. The final incentive is subject to a floor of $0 and a cap of 50% of the initial net benefits.

Q. Are the Companies proposing any changes to the NPA incentive mechanism?

A. No.

Q. Are the Companies proposing any changes to the BCA methodology?

A. No. For large NPA projects with a cost greater than or equal to $2 million, the Companies will continue to use a full BCA to compare the present value of the net costs and benefits of an NPA project versus the present value of the net costs and benefits of a traditional infrastructure project. For small NPA projects with a cost less than $2 million, the Companies will continue to utilize a standardized review approach, including a streamlined BCA to determine the potential economic and technical feasibility of an NPA.

Q. Please provide an overview of current NPA reporting requirements.

A. The Companies file reports 60 days after the close of each quarter showing: 1) NPA project expenditures and all relevant details with respect to project costs; 2) a description of the NPA project activities; 3) anticipated project in-service dates; 4) NPA cost and incentive recoveries; and 5) identification of operational savings or other benefits. The Companies are required to submit a detailed implementation plan and BCA for each NPA project or portfolio of NPA projects once there is reasonable certainty as to the total costs and file an updated implementation plan on an annual basis.

Q. Are the Companies proposing any changes to NPA reporting requirements?

A. No. The Companies, however, clarify that for purposes of filing a detailed implementation plan and BCA for an NPA project, "reasonable certainty" regarding the costs of the NPA project portfolio is established when a fully executed contract(s) is in place with the third-party project developer(s) selected to implement the NPA project.

VI. GEOTHERMAL DISTRICT ENERGY STUDY FEASIBILITY PILOT PROJECT

Q. Have the Companies explored the feasibility of implementing geothermal district energy systems in their respective service territories?

A. Yes, pursuant to Appendix N of the 2020 Joint Proposal, the Companies retained a vendor with experience in geothermal district energy systems and heat pump heating and cooling solutions to assist in developing a study to examine the feasibility of deploying geothermal district energy systems in the Companies' service territory, and to develop plans for subsequent pilot projects where feasible.

Q. Are the Companies proposing any geothermal district energy system pilot projects?

A. Yes, the Companies are proposing one geothermal district energy system pilot project, which is included in the revenue requirements for NYSEG Gas. The geothermal district energy system pilot project will be sited in NYSEG's service territory on a city block located in Ithaca and serve approximately 20 non-residential and 32 residential buildings which will be converted from natural gas to high-efficiency geothermal heating systems. The preliminary proposed loop configuration is a single-pipe ambient temperature loop with 12" main piping. Small pumping buildings are located throughout the district to house circulation pumps above-ground. The proposed thermal sources include vertical boreholes drilled to depths of approximately 125 feet beneath the surface, wastewater heat recovery, and surface water heat recovery from the Cayuga Inlet. Based on the calculated annual energy savings associated with this project, 184 metric tons of carbon emissions are estimated to be offset by converting the targeted buildings from fossil fuel heating to electric heating.

Following successful installation and operation of the initial pilot project, additional projects may be recommended in the future, which can incorporate lessons learned from the first pilot project. The Companies recognize this pilot project as a significant opportunity to advance geothermal district energy system technology in their respective service territories, which will provide customers with a cost-effective clean energy heating and cooling solution and support advancement towards New York's clean energy and climate goals.

Q. Are the Companies proposing a specific ownership structure for the geothermal district energy system pilot?

A. Yes, the Companies are proposing NYSEG ownership of the geothermal district energy system assets that are part of the proposed pilot. The Companies, in collaboration with Staff, will develop an appropriate, innovative rate structure to ensure accurate customer invoicing for the services.

Q. What is the anticipated cost of the geothermal district energy system pilot project and how will it be funded?

A. NYSEG included $33.8 million in capital expenditures to support implementation of the geothermal district energy system pilot project, with $4 million in spending in the Rate Year, $12 million in spending in the following year, and $0.89 million in ongoing system costs for each subsequent year over the 20-year useful life of the system. Please refer to Exhibit __ (NWA-NPA-7) for additional information related to funding.

VII. INCREMENTAL RESOURCES TO ACHIEVE NWA AND NPA GOALS

Q. Are incremental resources needed to manage the Companies' NWA and NPA efforts?

A. Yes, the Companies require two additional full-time employees ("FTEs") to provide programmatic, technical, and administrative support to advance NWA and NPA efforts.

Q. Please describe the need for the additional FTEs.

A. The Companies are committed to leveraging their NWA and NPA programs to support achievement of the goals outlined in the CLCPA and require these additional resources to support the growth and evolution of the programs as we move towards a clean energy future. The Companies have collaborated closely with Staff to design a programmatic framework that enables efficient and effective identification of opportunities to address

traditional electric and natural gas system investments through NWA and NPA solutions. The Companies are anticipating significant growth of their NWA and NPA portfolios as the volume and maturity of projects progresses. Particularly on the natural gas side, and consistent with the 2020 Joint Proposal's requirement that all traditional gas capital projects be evaluated for NPA opportunities, the Companies are preparing for a flurry of NPA activity as New York pushes to move away from fossil fuels.

To be successful, additional resources are needed to evaluate a comprehensive portfolio of traditional natural gas infrastructure projects for potential NPA opportunities, administer the solicitation and contracting process with third-party developers, establish reporting requirements and processes, manage invoicing and post-installation measurement and verification ("M&V") activities that may be required for a period of at least 10 years after a project is placed in service, and develop marketing and outreach strategies to enhance program effectiveness and scale up participation over time. Additionally, NYSEG is executing its first NWA and NPA contracts with third-party developers. Execution of these contracts will result in a significant body of work for NYSEG as we enter the project implementation phase and conduct M&V activities over the life of the projects.

Q. Please describe the two FTEs being requested by the Companies.

A. The Companies require the following two FTEs to successfully advance and expand their NWA and NPA programs and portfolio of projects:

Lead Analyst – This position will support NWA and NPA projects throughout the project identification, development, procurement, evaluation and contracting stages. Additionally, this position will establish and oversee tracking, reporting, and M&V

activities related to NWA and NPA projects. Another important function will be participation in the ongoing development and utilization of the BCA Handbook for both NWAs and NPAs, and incorporation of the BCA and other screening methodologies into electric and natural gas system planning analyses.

Engineer – This position will be responsible for providing engineering expertise to support the development and analysis of NWA and NPA technologies and projects, with specific focus on identifying, evaluating, and advancing NPA opportunities. This position will also interpret and apply relevant codes, tariffs, and standards, and ensure compliance with regulatory requirements to support safe and efficient operation of NWA DER on the electric distribution system and NPA solutions on the natural gas system, as well as work with internal and external stakeholders to resolve technical issues affecting NWA/NPA projects and the distribution system.

Q. Does this conclude your testimony at this time?

A. Yes, it does.