National Grid

Urgent Upgrade Projects

Case 24-E-0364

In the Matter of Proactive Planning for

Upgraded Electric Grid Infrastructure

November 13, 2024

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I. Introduction and Executive Summary

In this filing, Niagara Mohawk Power Corporation d/b/a National Grid ("National Grid" or "Company") seeks approval of, and cost recovery for, Urgent Upgrade Projects as described in the "Order Establishing Proactive Planning Proceeding" (the "Order").[1] These projects include:

- **Urgent Upgrade Projects for Transportation Electrification** – Projects to address urgent needs driven primarily by load associated with transportation electrification, consisting of:
    - **I-90 System Capacity Upgrades** – These projects include new substations, transmission taps, and new distribution feeders and associated utility equipment at feeder endpoints to initially create 100 MW of system capacity at strategic locations along 300 miles of the New York State Thruway system on I-90, with ability to expand to a total of 200 MW of capacity. These projects create capacity to accommodate load growth identified using vehicle telematics and charging data at high-traffic locations for fast-charging. These projects were included in National Grid's rate case filing in May 2024.[2]
    - **Mobile Battery Energy Storage** – These projects include three mobile battery energy storage (MBES) units deployed as a non-market, utility-integrated asset. These projects initially create a bridge-to-wires solution at three constrained I-90 locations as the I-90 System Capacity Upgrades are developed. These projects were included in National Grid's rate case filing in May 2024.

[1] Case 24-E-0364, *In the Matter of Proactive Planning for Upgraded Electric Grid Infrastructure*, "Order Establishing Proactive Planning Proceeding" (Issued and Effective August 15, 2024).

[2] Case 24-E-0322, *Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Niagara Mohawk Power Corporation d/b/a National Grid for Electric Service*, Electric Infrastructure and Operations Panel Testimony, May 28, 2024 ("NMPC Rate Case"). The Company requested cost recovery for the I-90 system capacity upgrades and mobile energy storage projects in the NMPC Rate Case; however, Department of Public Service Staff ("Staff") proposed that the investments be addressed in this proceeding. Staff Electric Infrastructure and Operations Panel Testimony at 53-54 and 56-57 (Sept. 26, 2024). Because of the importance of these investments to supporting the State's transportation electrification goals, the Company included them in this Urgent Upgrade Projects filing in the event they are not included in the investment plan approved in the NMPC Rate Case. Appendix 1, Exhibit 1 provides a list of the projects included in the NMPC Rate Case and in this filing.

- **Off-Thruway, I-81, and I-87 Capacity Projects** – These projects include distribution line projects, sub-transmission projects, and station upgrades to create over 50 MW of capacity along other vital transportation corridors and locations, including the non-Thruway portion of I-90 and on I-81 and I-87. The capacity created by these projects will accommodate load growth projected based on information from vehicle telematics and charging modeling at truck stops and vehicle fleet clusters at strategic locations along these corridors. Scopes and estimates for these projects were finalized after National Grid filed the NMPC Rate Case in May 2024; therefore, these projects are not included in the NMPC Rate Case.
- **School Bus Electrification and Customer-Driven EV Projects** – These distribution projects create system capacity for school bus depot electrification and other customer requests. Some school bus projects were also included in the NMPC Rate Case filing.

Table 1, below, identifies the Company's proposed Urgent Upgrade Project Portfolio for Transportation Electrification.

Table 1: Proposed Urgent Upgrade Project Portfolio for Transportation Electrification

Area	Description	Estimated In-Service	Notes
I-90 System Capacity Upgrades	Substation and feeder buildout at five locations along approximately 300 miles of I-90.	2031[3]	In National Grid's pending rate case.
Mobile Battery Energy Storage	Three mobile battery storage units initially deployed at constrained locations on I-90.	2026	In National Grid's pending rate case.
Off-Thruway, I-81, and I-87 Capacity Projects	Distribution and sub-transmission upgrades to provide capacity for public charging and depot electrification.	2026-2029	Final scopes and estimates completed after rate case filed.
School Bus Electrification and Customer-Driven Projects	Distribution upgrades to provide capacity for school bus electrification.	2026-2029	Some school bus projects are in National Grid's pending rate case.

[3] See Project Data Sheets in the appendix for additional details. Construction targeted for completion in calendar year 2030 (project close-out is in calendar year 2031). Associated Project Data Sheets have been updated since NMPC Rate Case filing in May 2024.

The Company's Urgent Upgrade Project Portfolio also includes:

- **Urgent Upgrade Projects for Building Electrification –** Projects to address urgent needs driven primarily by load associated with building electrification, consisting of:
    - **Sub-Transmission Multiple Occupancy Building Projects** – These projects include sub-transmission line extensions and associated infrastructure to address customer notifications of intent or interconnection requests related to new development and redevelopment of multiple occupancy buildings in Western New York. These projects will utilize the Company's 23-kV sub-transmission system to serve customers who have traditionally been served from the distribution system, including the low-voltage 5-kV network, which poses a constraint in accommodating electric heating load. Some projects in this category have arisen since the preparation of the NMPC Rate Case filing.
    - **Customer-Driven Distribution Projects –** These projects include distribution and sub-transmission work to address other customer notification of intent or interconnection requests related to building electrification in the Company's service territory. Projects in this category are associated with customer notifications of intent or interconnection requests that have been received by the Company. Some projects in this category have arisen since the preparation of the NMPC Rate Case filing.
    - **Forecast-Driven Distribution Projects –** These distribution projects are intended to address imminent needs identified by the Company's electric load forecast, in advance of receiving a customer interconnection request for building electrification. The Company's forecast is developed based on supporting customer compliance with the State's electrification pathway. All projects in this category were included in the NMPC Rate Case.
    - **Forecast-Driven Transmission Projects –** These transmission reinforcement projects create upstream capacity to address imminent needs identified by the Company's electric load forecast, in advance of receiving a customer interconnection request for building electrification. All projects in this category were included in the NMPC Rate Case.

Table 2, below, identifies the Company's proposed Urgent Upgrade Project Portfolio for Building Electrification.

Table 2: Proposed Urgent Upgrade Project Portfolio for Building Electrification

Area	Description	Estimated In-Service[4]	Notes
Sub-Transmission Multiple Occupancy Buildings Projects	Sub-transmission line extensions and pad mounted transformers/switchgears. Customer-driven projects.	FY25-27	No individual projects are included in National Grid's pending rate case.
Customer-Driven Distribution Projects	Sub-transmission line extensions, boutique substations[5], and distribution feeder voltage conversions and extensions to serve customer requests.	FY25-29	Some projects are in National Grid's pending rate case, and some are emergent.
Forecast-Driven Distribution Projects	Substation and distribution line, upgrades to address forecasted building electrification load growth.	FY28-32	Projects included in National Grid's pending rate case.[6]
Forecast-Driven Transmission Projects	Targeted transmission reinforcements to increase capacity for customer-driven projects and forecasted growth.	FY29	Projects included in National Grid's pending rate case.

In the Joint Utilities' concurrent filing ("JU Criteria Filing") in this proceeding, the Joint Utilities propose criteria for Urgent Upgrade Projects ("Urgent Projects Criteria").[7] The projects in National Grid's proposed Urgent Upgrade Projects Portfolio satisfy the Urgent Projects Criteria and the requirements of the Order:

1) The proposed projects are required to create capacity to enable the electrification of transportation or buildings.

[4] Provided as fiscal years (FY) for simplicity across multiple projects. The Company's fiscal year runs through March 31 of the corresponding year (so the current fiscal year, FY25, ends on March 31, 2025).
[5] Boutique substations, in contrast to standard substations, are distribution line assets that are characterized by their use of pad mounted transformers and pole-mounted distribution equipment, (i.e. fuses, risers, and cable).
[6] Projects of overlap include updated scope where applicable.
[7] The Joint Utilities are Central Hudson Gas & Electric Corp.; Consolidated Edison Company of New York, Inc. (Con Edison); National Grid; New York State Electric & Gas Corporation; Orange & Rockland Utilities, Inc.; and Rochester Gas and Electric Corporation.

2) Construction-related activities for the proposed projects should begin by July 2026 to support projected load. Several projects include long lead-time infrastructure such as substations, which can take many years to build.
3) Included projects have a high degree of certainty as to the timing, location, and magnitude of anticipated load growth based on granular forecasts and system forecasts consistent with state policy, and/or customer requests or information, which addresses stranded asset risk.
4) The proposed portfolio includes solutions that are appropriately sized to manage risks related to under-building or over-building infrastructure, and which minimize risks associated with delayed action, such as delays in meeting customer requests for service.

Additionally, National Grid's Urgent Upgrade Projects Portfolio complements other work, such as planned transmission upgrades; addresses multiple needs, such as other load growth expected proximate to project locations; addresses critical infrastructure barriers preventing customers from electrifying consistent with State policy and regulations; provides benefits related to emissions and economic development, including in Disadvantaged Communities ("DACs"); and anticipates the impact of dependencies such as those relating to permitting and equipment lead-times.

National Grid requests approval of the Urgent Upgrade Projects Portfolio by March 1, 2025 so Construction-Related Activities (as defined in the JU Criteria Filing) can commence to support timely delivery of the projects; and also requests authority to recover the revenue requirement associated with the Urgent Upgrade Projects through a Proactive Planning Surcharge.[8]

The Company provides additional detail about its Urgent Upgrade Project Portfolio in appendices to this filing, which include: summaries of project portfolios for Transportation and Building Electrification, with details as to how projects meet the Urgent Projects Criteria (Appendix 1); details on the Company's methodology for projecting load growth and identifying needs (Appendix 1); an exhibit indicating projects which are included in the May rate filing and the Urgent Upgrade Projects Portfolio (Appendix 1); draft tariff leaves for the proposed Proactive

[8] If cost recovery for projects included in the Urgent Upgrade Projects Portfolio is included in the investment plan approved in the NMPC Rate Case, the Urgent Upgrade Projects surcharge would not include cost recovery associated with those projects.

Planning Surcharge (Appendix 2); written stakeholder input for Transportation Electrification projects (Appendix 3); and individual project data sheets (Appendix 4).

II. Background and Context

National Grid serves over 1.7 million electric customers and over 600,000 gas customers in Upstate New York. The Company's territory covers thousands of square miles and includes rural communities as well as densely populated urban areas, several of which are expected to experience concentrated electric load growth from housing development and gas-to-electric conversions, in addition to the electrification of light-, medium- and heavy-duty vehicles ("LDV" and "MHDV"). The Company's territory also includes extensive portions of the National Highway Freight Network, including most of I-90 and large segments of I-81 and I-87.

The Company has sought to proactively ready its systems for load growth from electrification and to accommodate a growing number of customer requests for electrification projects. The pending NMPC Rate Case includes urgent projects to enable electrification of transportation and buildings, and the Company has been active in proceedings before the Commission, including in the MHDV Proceeding,[9] where it provided comments and presented on new approaches to plan for "spot" load growth from electric vehicle (EV) charging.

The Commission has already approved proactive planning and investment approaches on the local transmission system.[10] Through the approved CLCPA Phase 1 and Phase 2 projects and other local transmission reinforcement work, the Company is proactively creating system capacity to accommodate renewable generation. Those investments can create transmission-system capacity to additionally accommodate load from EVs or electric heating.

A similar urgency is required to enable delivery of electric power to areas of known and forecasted spot load growth, such as from fast-charging sites, vehicle fleet clusters, or large residential buildings. As the Commission notes in the Order, "New York needs a significant ramp-up in infrastructure upgrades to support increasing electrification from both the building and transportation sectors."[11] Developing electric infrastructure can take years to design, permit, and

[9] Case 23-E-0070, *Proceeding on Motion of the Commission to Address Barriers to Medium- and Heavy-Duty Electric Vehicle Charging Infrastructure.*
[10] *See, e.g.*, Case 20-E-0197, *Proceeding on Motion of the Commission to Implement Transmission Planning Pursuant to the Accelerated Renewable Energy Growth and Community Benefit Act*.
[11] Order, p. 3.

construct. For example, the Company is currently seeing lead-times for certain transformers of over 200 weeks, emphasizing the importance of timely action. Delaying consideration and approval of urgent projects until the development of a long-term planning process in this proceeding (expected in 2026) will delay required infrastructure, and adversely impact customers and achievement of the State's electrification objectives. For example, the Company is currently seeing lead-times for certain transformers of over 200 weeks, emphasizing the importance of early action.

The Company's Urgent Upgrade Projects Portfolio includes small-scale projects that may be placed in service in the next couple years, as well as long-lead time projects for which major Construction-Related Activities—such as permitting and equipment procurement—can take years. The Company will continue to consider new approaches to cost-effectively provide or maintain capacity for connecting customers as infrastructure is built to meet needs, including alternative solutions such as bridge-to-wires approaches like the mobile battery energy storage projects included in this proposal, Non-Wire Alternatives ("NWAs"), or through flexible interconnection approaches, which the Company is currently piloting. While the Company's proposal herein includes an initial set of urgent projects with a high degree of certainty, future projects also will be needed to accommodate electrification of buildings, transportation, industrial, and economic development activity in additional locations across the Company's service territory.

Sections III and IV describe the two categories of projects in the Company's Urgent Upgrade Projects Portfolio: Transportation Electrification and Building Electrification. For each, the Company describes how it identified areas of need for urgent projects, including the approaches highlighted in the JU Criteria Filing (system forecast, granular load studies, and customer requests and information); a summary of proposed Urgent Upgrade Projects; how the proposed Urgent Upgrade Projects align to the Urgent Projects Criteria proposed in the JU Criteria Filing; and benefits from the proposed projects.

III. Urgent Upgrade Projects: Transportation Electrification

A. Approach to Identifying Areas of Need for Transportation Electrification

The Company identified areas of need for urgent projects related to transportation electrification utilizing: 1) the Company's Electric Load Forecast ("ELF"); 2) granular load

studies, including a corridor charging study and studies of vehicle fleet "clusters" in the Company's service territory; and 3) information from customers, such as school districts.

Transportation Electrification in Electric Load Forecast

In assessing load growth from electric vehicles, the Company's ELF considers various vehicle types, including light-duty, medium-duty, heavy-duty, transit buses, and school buses. For each vehicle type, the Company develops a service-territory level electrification outlook based on historical trends, market research, and compliance with the Advanced Clean Car II ("ACC-II") and Advanced Clean Truck ("ACT") regulations, as well as the school bus electrification mandate in place in NY. The Company's forecast scenario used to identify projects included in this filing assumes automakers achieve compliance with the zero emission vehicle ("ZEV") new vehicle sales requirements specified in the ACC-II and ACT rules and regulations as adopted by the State.[12] Since the school bus electrification mandate is more stringent than the corresponding ACT rules for school buses, these sales requirements (i.e., 100% new sales starting in 2027 and fully ZEV stock by 2035) are used in the ELF model for school buses instead to ensure projections align with the requirements of the mandate. The Company then analyzes distribution-feeder level adoption through propensity modeling for LDV or through share of energy from commercial and industrial (C&I) customers (for MHDV). The Company updates the forecast annually to integrate new information that becomes available, such as up-to-date adoption trends.

Over the past three years, the Company has made significant strides in developing new analytical approaches to identify location-specific load growth that incorporates information with a level of granularity. These studies have provided analytical and data-driven insights that are being used to drive annual enhancements to the transportation electrification component of the Company's ELF. This component of the Company's ELF has traditionally been built in a "top-down" fashion due to granular data limitations, but improving quality and availability of data is beginning to enable these forecasts to incorporate more high-resolution geographic-specification information into its methodological framework, thereby further improving the accuracy of the load model.

[12] Including consideration of flexibility on how automakers might comply with the rules and regulations.

Granular Load Studies

The Company has published granular load studies relating to identifying location-specific EV charging load growth, which it has presented in proceedings before the Commission,[13] other state bodies, and the federal government, and for which the Company received a competitive grant from the U.S. Department of Energy, Vehicle Technology Office to expand its study methodology to other states in the Northeast and Mid-Atlantic. The Company has also sought to align its base assumptions with Con Edison, as detailed in the November 2023 technical conference, though differences among the utilities' service territories (such as square mileage) may require different analytical approaches. The Company details its methodology for identifying corridor fast-charging spot load and fleet electrification spot load below and provides more details in the appendix to this filing, as well as in the public released corridor and vehicle fleet depot charging studies.

Corridor Charging Study Methodology: In 2022, the Company published the Electric Highways Study with RMI, CALSTART, Stable Auto, and Geotab.[14] This study utilizes telematics data, vehicle stock projections, charging modeling, and vehicle stop modeling to project charging capacity requirements to serve LDV and MHDV traffic at over 70 high-confidence locations for fast-charging across New York and Massachusetts, such as Thruway service areas or highway interchanges. The base scenario includes ACC-II and ACT compliant vehicle stock turnover in which all ZEV are EV. Before and after publication of the study, the Company briefed parties including Department of Public Service, key state agencies, transportation authorities, national labs, other utilities, vehicle manufacturers, trucking associations, fleet and charging operators, and environmental justice groups on the study methodology, results, and policy implications of the findings.

Electric Highways Study results indicate significant needs across highway service plazas, with a typical highway charging location requiring 5 MW of charging capacity to serve expected

[13] Case 23-E-0070, *Proceeding on the Motion of the Commission to Address Barriers to Medium- and Heavy-Duty Electric Vehicle Charging Infrastructure,* National Grid and Con Edison Presentation – November 2, 2023 Technical Conference.
https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={D014A58B-0000-C635-BB67-63DF8C34A7FF}

[14] Electric Highways: Accelerating and Optimizing Fast-Charging Deployment for Carbon-Free Transportation (referred to in text as the Electric Highways Study). National Grid, CALSTART, RMI, Stable Auto, and Geotab. November 2022. https://www.nationalgrid.com/document/148616/download

traffic across LDV and MHDV by 2030. The Electric Highways Study results are supported by other public studies, such as a 2023 International Council on Clean Transportation ("ICCT") study which indicated that by 2030, the National Highway Freight Network (which includes corridors such as I-90) will require an average of more than 6 MW of fast-charging capacity every 50 miles to serve long-haul trucking alone.[15]

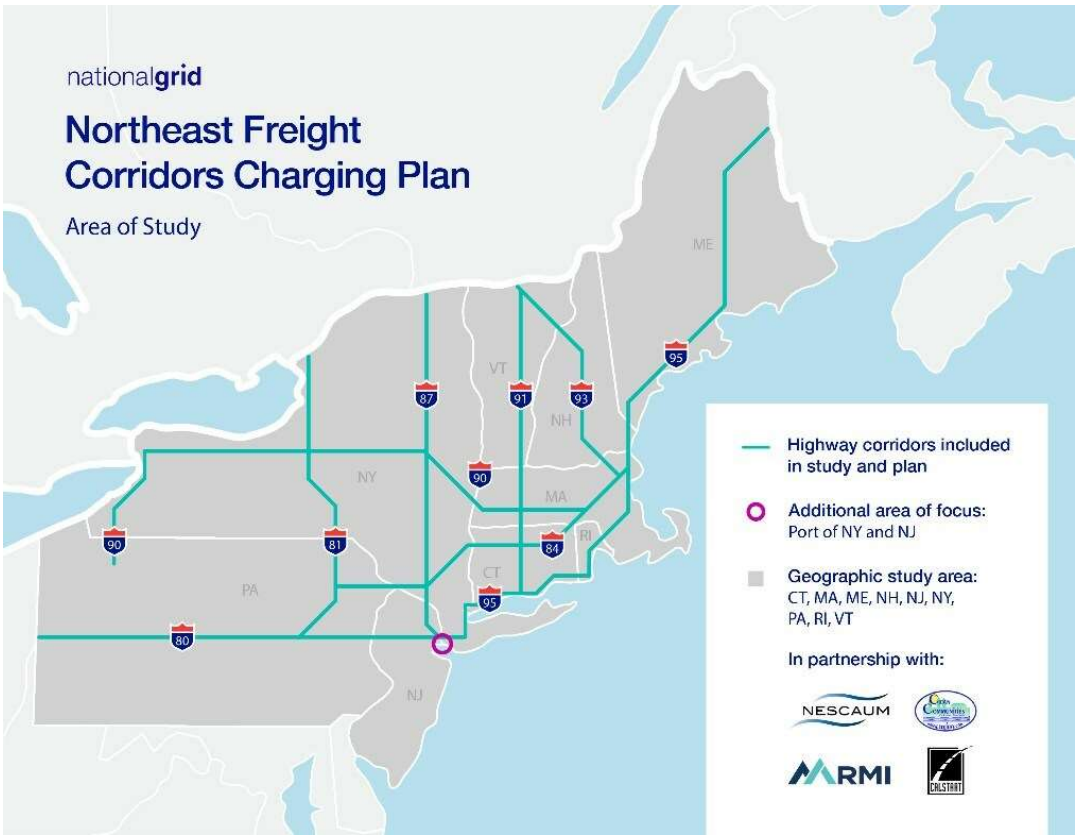
This granular load study methodology was used to inform the Company's selection of Urgent Upgrade Projects at high-confidence fast-charging locations on the Thruway portion of I-90 (Angola, Allegheny Road, DeWitt [Moore Road project], Chittenango ([Gee Road project], Pattersonville, Guilderland), off the Thruway network on I-90 (Castleton-on-Hudson), on I-81 (Cortland, Watertown), and on I-87 (Wilton). These locations represent the initial nodes of a minimum viable network of fast-charging across the key corridors within the Company's service territory.

The Company additionally received a $1.2 million grant from the Department of Energy's Vehicle Technologies Office in February 2023 to expand the Electric Highways Study methodology with RMI, NREL, Northeast States for Coordinated Air Use Management ("NESCAUM") and other organizations to project MHDV charging needs on 3,000 miles of corridors across nine Northeastern states, including New Jersey, Pennsylvania, New York, Connecticut, Rhode Island, Massachusetts, Vermont, New Hampshire, and Maine (Northeast Freight Corridors Charging Plan).[16]

[15] ICCT. Near-Term Infrastructure Deployment to Support Zero-Emission Medium- and Heavy-Duty Vehicles in the United States, P. II. https://theicct.org/wp-content/uploads/2023/05/infrastructure-deployment-mhdv-may23.pdf.

[16] Power Grid International. "National Grid to build DOE-funded EV truck roadmap." October 16, 2023. https://www.power-grid.com/der-grid-edge/electric-vehicles/national-grid-to-build-doe-funded-ev-truck-roadmap/

Figure 1: Northeast Freight Corridors Charging Plan Study Area



Note: The Company is also coordinating with CALSTART, who are administering a neighboring planning grant to the south of the Northeast Freight Corridors Charging Plan which includes I-95 south to the Port of Savannah.

Fleet Cluster Study Methodology: In 2021 and 2023, the Company published two public studies with Hitachi Energy detailing a bottom-up approach to modeling load from "clusters" of fleet vehicles on specific distribution feeders and substations serving commercial or industrial areas.[17] The Company has continued to develop this methodology, which models out charging curves and resulting charging loads for different vehicle sub-classes and applies it to vehicle counts identified by the Company in commercial and industrial areas of the Company's service territory. The base study scenario similarly includes ACC-II and ACT compliant vehicle stock turnover in which all ZEVs are EVs. Zoning in urban areas is one driver of where vehicles congregate. Another

[17] The Road to Transportation Decarbonization: Understanding Grid Impacts of Electric Fleets, National Grid and Hitachi Energy (September 2021), available at https://www.nationalgridus.com/media/pdfs/microsites/ev-fleet-program/understandinggridimpactsofelectricfleets.pdf; and The Road to Transportation Decarbonization: Readying the Grid for Electric Fleets, National Grid and Hitachi Energy (September 2023), available at https://www.nationalgrid.com/document/150356/download.

factor determining where vehicles dwell is interstate and highway junctions. Accordingly, the Company focused its attention on those areas for project site prioritization.

This load projection methodology was used to inform the Company's selection of Urgent Upgrade Projects in Scotia/Rotterdam, Wilton, as well as fleet depots at off-Thruway plazas at Castleton-on-Hudson, Cortland, and Watertown.

Customer Requests and Information from Customers

The Company identified needs for small-scale distribution upgrades to serve school bus depots using information from school districts, including those receiving federal grant funding, as well as other customer-driven projects.

The Company additionally incorporated input from charging developers, site operators, and customers. Appendix 3 includes written stakeholder input for the Company's proposed Urgent Upgrade Projects for Transportation Electrification from parties including Tesla, truCurrent, Terawatt, bp pulse, Daimler Trucks, First Student, International Trucks, Chateau Energy, Zeem, Volvo Group, Scotty's Truck Stop, Love's, Pilot Flying J, Ace Hardware, Student Transportation of America, and Ford Motor Company. The New York Power Authority, Walmart, and Pilot Flying J submitted comments or testimony in Case 24-E-0322 related to the system capacity and/or mobile energy storage projects on I-90 submitted in National Grid's rate case.

The common thread among these and other stakeholders' input is that without substantial investment in electric system infrastructure to support additional capacity, the electrification of the transportation sector will not be possible. Pilot Flying J, North America's largest operator of travel centers, makes this point clearly in a September 9, 2024 letter to Secretary Phillips: "With Pilot's experience in EV charging for light-duty vehicles, we know that grid capacity can be a major barrier to large EV installations. Expanding grid capacity in preparation for MHD EV charging will help Pilot continue to roll out a diversified fuel supply to its 70,000 fleet customers and 1.2 million daily guests across nearly 900 locations nationwide." Corridor charging is an essential component of a healthy charging ecosystem.

Tesla, the manufacturer of the Tesla Semi, echoes similar sentiments in their comments (in Appendix 3 to this filing): "The piece that is needed in order to achieve successful deployments of those trucks is adequate charging infrastructure and the bottleneck to heavy-duty charging

infrastructure is grid capacity. For this reason, Tesla supports the approval of National Grid's proactive grid investments for transportation electrification."

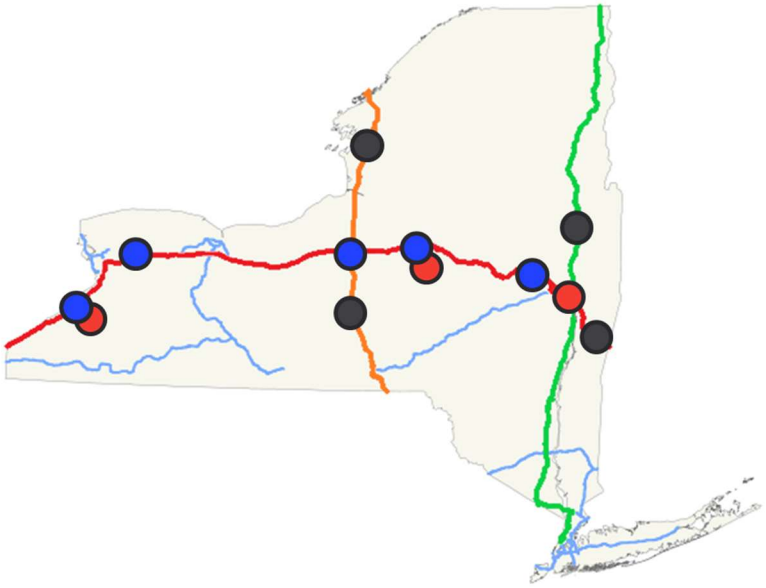
The Company has consulted closely with the New York State Thruway Authority. With support from the Company and the Electric Highways Study results, the Thruway applied for a federal Charging and Fueling Infrastructure (CFI) Grant which would install over two megawatts of fast-charging—including a one-megawatt charger—for MHDVs at select locations on the Thruway system. If awarded, that grant would include every Thruway service area on I-90 whose vehicle load growth is addressed in the Company's rate case and Urgent Upgrade Projects Portfolio (Angola, DeWitt [Moore], Chittenango [Gee Road], Pattersonville, Guilderland).

B. Proposed Urgent Upgrade Projects for Transportation Electrification

The Company's portfolio includes five new substations to address a system capacity need across 300 miles of I-90, which requires 100 megawatts of charging capacity every five years to enable state regulations and policy. These five substations will create an initial 100 megawatts of incremental capacity when deployed. The Company sought to simplify engineering and design of the substations by creating a single and simplified design with optionality to add capacity to accommodate increased electrification (*e.g.*, 40 MVA transformer, four feeder positions, and space for a spare transformer for outages and resilience). The Company's proposal also includes a small fleet of three mobile energy storage systems to create a bridge-to-wires solution at constrained I-90 locations, before being redeployed for other system and customer needs. The portfolio additionally includes sub-transmission and distribution projects to create capacity for corridor and fleet charging on I-81 and I-87, as well as for school districts electrifying their buses and other customer-driven projects.

The attached appendices include further information project data sheets on all proposed projects for Transportation Electrification, which include discussion of alternatives considered. A map of the Company's proposed Urgent Upgrade Project Portfolio for Transportation Electrification is included in 2 below.

Figure 2: Proposed Urgent Upgrade Projects: Transportation Electrification[18]



I-90 System Capacity Upgrades	
Initial priority locations for Mobile BES	
Off-Thruway, I-81, and I-87 System Capacity Projects	
Not indicated on map – School Bus & Customer-Driven Projects	

C. Alignment to Proposed JU Criteria for Urgent Upgrade Projects

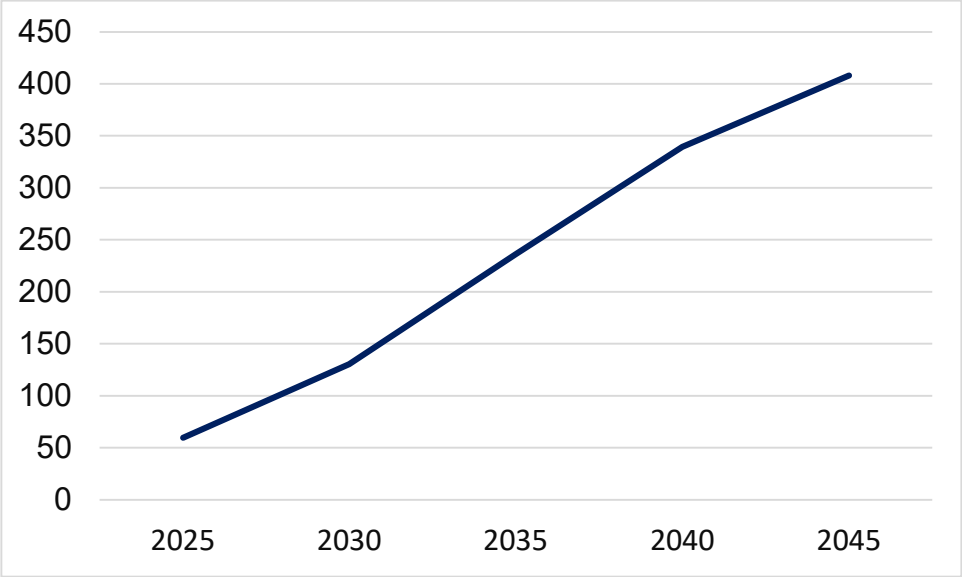
The Company's proposed Urgent Upgrade Projects Portfolio for Transportation Electrification aligns with the Joint Utilities' proposal for Urgent Upgrade Project Criteria detailed in the JU Criteria Filing. For further detail, refer to **Error! Reference source not found.**Appendix 1, which discusses each project type and how it aligns to the Urgent Project Criteria.

Urgent Project Criteria #1: Upgrades Required to Enable Transportation Electrification – The Company's transportation projects create capacity for load growth identified from granular load studies (based on vehicle data and charger modeling) and customer information.

[18] To provide appropriate corridor coverage, the Company has consulted with other utilities on its I-90 corridor proposal. NYSEG/RG&E serve the 125+ mile stretch of corridor between the Alleghany Road project addressing vehicle load growth at a cluster of truck stops and the Moore Road project addressing vehicle load growth around the DeWitt Thruway Plaza. Additional Syracuse project is included in Off-Thruway category (overlaps with blue circle).

The Company's I-90 projects will create system capacity to address a corridor-long need across the State, as well as load growth at high-traffic sites. Meeting the Electric Highways Study's base scenario of passenger vehicle and MHDV compliance with ACC-II and ACT via adoption of EVs would require 100 MW of charging capacity to be installed every five years at existing fueling locations studied along I-90.

Figure 3: Charging Capacity (MW) Required Across 300 Miles of I-90 in New York



Note: Nameplate charging capacity required for both LDV and MHDV load growth based on Electric Highways Study results compliant with ACC-II and ACT in which all ZEVs are EVs. Includes over 20 locations across all of I-90.

The Electric Highways Study results indicate that a typical highway fast-charging location on a high-traffic corridor like I-90 will require over 5 MW of charging capacity by 2030, and 10 MW by 2035, which is well beyond the average capacity available on a typical, existing distribution feeders in the Company's system. This level of load growth also introduces constraints at substations near fast-charging sites. Existing area capacity will also be depleted by other load growth projected through the Company's ELF, or identified through granular fleet load studies. The Moore Road substation is expected to serve not only load growth from vehicle traffic modeled at the DeWitt Thruway Service Area, but surrounding fleet depot growth from a concentration of commercial and public fleet operators. Off-Thruway projects developed after the filing of the NMPC Rate Case, such as the Wilton Project, create capacity for corridor fast-charging load growth from LDV and MHDV, and fleet depot charging growth, including school bus and

municipal fleets in the area. School bus-specific projects create capacity for load growth required to enable school bus fleet owners and operators to meet the State's mandate that all new school buses be electric by 2027.[19]

Urgent Project Criteria #2: Urgency Determination: The urgency of the Company's Transportation Electrification projects is driven by three factors: 1) the scale of potential load growth at specific locations and long lead-times for infrastructure required to accommodate it, 2) existing constraints on capacity, and 3) the pace of electrification.

Addressing the multi-megawatt scale of load growth at high-traffic locations on I-90 requires long lead-time infrastructure such as a new substations and feeders. In the Company's experience, new substations can take up to eight years to place in service, with six years being typical. Placing such infrastructure in service by the beginning of the next decade would require beginning Construction-Related Activities immediately,[20] and ideally would have already begun. The Company recognized the urgency of beginning these long-lead time projects by requesting approval of the I-90 System Capacity Upgrade, Mobile Battery Energy Storage, and a selection of School Bus projects in its rate case, which was submitted before the initiating order in this proceeding and nearly six months before this filing.

Several locations in the Company's proposed portfolio face constraints not only in the next few years, but immediately. Electric infrastructure serving vehicle traffic at the Angola Thruway Plaza is constrained; there are no high-powered fast-chargers at Angola today, despite it being one of the most visited Thruway Service Areas in New York. To mitigate these impacts, the Company has evaluated alternative approaches, and proposes a non-market participating mobile energy storage system and associated distribution upgrade to create immediate capacity for electric vehicles at Angola as a bridge-to-wires while the substation and new feeders serving the area are built out. Capacity available at multiple locations is also being exhausted by recent load requests (see Appendix 1 and Project Data Sheets for additional details).

[19] https://www.nyserda.ny.gov/All-Programs/Electric-School-Buses/All-About-Electric-School-Buses
[20] For additional discussion of timelines for substation project in-service, see Project Data Sheets.

Urgent Project Criteria #3: Degree of Certainty – The Company's portfolio for Transportation Electrification includes projects with a high degree of certainty as to the location, timing, and magnitude of future load growth, which minimizes stranded asset risk:

Location: The Company's methodology for projecting load growth in the Electric Highways Study and fleet cluster studies uses actual vehicle data, including vehicle telematics, as well as sophisticated modeling of charging behavior for individual vehicle sub-classes. In effect, the Company's analytical approach projects load growth based on where vehicles stop and/or cluster today, such as Thruway service areas, highway interchanges, and commercial areas.

Additionally, the Company has consulted directly with charging operators, fleets, and site operators, such as the New York State Thruway Authority, including on the grant application the Thruway submitted to support installation of MHDV charging at Thruway-operated project locations. Another location included in the I-90 System Capacity Upgrades project portfolio, Alleghany Road, includes a cluster of three fueling operators and truck parking, and is included as a high-priority truck stop for charging deployment in the federal Zero-Emission Freight Corridor Strategy released earlier this year, with the entire I-90 corridor in New York designated as a national electric vehicle corridor by the Federal Highway Administration (FHWA).[21] The Company has employed similar input for school bus depots and other projects off I-90.

Timing and Magnitude: The Company has sought to minimize uncertainty related to its granular load analyses by publicly releasing its methodology for corridor and fleet cluster studies, which incorporates best practices and expertise of partners such as RMI, CALSTART, Geotab, Stable Auto, and Hitachi Energy.

- The Company modeled EV load under a regulation-compliant scenario to understand the speed and scale of potential load growth. This approach allows the Company to forecast customer requirements associated with achieving State requirements and objectives. This informs both the timing of needs (*e.g.*, annual sales targets for ZEV) and the magnitude of needs (*e.g.*, total vehicle stock converted to ZEV).

[21] *See* https://www.energy.gov/articles/biden-harris-administration-releases-first-ever-national-strategy-accelerate-deployment.

- The Company identified projects needed to meet the timing and magnitude of vehicle conversion required under State law. The base scenario assumption that all ZEV are EV allows the Company to address both near- and medium-term needs (where as a practical matter, the vast majority of ZEV are expected to be EV) and anticipate the potential long-term needs related to an electrification-predominant pathway.

Urgent Project Criteria #4: Consideration of Risks and Benefits – The Company's project portfolio for Transportation Electrification proactively manages risks:

Appropriately Sizing Infrastructure: Projects are designed to meet both immediate and 2030 needs, while efficiently allowing for future load growth beyond 2030. The Company developed a replicable, scalable approach for the I-90 System Capacity Upgrades, including a standardized substation design at each of the five project locations that creates the ability to expand capacity in phases as charging requirements grow at each location. This approach, coupled with the use of mobile battery energy storage, avoids building undersized infrastructure to meet near-term requirements that is unsuited to meet medium-term or long-term requirements. The Company sized infrastructure to address both LDV and MHDV charging needs at shared locations such as highway interchanges, as LDV and MHDV fueling typically occurs separately and often by different fueling providers. The Company additionally considered other activity in the area, such as heating electrification, economic development, or renewable generation development.

Minimizing Risks of Delayed Action and Maximizing Benefits of Early Action: The Company prioritized locations with immediate constraints and/or multi-megawatt charging capacity requirements by 2030. At these locations, Construction-Related Activities must begin imminently to meet the charging capacity requirement or reduce the time that grid infrastructure cannot serve the charging capacity requirement. The Company's timeline seeks to minimize negative impacts from delayed charging deployment at high-traffic locations, fleets being unable to access adequate electric service to comply with state regulations, and the potential for charging curtailment during high-traffic periods on major highways.

- The Company proposed long lead-time infrastructure such as substations to meet the long-term need; distribution-scale infrastructure upgrades to meet near-term

needs; and mobile energy storage as the flexible solution to address immediate constraints as an interim, bridge-to-wires solution.

D. Benefits of the Proposed Transportation Electrification Projects

The Company's proposed portfolio of Urgent Upgrade Projects for Transportation Electrification is expected to deliver significant benefits:

- Over 150 MW of new grid capacity to accommodate load growth from EV charging, with optionality to expand at strategic substation locations to create another 100 MW of load-serving capacity along the I-90 corridor from the State's western to eastern borders.
- Enabling public charging deployment on heavily traveled corridors, which will serve passenger vehicles and commerce, and reduce curtailment or queuing for charging on the New York Thruway.
- Enabling charging deployment by public and private vehicle fleets subject to State regulations, including State-operated fleets, school bus operators, and businesses.
- Supporting achievement of State regulations and policies.
- Enabling emissions reductions associated with converting vehicles from gas or diesel to electricity, as Upstate New York has one of the lowest-emissions electricity generation mixes in the country.[22]
- Reducing pollution along major travel corridors, which are associated with negative health outcomes such as increased asthma rates.[23] This includes Disadvantaged Communities along the I-90 Corridor.
- Providing economic benefits from project construction.[24]
- Leveraging planned transmission rebuilds to maximize value of in-flight or forthcoming infrastructure upgrades.

[22] The Company is developing an emissions analysis approach for its proposals.
[23] Living Near Heavy Traffic Increases Asthma Severity. UCLA Health Policy Research Brief. August 2006. Accessed at https://healthpolicy.ucla.edu/publications/Documents/PDF/Living%20Near%20Heavy%20Traffic%20Increases%20Asthma%20Severity.pdf
[24] A recent study performed by West Monroe for a separate portfolio of National Grid transmission projects found that at least six local jobs would be created for every $1 million spent locally by National Grid on projects, creating at least $1.40 of increased economic output for every $1 spent locally.

- Delivering multiple benefits, including capacity for non-transportation load growth.

IV. Urgent Upgrade Projects: Building Electrification

A. Approach to Identifying Areas of Need for Building Electrification

Over the past several years, the Company has been actively engaging externally and advancing its capabilities internally to understand the scope of and prepare for load growth from building electrification. The Company recently collaborated with The Energy Systems Integration Group's ("ESIG") Planning for Building Electrification Task Force to publish the "Grid Planning for Building Electrification" report.[25] This report finds that buildings across the country are becoming increasingly electrified, driven by technical advancements, cost reductions for some building technologies, consumer preferences, and decarbonization policy goals. Load impacts from building electrification – primarily from the electrification of space heating via the adoption of heat pumps – will increase the seasonality and weather dependence of loads, particularly in the winter. Building electrification requires the integration of traditionally independent planning processes for energy delivery systems (fossil fuel and electricity), which changes how planners weigh reliability, resilience, affordability, and sustainability.

The ESIG Task Force identified four priority areas to improve distribution system planning: 1) improve forecasting, 2) holistically modernize planning approaches, 3) avoid the largest impacts by managing demand, and 4) be proactive with grid upgrades. The initiation of this proceeding is an important step in implementing the recommendations of the ESIG report, and the Company has similarly worked to incorporate best practices from the four priority areas identified by the ESIG report into its long-term planning practices. An example of how the Company is enhancing its planning practices is integrated energy planning, which considers and incorporates critical interactions of the gas, electric, and customer energy systems into planning processes in the context of achieving long-term climate goals effectively, efficiency, and equitably. In 2023, a group of cities and townships were selected for a Company study analyzing the effects of heat electrification. The outcome of this study provided the Company with insight into the scale of infrastructure upgrades and costs that will be associated with building electrification, and suitable locations for a targeted electrification pilot. The Company proposed incremental operations and

[25] See: "Grid Planning for Building Electrification," Energy Systems Integration Group, October 2024. Available at https://www.esig.energy/grid-planning-for-building-electrification/

maintenance (O&M) in its recent rate case to further invest in these capabilities, and for a targeted electrification pilot.

The Company has also significantly advanced its building electrification forecast methodology. The Company incorporated heat pumps in its 2021 forecast cycles. In its 2022 forecast cycle, this forecast was enhanced by differentiating electric heat pumps into full and partial use cases, developing specific load impact profiles, and leveraging fuel sources information from US Census Data for identifying likely electric heat pump adopters at a more granular geographical resolution. In its 2023 forecast cycle, the Company made further enhancements.

Leveraging this experience, the Company identified areas of need for urgent projects related to distribution- or sub-transmission-connected building electrification utilizing 1) information and requests from customers, and 2) the Company's Electric Load Forecast. Transmission-level electrification such as building electrification of heat and other services is identified through customer requests to serve transmission-connected customers, as well as load forecasts provided by the NYISO.

Building Electrification in Electric Load Forecast and NYISO-Level Forecasts

The Company's ELF forecast for building electrification load within its electric service territory is informed by historical adoption data, program targets specified in the NE:NY order, and State electrification pathways. Furthermore, the Company leverages studies published by institutions such as the National Renewable Energy Lab ("NREL") in estimating load impacts. The Company implements a data-driven method in analyzing likelihood of local adoption by building propensity models using local socioeconomic factors and heating fuel information. This approach ensures the Company's forecasts capture the current available information as possible while allowing for updates as new data and insights become available, considering the early stage and uncertainties in building electrification. The Company's forecast scenario assumes policy achievement of electric heating mandates or regulations.

The Company also utilizes transmission-level forecasts derived by the NYISO to determine required upgrades based on future load projections, including building electrification. Differing from the Company's ELF, the NYISO's forecast is derived from a top-down approach applied to each NYISO zone and captures expected statewide growth. These forecasts include socioeconomic

and policy factors, and aid in alignment between New York policy requirements and anticipated load growth. Projects included in this filing that were derived by the NYISO-level forecasts look to meet expected statewide electrification load growth scenarios.

Customer Requests and Information from Customers

Building electrification is already driving an increasing number of customer interconnection requests for new or upgraded services for all-electric buildings. Where the customer's or applicant's requested demand exceeds 200 kW, the Company will review multiple options to serve a requested customer electrical demand, including the upgrade and/or extension of the Company's facilities, with a focus on timely delivery and cost to serve. These options to serve are developed in accordance with the Company's publicly accessible Electric System Bulletins ("ESBs") that provide guidance on the Company's planning criteria and match the customer requested demand with appropriate service voltage.

Additional evaluations include economic factors, such as Contribution in Aid of Construction ("CIAC"), which are governed by the Company's Tariff. For instance, if the upgrades or extensions necessary to serve the customer are determined to be in the best interest of the Company's Electric Power System ("EPS"), or an established part of the Company's forecasted work plan, it may be determined that all or portions of the proposed upgrade or extension of the EPS will not be recovered from the customer/applicant. The customer-driven projects proposed in this filing encompass the Company's share of system upgrades required to serve specific customer building electrification requests that the Company has received.

B. Proposed Urgent Upgrade Projects for Building Electrification

The Company proposes an Urgent Upgrade Projects Portfolio for Building Electrification that will address customer requests for electrification from the development or redevelopment of buildings, as well as forecast-driven needs related to building electrification. These projects include sub-transmission line extensions and associated infrastructure to serve multiple occupancy building projects in Western New York; distribution and sub-transmission projects to address other customer projects—such as public housing redevelopment—in Syracuse and Utica; distribution projects identified through the Company's ELF, such as the installation of new substation transformers or voltage support equipment; and projects to create transmission capacity for

building electrification identified through the Company's ELF, including a transmission reconfiguration project and work to upgrade system thermal ratings.

The appendices include further information and Project Data Sheets on all proposed projects for Building Electrification, and include a discussion of alternatives considered.

C. Alignment to Proposed JU Criteria for Urgent Upgrade Projects

The Company's proposed Urgent Upgrade Projects Portfolio for Building Electrification aligns with the Joint Utilities' proposal for Urgent Upgrade Project Criteria detailed in the JU Criteria Filing. For further detail, refer to Appendix 1, which discusses each project type and its alignment to the Urgent Project Criteria.

Urgent Project Criteria #1:Upgrade Required for Building Electrification – Projects included in the Urgent Upgrade Projects Portfolio for Building Electrification are all initially driven by significant building electrification load based on either customer service requests or notifications related to building electrification, or by the component-level details of the ELF demonstrating that building electrification is the driver. Approximately half of the Company's proposed portfolio is to address customer requests for building electrification, *e.g.*, requests to enable electric heating from housing authorities and developers. While the primary driver of these projects is building electrification, projects may have additional benefits, such as increasing capacity for renewable generation and economic development, or resolving an asset condition need.

Urgent Project Criteria #2: Urgency Determination: All the Company's proposed building electrification projects are necessary to meet customer plans in accordance with State policy targets. The Company is experiencing a high volume of inquiries and requests related to large-scale electrification of heat and transportation for commercial buildings and residential complexes—in particular, for new buildings covered under the NY All-Electric Building Act, which will require most new buildings to use electric heat starting in 2026.[26] Projects driven by a customer request are manifestly urgent on the basis of near-term customer construction timelines.

These requests are different in nature from traditional new building interconnections. For instance, the load of new underground residential development historically could be served by a

[26] All-Electric Building Act, 2023 S.562-A.

500 kVA pad mounted transformer. Now, new residential development projects, like several of the complexes being proposed in Buffalo and Syracuse, instead require sub-transmission service. Over half of the Company's distribution circuit miles and over a quarter of the low side of the Company's distribution substations are 5 kV, which has limited thermal capacity and therefore typically is not able to serve the load of large, electrified buildings.

The urgency of the proposed forecast-driven projects is based on robust propensity modeling to allocate State pathways and policy to customer building electrification adoption. The proposed forecast-driven projects address urgent overloading concerns driven by electrification and are necessary to meet State goals and prevent delays in future customer interconnections and load expansions. This urgency is especially acute in areas experiencing economic development, such as Troy and Buffalo, as the all-electric nature of these new developments plays a significant role in driving the need for system upgrades to support the new load. Similar to the customer underground residential development example above, while sufficient electrical capacity may have been available for new developments that utilized fossil fuel-based heat, these new developments are requesting electric heat and vehicle charging to comply with State law and thus require much larger services. Delays in upgrading the system to support these interconnections, therefore, would hinder both the State's electrification goals and community economic development.

Urgent Project Criteria #3: Degree of Certainty – The Company's portfolio for Building Electrification includes projects with a high degree of certainty as to the location, timing, and magnitude of future load growth. As previously discussed, the Company's building electrification forecasts were based on credible data sources, research, and data-driven methods.

Location: Customer-driven projects drive system upgrades to enable new business requests for either new development, redevelopment, or electrifying heating in existing buildings. These locations are identified based on customer requests and feedback. For forecast-driven projects, the distribution feeder level building electrification analysis utilizes propensity modeling to identify areas where heating electrification takes place at a higher rate.

Timing / Magnitude: Sizing of customer-driven projects is based on customer information including load requests. The Company has additionally included projects in which a future customer need is identified and anticipated, in particular on areas of the system with rapid growth but limited capacity (*i.e.*, 5 kV distribution feeders) which will inevitably need to be upgraded to

meet state electrification goals. The Company's forecast considers timing and magnitude of load requirements based on factor described earlier in this filing.

Urgent Project Criteria #4: Consideration of Risks and Benefits – The Company's project portfolio for Building Electrification proactively manages risks by:

Appropriately Sizing Infrastructure: Over the last year, National Grid has been engaged in a national initiative led by the Electric Power Research Institute and the U.S. Department of Energy to identify planning criteria, distribution designs, and operational capabilities needed to right-size distribution systems throughout the decarbonization transition. As described in a 2024 whitepaper from the initiative, right-sizing involves deploying distribution capacity of the right scope, at the right time, and in the right place.[27] National Grid is actively implementing recommendations from the whitepaper, including: updating its distribution planning criteria to account for the impacts of electrification; implementing supply chain management best practices and exploring opportunities for standardization; engaging with stakeholders; continuously enhancing its data, planning tools, and forecasting methodology; and assessing and implementing non-wires alternatives and other flexible solutions to avoid, defer, or create a bridge-to-wires for upgrades. The Company has proposed digital investments to build on these capabilities in the NMPC Rate Case and will continue to evolve them to enhance customer benefit and right-size its solutions. The Company is additionally shifting towards standardizing at a 13.2 kV distribution voltage, which offers increased capacity and operational flexibility compared to 5 kV voltages. A granular, feeder-level forecast that looks out to 2050 and incorporates the impacts of a variety of distributed energy resources and loads, including heat pumps, was used to appropriately size the equipment and solutions being proposed.

Several of the proposed projects include the installation of pad mounted transformers and switchgears and in some cases boutique substations as a time-effective option to serve customers from the sub-transmission system in areas where adequate distribution capacity is not readily available nearby. This allows the Company to quickly meet the needs of large single-customer

[27] *See* EPRI White Paper, "Designing Distribution Systems to Enable Deep Decarbonization: An Introduction to Right-sizing the Distribution System to Meet Future Needs" (August 2024).

building-electrification loads without needing a costly and lengthy system upgrade to serve a single customer.

At the transmission and substation level, the risk of overbuilding is minimal, given the scale of the multi-decade transition necessary to meet clean energy goals, which is expected to involve a doubling or tripling of load. The proposed substation and transmission upgrades, such as Gardenville-Packard, will create upstream system capacity to serve multiple sources of load growth, such as from electric vehicles in addition to electric heating. This upstream capacity is needed regardless of where exactly the downstream load materializes. For instance, since multiple feeders are typically connected to a distribution substation, capacity intended for one feeder can instead be shifted to a neighboring line if load growth slows or accelerates on nearby or connected feeders.

Even in the event that load growth does not occur as quickly as expected, the system's reliability and resilience is enhanced by creating additional capacity for automated switching schemes such as Fault Location, Isolation, and Service Restoration to restore service between adjacent feeders through automated tie points. Additionally, the additional capacity increases the agility of the Company's response to emergent load requests by creating new flexibility for system reconfigurations to transfer load between assets.

Minimizing Risks of Delayed Action and Maximizing Benefits of Early Action: The Company's proposed portfolio of Urgent Upgrade Projects for Building Electrification prioritizes projects with existing customer requests or that are clear pre-requisites to broader electrification of a region, in line with State policy goals. This minimizes the risk of delaying customer building electrification projects, which is particularly important during the earlier stages of customer adoption. The Company considers non-wires alternatives and proposes innovative solutions such as boutique substations to quickly connect customers. Early action in the case of forecast-driven projects allows for the realization of GHG emission reductions and other benefits of building electrification projects sooner by reducing the time it takes to connect a new customer to the system.

D. Benefits of Proposed Projects for Building Electrification Projects

The Company's proposed portfolio of Urgent Upgrade Projects for Building Electrification is expected to deliver significant benefits:

- New distribution and transmission grid capacity to enable building electrification load growth, including from emergent customer requests, as well as forecasted load growth.
- Enabling electrification of new and redeveloped housing and commercial expansions, including affordable housing in disadvantaged communities.
- Supporting achievement of State legislative and regulatory goals and policies.
- Enabling emissions reductions associated with converting buildings to electric heating.
- Providing economic benefits from construction.
- Delivering multiple system benefits, including capacity for non-building load growth.

E. Other Considerations: Cost Allocation and Recovery Relating to Residential Multiple Occupancy Buildings

The Company has seen a significant increase of residential multiple occupancy building projects requiring 23-kV upgrades and/or line extensions, particularly in Western New York. The Company intends to pursue the default cost treatment under the Tariff for such projects, but includes additional information as to the Company's reasoning for cost treatment in Appendix 1 (see "Building Electrification: Sub-Transmission Multiple Occupancy Building Projects").

V. Application of Urgent Upgrade Criteria: Projects or Needs Not Included

The Company's Urgent Upgrade Projects Portfolio does not represent the full scale of grid capacity needs related to transportation and building electrification load growth. The Company has prioritized projects using the Urgent Project Criteria, and provides examples below of projects or needs that are not included in this portfolio as a result:

Urgent Project Criteria	**Example of How Criteria Are Applied**
Upgrade Required for Transportation or Building Electrification	The Company has received large economic-development driven load requests from new customers and existing customers looking to expand their operations. However, the customer's industrial processes/commercial operations are the primary driver of the load growth. The Company regularly receives load interconnection requests – the majority of these requests were not included in this portfolio. • *Result – Project not included in Urgent Portfolio*

Urgency Determination	Granular fleet studies have demonstrated significant charging capacity requirements in the Scotia area. An associated substation project would address this need. Spend is not expected to begin until the late 2020s or early 2030s, in part driven by dependency on a related transmission upgrade. • *Result – Project not included in Urgent Portfolio*
Degree of Certainty	"Greenfield" fast-charging sites or fleet depots can introduce significant load onto utility networks, but it is difficult to predict where they will go, as customers may "headroom hunt" to find favorable options for interconnection. The Company's portfolio instead includes locations where there are already fueling locations and significant vehicle traffic, and looks to right-size solutions to create sufficient capacity for greenfield operators to also interconnect in these high-traffic areas. • *Result – Projects not included in Urgent Portfolio*
Consideration of Risks and Benefits	The Company's proposed mobile battery energy storage program will provide a bridge-to-wires for charging load associated with vehicle traffic at the Guilderland Thruway Service Area. Additional capacity is needed to fully meet the long-term charging requirement. Existing constraints on the transmission system would make a full infrastructure solution approximately 40% more expensive than comparable projects included in this filing. The Company has deprioritized a full infrastructure solution in this area until such a time as a project can be right-sized to meet the charging requirement and be coordinated with other work addressing the transmission constraint. • *Result – Project not included in Urgent Portfolio*

The Company anticipates that these and other needs—whether identified now, or emerging from new load studies or customer requests—will need to be addressed expeditiously in the future. The Company recommends that utilities have the ability to propose additional projects for approval in this proceeding on an annual basis, including before the development of the long-term planning framework where justified by project urgency, and consistent with the criteria proposed by the JU.

VI. Cost Recovery

As noted above, the NMPC Rate Case included certain projects that are considered Urgent Upgrade Projects. Appendix 1, Exhibit 1 lists the projects that are included in the NMPC Rate Case for full transparency. Where Urgent Upgrade Projects are approved for recovery in this proceeding as opposed to the NMPC Rate Case, the Company proposes to defer the revenue requirement impacts associated with the Urgent Upgrade Projects and to recover those costs

through a surcharge (the "Proactive Planning Surcharge"). The revenue requirement impacts include incremental operating expenses, related taxes, return on capital investments (including initial and ongoing cost of removal), depreciation expense, and other costs approved by the Commission related to the Urgent Upgrade Projects. The Proactive Planning Surcharge will become effective annually on July 1st (surcharge collection period of July 1st through June 30th) and continue until the costs of the Urgent Upgrade Projects are recovered through base delivery rates.

The Proactive Planning Surcharge will recover the balance of the deferred operating costs incurred prior to the statement filing plus the actual and forecast revenue requirement associated with capital investments when placed into service (forecast revenue requirement through the end of the surcharge collection period or until capital investments are recovered through base delivery rates). The Proactive Planning Surcharge will reconcile any over/under collections annually, including carrying charges at the Company's pre-tax weighted average cost of capital ("WACC").[28] Approval of the Proactive Planning Surcharge will enable timely recovery of the costs of these projects that are necessary to meet customer requests for EV charging and building electrification, and address urgent needs as long lead-time infrastructure is designed, permitted, and constructed. Proposed draft tariff leaves for the surcharge are provided in the appendices of this filing.

The estimated revenue requirement associated with the Urgent Upgrade Project Portfolio is:

FY25: $1.2 million
FY26: $3.2 million
FY27: $9.2 million
FY28: $12.4 million
FY29: $20.2 million

[28] The JU Criteria Filing proposes that utilities "have the option to either 1) include 100% of Construction Work in Progress (CWIP) in rate base on a current basis (*i.e.*, as capital is spent), or 2) to accrue AFUDC until the project enters service." The Company's proposal herein employs the latter approach.

Table 3: Revenue Requirement for Urgent Upgrade Projects[29]

Niagara Mohawk Power Corporation d/b/a National Grid
Transportation and Building Electrification Urgent Upgrade Projects
Revenue Requirement FY25-FY29

	Year Ending March 31, 2025	Year Ending March 31, 2026	Year Ending March 31, 2027	Year Ending March 31, 2028	Year Ending March 31, 2029
Revenue Requirement					
Transportation + Building Electrification					
Average Rate Base	6,507,216	17,025,996	57,604,607	100,277,768	162,809,025
Pre-Tax ROR	7.66%	7.66%	7.66%	7.66%	7.66%
Return and Taxes	498,290	1,303,766	4,411,073	7,682,012	12,473,586
Book Depreciation	120,097	542,813	1,874,867	2,491,849	4,661,916
O&M Expense	554,163	1,374,347	2,741,932	1,600,566	925,498
Property Taxes	0	0	155,807	654,379	2,143,164
Total Annual Revenue Requirement	1,172,549	3,220,925	9,183,678	12,428,807	20,204,164

Table 3 above shows the estimated components of the annual revenue requirement.

VII. Conclusion

The Commission's initiating order in this proceeding recognizes the immediate infrastructure constraints preventing customer electrification, and the need for utilities to deploy urgent projects to remove those infrastructure-related barriers.

Utility infrastructure is a necessary precondition to enabling electrification and customer compliance with the State's enacted laws and regulations. The Company's projects continue the work of right-sizing its electric networks to accommodate the speed, scale, and location of load growth associated with market and policy-driven electrification. Ensuring infrastructure is ready ahead of need will be essential to achieving State objectives and complying with the CLCPA, providing confidence to electrifying customers, providing benefits to disadvantaged communities, supporting local businesses and commerce, and maximizing the value of grant funding and tax incentives related to transportation and heating decarbonization. The Company's projects provide these benefits and satisfy requirements set out in the JU Criteria Filing and in the Proactive Planning Order.

[29] Note: The Company used the currently approved Pre-Tax RoR (Company's weighted average cost of capital or WACC), as per Commission Order in Case 20-E-0380, to calculate the estimated revenue requirements. The Company anticipates that the WACC will be updated in the NMPC Rate Case.

Accordingly, Niagara Mohawk respectfully requests that the Commission: (i) find that the Company should continue or commence development of the Urgent Upgrade Projects included in this filing, and (ii) authorize recovery, including the proposed Proactive Planning Surcharge, for Urgent Upgrade Projects . To the extent practical, the Company respectfully requests a finding by March 1, 2025 to begin commencement of construction-related activities for urgent projects and minimize potential impacts associated with project delays.

National Grid
Urgent Upgrade Projects
Appendices

Appendix 1: Summary of Projects

Appendix 2: Draft Tariff Leaves for Proactive Planning Surcharge

Appendix 3: Stakeholder Input

Appendix 4: Project Data Sheets (Redacted)

Appendix 1: Summary of Projects

This appendix includes additional information on projects included in the Company's Urgent Upgrade Projects Portfolio, as well as the Company's consideration of alternatives, forecasting / load studies, and an exhibit (Exhibit 1) highlighting projects of overlap with the Company's rate case filing.

Projects are identified by primary driver (Transportation or Building Electrification) and project category (*e.g.*, I-90 System Capacity Upgrades). For each project category, the Company includes an assessment of how the projects included match the Urgent Project Criteria proposed in the JU Criteria Filing, as well as other considerations.

Portfolio-Wide Considerations: Project delivery for all projects is dependent on multiple factors, some of which are not fully within the Company's control, including things like permitting (*e.g.*, Article VII) or equipment lead-times. Equipment lead-times can inform whether certain projects are urgent (*e.g.*, due to long lead-time equipment like transformers), and impact the Company's delivery of approved projects (*e.g.*, if changes in lead-times alter the expected schedule for a project after approval).

The table below offers a snapshot of current lead-times for equipment.

Lead-Times for Select Equipment

Commodity	Typical Lead Time (Weeks)
Small Transformers < 12MVA	130 to 180
Med Transformers 12-100 MVA, 69KV to 230 KV	150 to 210
Large Transformers > 230KV	200 to 230
Control Houses	50 to 80
Circuit Breakers	35 to 104
Metal Clad Switch Gear	75 to 90
Tx / Dx Switches	45 to 60
Dx Transformers	52 to 104
Cable	28 to 52
Steel Structures	36 to 42
Distribution Wood Poles	4 to 8
Transmission Wood Poles	21 to 22
ACSR Conductor	16 to 20
OPGW	12 to 14
Voltage Regulators	28 to 52

The above table is the average lead time for major electrical equipment procurement as of the end of Q3 2024. Lead times are still subject to variations outside of the above range due to manufacture or raw material availability outside of National Grid's control.

Transportation Electrification Project Summaries

Transportation Electrification: I-90 System Capacity Upgrades

The Company identified a solution portfolio—five greenfield substations, short-run taps of 115 kV transmission lines, and new feeders built to locations of known and forthcoming spot loads—which will create an initial 100 MW of capacity to accommodate load-growth from LDV and MHDV fast-charging across approximately 300 miles of I-90. In the short and long-term, these upgrades will also create capacity for other beneficial electrification and load growth, as well as renewable generation or storage projects, surrounding the stations. Substation design was standardized and made to be 'expandable' to simplify development accommodate the spot loads as they grow in line with State electrification mandates.

When in service, the I-90 System Capacity Upgrades will:

- Initially create 40 MW of capacity in the Western division to accommodate load from vehicle traffic at highly traveled, bidirectional sites (Angola Thruway Service Area and a cluster of truck stops at Alleghany Road in Pembroke / Corfu). When fully built out with additional feeders, the two projects in the Western division will create a total of 80 MW of capacity.

- Initially create 40 MW of capacity in the Central division to accommodate load from vehicle traffic at the eastbound DeWitt Thruway Service Area, along with adjacent fleet and other load growth associated with the airport, and the westbound Chittenango Thruway Service Area. When fully built out with additional feeders the two projects in the Central division will create a total of 80 MW of capacity. The substation at Moore Road will facilitate interconnection and delivery of grid-scale renewable development.

- Initially create 20 MW of capacity in the Eastern division to accommodate load from vehicle traffic at the westbound Pattersonville Thruway Service Area. The eastbound Guilderland Thruway Service Area was prioritized for an alternative solution (see I-90 Mobile Battery Energy Storage) to avoid overloading the adjacent 115 kV line (which would have triggered multiple miles of reconductoring of that circuit). When fully built out with additional feeders, the Pattersonville project in the Eastern division will create a total of 40 MW of capacity.

In total, the projects were designed to create an initial 100 MW of capacity that can be expanded to accommodate an incremental 100 MW of load growth.

Urgent Project Criteria #1 – Upgrade Required for Transportation or Building Electrification: The I-90 System Capacity Upgrades address load growth from EV fast-charging at high-traffic locations across 300 miles of I-90.

The Company identified this need through a publicly released granular load study, the Electric Highways Study. The Electric Highways Study identified two distinct, but related, areas of need related to fast-charging on I-90 in the base study scenario:

- ***The corridor-wide capacity need*** – Accommodating 100+ MW of nameplate charging growth every 5 years across 300 miles of I-90 (this analysis includes charging requirements from over 20 high-traffic locations). Addressing this need additionally

requires consideration of reasonable network coverage (i.e., ensuring capacity is created to enable travel along the entire corridor), as well as ensuring adequate capacity is available to serve light-duty, medium-duty, and heavy-duty vehicle traffic in each direction.

- ***Site-specific capacity needs*** – Accommodating megawatt-scale annual growth in total charging requirements at high-traffic corridor sites. Addressing this need additionally requires consideration of other load growth or system requirements at each specific location.

Because transportation is a network and the area of focus was corridor charging, grid capacity created at one location would be expected to impact grid capacity requirements at other locations on the same stretch of corridor. Over a year before the Proactive Planning Proceeding commenced, the Company filtered projects through multiple criteria to identify the highest-priority, multi-value sites which would enable the Company to meet the corridor-wide need. Those criteria included proximity to existing distribution or transmission lines and not triggering large transmission reconductoring projects, near and long-term charging capacity required, near solar or storage developer interest, charger utilization, existing and forecast capacity on the distribution line, and known customer electrification plans in the area. Further discussion on the prioritization process is included under Urgent Project Criteria #4.

As a result, five locations were prioritized for a system capacity upgrade: Angola Service Plaza, Alleghany Road, DeWitt Service Plaza (Moore Road), Chittenango Service Plaza (Gee Road), and Pattersonville Service Plaza and area. Through its granular load study, the Company evaluated charging capacity requirements at each location for LDV and MHDVs, including a one-megawatt charging capability[1] scenario for MHDVs. The Company additionally evaluated constraints to serving spot load at each location, such as thermal or voltage limitations or new load requests not reflected in the forecast or hosting capacity maps.

Results from the Electric Highways Study are included below, along with a discussion of current conditions at each location.

Angola: Charging Capacity Requirements (MW)[2] from Electric Highways Study					
Vehicle Class	**2025**	**2030**	**2035**	**2040**	**2045**
LDV[3]	*2.1*	*4.6*	*8.1*	*8.4*	*9.1*
MHDV *350-kW Scenario*	*2.5*	*5.9*	*10.5*	*18.9*	*24.2*
Total: LDV + MHDV ***350 kW Scenario***	***4.6***	***10.5***	***18.6***	***27.3***	***33.3***
MHDV *1-MW Scenario*	*5*	*10*	*18*	*28*	*34*
Total: LDV + MHDV ***1-MW MHDV Scenario***	***7.1***	***14.6***	***26.1***	***36.4***	***43.1***

[1] The Company received feedback from the U.S. Department of Energy that 3 MW chargers will soon be available for the MHDV sector.
[2] All results are nameplate and sized to meet annual peak demand. See full study (available at https://www.nationalgrid.com/document/148616/download) for more details.
[3] Figures are rounded and from a given model run.

Conditions at Angola: Nameplate EV fast-charging requirements from vehicles at the Angola service area in 2030 exceed the rating of the entire feeder serving the service area. Currently, there is limited ability to serve fast charging at this location due to constraints on both the feeder and at the station transformer. The most immediate constraint to serving additional load at the Travel Plaza is voltage limitations on the feeder. National Grid's request includes a reconductoring project to address this immediate concern and a substation to provide long-term capacity at the magnitude needed.

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Alleghany Road: Charging Capacity Requirements (MW) from Electric Highways Study					
Vehicle Class	**2025**	**2030**	**2035**	**2040**	**2045**
LDV	*2.8*	*4.6*	*7*	*9.1*	*9.1*
MHDV *350-kW Scenario*	*2.8*	*6.3*	*13.7*	*22*	*29*
Total: LDV + MHDV[4] ***350 kW Scenario***	***5.6***	***10.9***	***20.7***	***31.1***	***38.1***
MHDV *1-MW Scenario*	*5*	*12*	*22*	*31*	*38*
Total: LDV + MHDV ***1-MW MHDV Scenario***	***7.8***	***16.6***	***29***	***40.1***	***47.1***

Conditions at Alleghany Road: Capacity required to meet fast-charging requirements from vehicles at the Alleghany Road trucking hub in 2030 exceeds the rating of the entire feeder serving the locations. There was approximately 5 MVA of capacity on the current feeder; however, recent load requests, including an initial request for service of chargers to serve LDVs, has exhausted nearly all the feeder capacity. In addition, two new and large logistics warehouses which will require a sizeable amount of load are in construction within a quarter mile of the identified service areas. Those warehouses represent significant near, and long-term load growth. This very rapid disappearance of available electric capacity illustrates both the challenges of traditional ways of accommodating spot loads, and also the opportunity that proactive planning provides See the project description sheet for additional detail on this evolving area.

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[4] Charging requirements from Electric Highways Study are presented as nameplate.

DeWitt Service Area: Charging Capacity Requirements (MW) from Electric Highways Study					
Vehicle Class	**2025**	**2030**	**2035**	**2040**	**2045**
LDV	*1.4*	*2.5*	*3.5*	*4.6*	*4.9*
MHDV *350-kW Scenario*	*0.7*	*2.4*	*4.2*	*6.3*	*7.7*
Total: LDV + MHDV ***350 kW Scenario***	***2.1***	***4.9***	***7.7***	***10.9***	***12.6***
MHDV *1-MW Scenario*	*3*	*4*	*7*	*9*	*12*
Total: LDV + MHDV ***1-MW MHDV Scenario***	***4.3***	***6.5***	***10.5***	***13.6***	***16.9***

Conditions at DeWitt (Area for Proposed Moore Road Substation in Syracuse): Moore Road is a proposed greenfield station in Syracuse, which would address fast-charging load at the DeWitt Service Area and charging needs of surrounding vehicle fleets. The current station (East Molloy) and broader area will need to support not only the fast-charging at the DeWitt Service Area, but also vehicle fleet electrification, including from fleets immediately adjacent to the Thruway Service Area. See the Project Data Sheet for further discussion of constraints at the location.

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Chittenango Service Area: Charging Capacity Requirements (MW) from Electric Highways Study					
Vehicle Class	**2025**	**2030**	**2035**	**2040**	**2045**
LDV	*1.1*	*2.5*	*3.9*	*4.6*	*3.9*
MHDV *350-kW Scenario*	*1*	*2.1*	*3.5*	*5.2*	*7*
Total: LDV + MHDV ***350 kW Scenario***	***2.1***	***4.6***	***7.4***	***9.8***	***10.9***
MHDV *1-MW Scenario*	*2*	*4*	*7*	*9*	*11*
Total: LDV + MHDV ***1-MW MHDV Scenario***	***3***	***6.5***	***10.9***	***13.6***	***14.9***

Conditions at Chittenango Service Area (Area for Gee Road Substation): The current feeder and station can presently accommodate approximately 3 MVA of load deliverable to the spot load. Charging capacity requirements would exceed this by 2030 in the 350kW and 1MW scenarios. The distribution feeders serving this site are significantly constrained. The distribution feeders extend over 10 circuit miles before arriving at the travel plaza, which is at the very end of the feeder. Beyond the feeder limitations, the forecasted load at the travel plaza will outgrow the available capacity at the Bridgeport substation between 2030 and 2035. The loading on the feeder and the distance present significant constraints to service. The area is seeing a growth of

distributed renewable generation resources, which will also benefit from the construction of a greenfield substation. The substation creates an 'on ramp' for renewables seeking to move power up to the 115 kV system, avoiding the 'bottling' of that power on the local distribution system, which causes potential curtailment during certain system conditions.

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Pattersonville: Charging Capacity Requirements (MW) from Electric Highways Study					
Vehicle Class	**2025**	**2030**	**2035**	**2040**	**2045**
LDV	*1.1*	*1.8*	*3.5*	*3.5*	*3.5*
MHDV *350-kW Scenario*	*1*	*2.8*	*4.9*	*8.8*	*11.9*
Total: LDV + MHDV ***350 kW Scenario***	***2.1***	***4.6***	***8.4***	***12.3***	***15.4***
MHDV *1-MW Scenario*	*2*	*5*	*8*	*14*	*17*
Total: LDV + MHDV ***1-MW MHDV Scenario***	***3***	***6.8***	***11.5***	***17.5***	***20.5***

Conditions at Pattersonville: With the addition of voltage regulators proposed as part of this filing as a short-term solution, the current feeder and station can presently accommodate approximately 5 MVA of load deliverable to the spot load, compared to approximately 5 MW of charging capacity requirement in 2030 in the 350-kW scenario and 6.8 MW in the 1-MW scenario. A more comprehensive solution is needed to address the vehicle electrification load, growing development of distributed generation, and general load growth in the greater Amsterdam area. The proposed solution involves the construction of a new substation to support the service plaza and growing load in the area. EV and building electrification in the Amsterdam area can more easily be accommodated by switching the service plaza charging loads, and loads south of I-90 on to the new Pattersonville substation. Given the timeline associated with building a greenfield substation, construction must begin immediately. See the Pattersonville PDS for more information on system conditions in the larger area.

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Guilderland: Charging Capacity Requirements (MW) from Electric Highways Study					
Vehicle Class	**2025**	**2030**	**2035**	**2040**	**2045**
LDV	*1.4*	*2.5*	*4.6*	*4.9*	*6.3*
MHDV *350-kW Scenario*	*1.1*	*3.1*	*6.3*	*9.5*	*12.6*
Total: LDV + MHDV ***350 kW Scenario***	***2.5***	***5.6***	***10.9***	***14.4***	***18.9***
MHDV *1-MW Scenario*	*2*	*5*	*9*	*13*	*17*
Total: LDV + MHDV ***1-MW MHDV Scenario***	***3.4***	***7.5***	***13.6***	***17.9***	***23.3***

Constraints at Guilderland: The current feeder and station can presently accommodate approximately 2 MVA of load deliverable to the spot load, compared to approximately 5.6 MW of charging capacity requirement in 2030 in the 350-kW scenario and 7.5 MW in the 1-MW scenario. The most immediate limiting element to delivering additional capacity to the site is voltage limitations on the underground feeder currently serving the travel plaza. Significant constraints upstream of the feeder, including on the transmission circuit, will prevent the full charging capacity from being served.

Both Guilderland and Pattersonville are near the end of very long feeder runs. The greater Rotterdam/Scotia area which these two Thruway Service Plazas are west of is a location that has seen recent load growth. In the Company's electric load forecast in the 2028 through 2032 timeframe there is significant EV and building load growth that will overload the substations serving that area. Switching loads in the Amsterdam/Pattersonville/Guilderland area to a new substation will relieve pressure on the Rotterdam/Scotia distribution stations, freeing up capacity for the very initial phases of electrification of that area.

Note: The Castleton-on-Hudson project detailed later in this appendix also serves traffic on I-90, but is off the Thruway controlled portion of the Interstate.

Urgent Project Criteria #2 – Urgency Determination: Accommodating the 100- MW growth across I-90 between 2025 and 2030 will require system capacity investments in long-lead time infrastructure, including substations. New substations and feeders would enable the Company to meet the forecast 5-10 MW of charging capacity requirement at each location in 2030, as well as growth through 2035 (when charging requirement at each of Alleghany Road and Angola is approximately 20 MW).

A substation can take 4-8 years to design, procure materials for, permit, and construct. Equipment lead-times have increased, and resourcing and permitting create an additional dependency increasing the variability in project delivery timelines. Effectively, if National Grid started construction-related activities (including final engineering and design, procurement, et cetera) for a substation project today, it would be reasonable to assume that project would not be completed until the end of 2030, and in some cases until 2032 (for instance, if there were a permitting delay associated with an Article VII line to which the substation interconnects).

As a result, even if construction-related activities began today, there is a substantial risk that necessary infrastructure will be delayed in meeting the full 2030 need on both the corridor-wide capacity need and at specific high-traffic corridor sites. Beginning construction-related activities as soon as possible, such as down-payments for long lead-time equipment, will reduce this risk. Angola and Alleghany Road additionally have immediate constraints before 2026, further reinforcing their urgency.

To demonstrate this criteria in practice, the Company provides an example from development of the Angola substation (excluding distribution feeder or transmission line work). In Fiscal Year 26 (April 2025-March 2026), the Company expects expenditures of approximately $1 million for activities including milestone payments for long-lead materials. In Fiscal Year 27 (April 2026-March 2027), the Company expects expenditures of approximately $1 million for activities including an engineering MSA to begin final design. Additionally, permitting activities for Angola would be expected to begin in 2025/2026, as the project is dependent on an Article VII project.

See Project Data Sheets for expected spend profiles for the project (and associated Construction-Related Activities).

Urgent Project Criteria #3 – Degree of Certainty: The proposed I-90 System Capacity Upgrades include projects with a higher degree of certainty as to the location, timing, and magnitude of future load requirements. For more detail on the Company's granular load study methodology, see the discussion at the end of this appendix. In a November 2023 technical conference, National Grid and Con Edison presented as to how their granular load study methodology aligned on assumptions discussed below.[5]

Location: As detailed in the main body of the petition, the Company's methodology for projecting load growth in the Electric Highways Study (provides load requirements for all I-90 locations) and granular fleet cluster studies (provides additional load requirements for the Moore Road project area) uses actual vehicle data, including vehicle telematics, as well as modeling of charging behavior for individual vehicle sub-classes. The proposed projects have a high degree of granularity as to where vehicles stop today, and where charging will be needed in the future.

The Company additionally used qualitative factors to prioritize locations with a high degree of certainty. Four of the five proposed projects for I-90 System Capacity Upgrades address vehicle traffic at New York State Thruway Authority service areas, which will serve significant vehicle traffic for decades. The fifth project at Alleghany Road addresses vehicle traffic at a cluster of three truck stops and passenger vehicle fueling areas. This truck stop location is included as a high-priority truck stop for charging deployment in the federal Zero-Emission Freight Corridor Strategy released earlier this year.[6] National Grid has consulted with all fast-charging site operators at project locations, including the New York State Thruway Authority. See Appendix 3 for additional information from site operators.

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[5] Case 23-E-0070. Proceeding on the Motion of the Commission to Address Barriers to Medium- and Heavy-Duty Electric Vehicle Charging Infrastructure. National Grid and Con Edison Presentation – November 2, 2023 Technical Conference. https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={D014A58B-0000-C635-BB67-63DF8C34A7FF}

[6] National Zero-Emission Freight Corridor Strategy. Joint Office of Energy and Transportation, 2024. https://driveelectric.gov/files/zef-corridor-strategy.pdf

I-90 is additionally a high-confidence corridor. The New York portion of I-90 is a highly traveled section of the National Highway Freight Network, and the entire I-90 corridor in New York was designated as a national freight electric vehicle corridor by FHWA.[7]

Timing and Magnitude: To forecast the timing and magnitude of electric vehicle charging capacity requirements, the Company modeled granular EV load under a scenario in which customers were able to comply with the ACC-II and ACT regulations, and where those regulations met entirely via adoption of EV as ZEV. This approach allows the Company to forecast customer requirements associated with achieving State mandates and regulations. This informs both the timing of needs (*e.g.*, annual sales targets for ZEV) and the magnitude of needs (*e.g.*, total vehicle stock converted to ZEV).

The Company's granular load studies use site-specific vehicle data to provide a greater level of visibility to site-specific charging requirements. The Electric Highways Study breaks out results for LDV and MHDV, and includes a 1- MW charging scenario for MHDV to capture the magnitude of potential need. The fleet cluster studies seek to right-size individual charger capacity for different vehicle subclasses (i.e., use different charger nameplates for different vehicle types), and include grounded assumptions as to the number of chargers for each MHDV at a fleet depot. The Company has published its methodology for its granular load studies to provide transparency as to its approach, which incorporates best practices and expertise of partners such as RMI, CALSTART, Geotab, Stable Auto, and Hitachi Energy.

The Company has used site operator input to further evaluate potential timing and magnitude of needs, and on potential charging installations at specific sites. the Company has consulted with the New York State Thruway Authority on the layout of charging infrastructure, and attendant equipment at specific sites to understand the feasibility of meeting the forecasted charging needs at each site. The New York State Thruway Authority's pending grant application would install over 2 MW of MHDV charging, including a one-megawatt charger, at each of the proposed Thruway-operated project locations (Angola, DeWitt/Moore Road, Chittenango/Gee Road, and Pattersonville; in addition to Guilderland, which is prioritized for an MBES project). This provides additional certainty as to the Company's granular forecast results.

Stranded Asset Risk: Initial LDV charging deployments are installed or expected to be installed (including current Make Ready requests) at all I-90 locations included in this filing. The Company prioritized locations with both LDV and MHDV charging needs. The Company's proposal additionally includes pad mounted transformers which would step down voltage at the fast-charging site to the voltage preferred by the customer. If the NY PSC's Make Ready Programs continue to be funded, the costs of the pad mounted transformers could alternatively be covered under eligible costs of those programs, and would not be included in final project costs.

All projects would be expected and available to provide capacity to other customers in the area. The Company intends to continue consulting with customers and providing information about future and available capacity to ensure grid infrastructure is used and utilized.[8] This could include

[7] For more detail, see:
https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/freight_ev_corridors/?_gl=1*1qfahi7*_ga*MTQwNDYwNzQwOC4xNzE3MDM0OTU5*_ga_VW1SFWJKBB*MTcyOTUzNTI2Ny40LjEuMTcyOTUzNTM1NS4wLjAuMA

[8] While following appropriate information-sharing regulations and requirements.

targeted stakeholder efforts to make customers aware of newly created Areas of Capacity for EV charging (see Criteria #4 for a discussion of "Areas of Capacity").

Urgent Project Criteria #4 – Consideration of Risks and Benefits:

Appropriately Sizing Solutions: Projects are designed to meet needs in 2030 while effectively allowing for future load growth.

The Company developed a replicable, scalable approach for capacity buildout on I-90 by using a standardized substation design, with the ability to expand capacity in phases as charging requirements grow at each location in 2030 and beyond. This approach avoids building undersized infrastructure to meet near-term requirements that is unsuited to meet medium-term or long-term requirements. The Company prioritized locations where transmission system capacity is available, upgrades are already planned, and distance and routing to the 115 kV system was shortest and easiest.

The Company sized infrastructure to address both LDV and MHDV charging needs at the project locations, which each include LDV and MHDV fueling and significant LDV and MHDV vehicle traffic. LDV and MHDV fueling typically occurs separately and is often provided by different fueling providers. While the Electric Highways Study used a 350-kilowatt charging base scenario, the 1-MW scenario included in the study provided additional guidance that creating optionality to expand capacity (as the solution design does) would reduce the risk of underbuilding. The Company additionally seeks to meet immediate need at several constrained locations through the Mobile Battery Energy Storage investments, which create a bridge-to-wires at project locations while substations and feeders are built out. These batteries could then be mobilized to provide capacity at other locations.

The Company's phased, expandable substation design additionally addresses another risk, which is that, due to economies of scale, EV charging deployment at the proposed project sites is *higher* than the granular load forecast. The Company regularly experiences forms of "capacity headroom hunting" on its system from the early stages of EV charging deployment. A similar phenomenon could occur with system capacity project locations. The Company's design implements a standardized approach to infrastructure (such as a template substation design with a 40 MVA transformer) to address this potential for capacity growth, and would accommodate a scenario in which additional charging operators seek to interconnect near proposed project location.

In the Joint Utilities' comments in the MHDV Proceeding, the utilities introduced the concept of "Areas of Capacity," or locations where distribution grid infrastructure can accommodate EV charging load growth.[9] The Company's proposed I-90 System Capacity Upgrades would create these Areas of Capacity at major hubs along I-90 and create room to "absorb" charging requirements along the entire corridor (with the exception of eastbound traffic around the Guilderland Thruway Service Area, which will remain an area of need). This may have an additional benefit of deferring the need for "piecemeal" distribution upgrades at other locations near the proposed projects.

Risks of Delayed Action/Inaction and Benefits of Early Action: The Company has prioritized locations where Construction-Related Activities must begin imminently, either to meet the

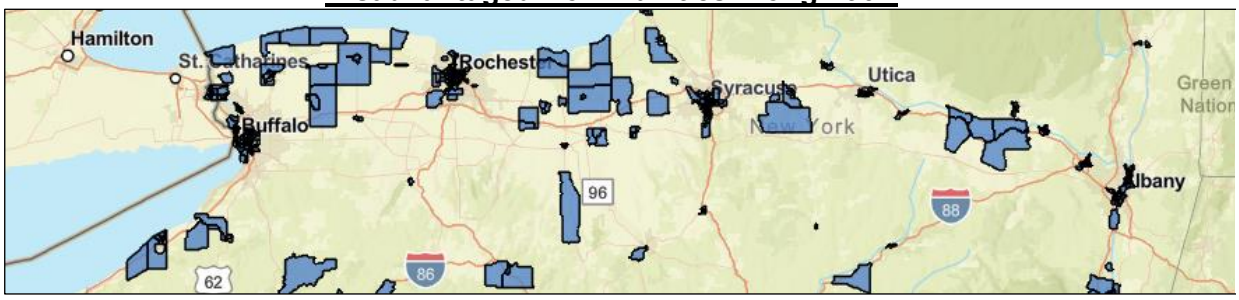
[9] MHDV Proceeding, Joint Utilities' Comments on the Public Service Commission's Order Instituting Proceeding and Soliciting Comments (filed June 5, 2023), (Joint Utilities' Initial Comments), p. 11.

charging capacity requirement in 2030 or to minimize the amount of time in which grid infrastructure cannot serve the charging capacity requirement.

The Electric Highways Study and related analyses demonstrate that, without appropriate creation of grid capacity, there exists a substantial potential for charging curtailment and/or insufficient capacity at proposed project sites by 2030, or before. This would either result in curtailment and queuing for charging during high-traffic periods on I-90 (*e.g.*, after Thanksgiving), or prevent charging from being deployed at the pace needed to meet customer needs. The Company proposes an alternative bridge-to-wires solution—mobile battery energy storage—at three constrained locations, which would be expected to reduce the number of curtailment periods across locations.

DAC Impact: DACs are present along the 300 miles of I-90 addressed by these projects (see below). These projects will support DACs along I-90 by enabling electrification of vehicles traveling along the corridor, reducing pollution along I-90. Communities which are close to highway corridors are prone to higher rates of asthma. Projects located in DACs will result in greater capacity for area electrification, support reductions in emissions, and deliver economic benefits related to construction. It is important to clarify that identification of DAC and impacts on those areas is critical. Additionally, the impacts of emissions from surface transportation are borne by every community in NY and the greater region. Vehicles that traverse New York's roads and Interstates contribute to this problem today, and will continue to do so in the coming years. Enabling electrification of those corridors will bestow the benefit of fewer emissions on all residents of New York and the region. Additional benefits for DACs include less vehicle noise from idling trucks at Thruway Service Plazas, and avoiding noise from engine brakes employed on traditional combustion trucks.

Disadvantaged Communities Along I-90[10]



Other Considerations: In DPS staff's rebuttal testimony on National Grid's pending rate case, staff testified that these projects, which were included in the rate filing, would be "better suited for implementation via the proactive planning process."[11] The Company includes the I-90 System Capacity Projects here for consideration if the projects are not approved through the NMPC Rate Case.

The Company presents an updated project delivery schedule for these projects below. Construction-Related Activities for these projects should begin as soon as is feasible to complete construction by the end of 2030. The Company would seek to complete each substation project

[10] NYSERDA, https://www.nyserda.ny.gov/ny/Disadvantaged-Communities
[11] NMPC Rate Case, Department of Public Service SEIOP Testimony (Sept. 26, 2024), pp 56-57.

as quickly as is feasible, which could result in some projects being completed earlier than the proposed schedule and some projects being completed later than the proposed schedule contingent on dependencies.

Estimated Expenditure ($M): I-90 System Capacity Upgrades

Project	FY26	FY27	FY28	FY29	FY30	FY31
Angola	$1.4	$1.6	$4.4	$17.3	$16.7	$2.0
Alleghany	$2.5	$1.3	$7.2	$16.2	$13.7	$2.0
Moore Road (DeWitt)	$2.5	$1.3	$7.8	$18.0	$13.4	$2.3
Gee Road (Chittenango)	$2.5	$1.3	$7.1	$21.3	$8.8	$2.0
Pattersonville	$1.4	$1.5	$4.5	$17.2	$14.2	$3.3
Total: I-90 System Capacity Upgrades	**$10.5**	**$7.0**	**$30.9**	**$90.1**	**$66.7**	**$11.5**

Note: All estimates are +200% / -50%. Refer to project data sheets for more detail.

Transportation Electrification (Initial Deployment): Mobile Battery Energy Storage

This proposal will initially complement the I-90 System Capacity Upgrades by procuring a fleet of three mobile battery energy storage units (mobile BES) as a bridge-to-wires at electric capacity constrained highway locations. These mobile BES would be operated as Utility Integrated Storage[12] (UIS) to create near-term capacity as long-term infrastructure upgrades are developed. Since these units are mobile, they could be owned by the company as a utility asset and used for other locations or other needs once long-term infrastructure upgrades are completed.

Additional details about alternatives evaluation for the broader Urgent Upgrade Projects Portfolio and relevant for this investment area are included further in this appendix.

Urgent Project Criteria #1 – Upgrade Required to Enable Transportation or Building Electrification:
The Company initially identified these projects to serve near-term charging needs at three high-priority corridor charging locations on I-90: Angola, Chittenango, and Guilderland. Results from granular charging studies of EV charging requirements at these locations are included in the I-90 System Capacity Upgrades write-up.

Due to the fast-paced rate of interconnections and short timelines, long-term capital solutions—such as the substations included in the I-90 System Capacity Upgrades portfolio—may not be able to meet the timelines to offer enough incremental capacity required of the load requests and

[12] The term "Utility Integrated Storage" or UIS refers to energy storage owned and operated by a utility for non-market purposes to provide equivalent non-market T&D services to utility wired infrastructure. This term was defined in the "*Joint Utilities Study of Non-Market Transmission and Distribution Energy Storage Use Cases and Related Process Proposals*" filing submitted in Case 18-E-0130 on October 29, 2024. Note that the Bridge-to-Wires use case for energy storage, including to address electrification of transportation, is also detailed in this filing.

load projections for an EV load growth hotspot. Additionally, interim capacity is then required to ensure timely interconnections of EV charging consistent with the load study projections.

These units will serve as bridge-to-wires or permanent solutions and enable building and transportation electrification interconnections on an accelerated timeline. Initial projects were prioritized at locations where a specific interconnection is required to meet the identified planning constraint caused by electrification interconnections. Mobile storage, in particular, was chosen in order to utilize the asset at multiple locations, as the storage asset's lifespan is longer than interim load relief required for the identified locations.

Once the initial need from EV charging is met, these mobile battery energy storage units can be redeployed to address other emerging constraints related to electrification load growth, such as at Allegheny Road where recent requests have begun to exhaust feeder capacity which could otherwise serve fast-charging interconnections.

Urgent Project Criteria #2 – Urgency Determination: The three areas targeted for initial deployment of the mobile battery storage units—Angola, Chittenango, and Guilderland—all have immediate and near-term constraints which will prevent the Company from accommodating charging interconnection at high-traffic highway locations.

Capital solutions have been scoped for these expected overloads caused by electrification, but timelines for infrastructure development could delay interconnection timelines or otherwise cause a risk of overload expected under forecasting scenarios (Angola and Chittenango),or present higher cost compared to other sites due to transmission system constraints (Guilderland). Electrification load growth can emerge and/or accelerate quickly at specific locations, emphasizing why a bridge-to-wires solution is urgently needed.

In order to interconnect mobile battery energy storage units to meet selected or forecast overloads, units must be competitively procured as soon as is practical. If feasible, procuring all three units at once is likely to provide additional benefit in the procurement process.

Urgent Project Criteria #3 – Degree of Certainty:

Location: As detailed in the main body of the petition, the Company's methodology for projecting load growth in the Electric Highways Study (which provides load requirements for all I-90 locations) uses actual vehicle data, including vehicle telematics, as well as sophisticated modeling of charging behavior for individual vehicle sub-classes. The proposed projects have a high degree of granularity as to where vehicles stop today, and where charging will be needed in the future. Because these projects are mobile bridge-to-wires, they additionally will include a near-term prioritization based on emerging site conditions.

The Company has additionally consulted with the New York State Thruway Authority about the usage of mobile energy storage at each of these locations. Further analysis will be conducted proactively to ensure these mobile units may be redeployed within locations where overloads are priority.

Timing and Magnitude: Based on the Electric Highways Study methodology (detailed above), the Company has prioritized initial locations with a near-term constraint, i.e. locations which are unlikely to be able to accommodate the timing and magnitude projected charging capacity requirement, or current / near-term interconnection requests.

Stranded Asset Risk: The Company has consulted with the New York State Thruway Authority about the usage of mobile energy storage at each of these locations. Aside from enabling EV charging as proposed, a mobile energy storage unit can perform a variety of use cases, including at different locations, throughout its lifetime. The Company intends to deploy these units as non-market bridge-to-wires solutions and recognizes these units will likely have significant value after the initial deployment.

Mobile BESes are transportable by nature and because of their modularity, they can be operated in tandem if it is necessary to scale up or down based on the characteristics of the use case. The Company has identified additional use cases for the mobile BESes, based on its understanding of its current system needs and through consultation with mobile energy storage OEMs, research institutes, and other utilities.

The following are appropriate examples of the potential secondary uses that are envisioned: peak shaving on constrained utility equipment in areas of the service territory that do not have enough infrastructure to supply seasonal increase in load; peak load management on feeders and adjacent feeders where a mobile energy storage can be deployed to alleviate contingencies; supplying simultaneously active and reactive power to support heavily loaded feeders and long feeders; resiliency and reliability enhancement during planned and unplanned outages by providing backup power supply for critical customers and life-dependent facilities; operating as a microgrid to provide resiliency during a contingency; acting as back-up power (in place of polluting and noisy traditional standby generators) for critical infrastructure such as a hospital or nursing home; deployed in lieu of fossil fuel based generators to provide back-up power for substation controls, protection equipment, and communications; and addressing charging needs for National Grid's EV fleet during storm restoration and/or during daily business.

There are certain design considerations to afford optionality that National Grid will further define through a forthcoming study. There are certain design considerations to afford optionality that National Grid will further define through the above-mentioned study. Location-dependent limited incremental CAPEX or OPEX may be required to redeploy the units to a secondary use case. The Company would conduct site-specific feasibility studies to better understand the incremental costs for the redeployment of the mobile battery energy storage units.

Urgent Project Criteria #4 – Consideration of Risks and Benefits: Due to the unique ability to move these assets from location to location, right-sizing will be conducted by interconnecting the Mobile Storage Units to locations of highest priority. Analysis of need required will be conducted on an ongoing basis to assess actualized loading and updated forecasting and or/customer requests. System constraints caused by electrification will be prioritized on urgency and certainty.

In doing so, these projects will help address risks related to under-sizing or over-sizing by addressing near-term needs with a temporary solution while allowing development of an appropriate long-term upgrade. This will also minimize risks related to delayed action by creating near-term capacity for electrification.

DAC Impact: Similar to the rest of projects within this petition, the Mobile Energy Storage projects will look to support DACs, depending on locations of interconnection and assets supported. By supporting beneficial electrification along the I-90 corridor, these projects are expected to support reduction of pollution impacting communities.

Other Considerations: In DPS staff's rebuttal testimony on National Grid's pending rate case, staff testified that these projects, which were included in the rate filing, would be "better suited for implementation via the proactive planning process."[13] The Company includes the Mobile BES Projects here for consideration if the projects are not approved through the NMPC Rate Case.

The expected investment shown in Table 3 is planned to enable December 2026 in-service dates for the projects but will be informed through by an RFP process and subsequent vendor responses. The in-service dates will be dependent on vendor capacity to deliver and the Company expects that the timeline will be updated after the completion of the RFP process.

In addition, the company does not have a standard process for integrating 3rd party temporary and mobile solutions. Therefore, a utility-owned mobile storage site can be more efficiently integrated into the Company's infrastructure for these three locations. However, the Company's prioritization of site identification is still ongoing, and if alternative locations are instead desired to be pursued, the solutions proposed will ensure assessment of solution assessments and will be agnostic of ownership. At Angola and Chittenango, an infrastructure project is identified and proposed in this filing. At Guilderland, a future project would be considered when transmission constraints are alleviated.

Estimated Expenditure ($M): Mobile Battery Energy Storage[14]

Projects	FY26	FY27	FY28
Total: Mobile Battery Energy Storage	$18.6	$1.0	$1.0

Transportation Electrification: Off-Thruway, I-81, and I-87 Capacity Projects

The Off-Thruway Capacity projects were designed and identified by National Grid to address vehicle charging load growth identified through granular forecast studies completed by National Grid and cross-referenced with other resources. These projects combine to complement the Company's I-90 System Capacity Upgrades, supporting statewide charging network development across major corridors and vehicle fleet clusters in the Company's service territory. These projects will support electrification of passenger vehicles and medium- and heavy-duty fleet vehicles, and other electrification needs in these areas.

Urgent Project Criteria #1 – Upgrade Required for Transportation or Building Electrification:

To identify the projects in this portfolio, National Grid utilized a variety of internal and external sources and studies to both validate the need for project development and its timing.

[13] NMPC Rate Case, Department of Public Service SEIOP Testimony (Sept. 26, 2024), pp 56-57.
[14] O&M expense is necessary to safely and reliably operate these units. Estimates for Battery O&M expenses are not included in above Table but are part of the NMPC Rate Case filing. Detail can be found in the Rebuttal Testimony of the Electric Infrastructure and Operations Panel Exhibit (EIOP-12R), Summary of Known and Measurable O&M Changes, submitted October 18, 2024.

- *Electric Highway Study* – In addition to modeling charging capacity required on the New York Thruway, the study analyzed the charging capacity requirement at 20 sites on other highways in New York State, namely I-81 and I-87. These load curves also demonstrated the importance of right-sizing upgrades to serve vehicle charging related load at sites on other major corridors across National Grid's service territory. The four travel plaza or truck stop locations chosen all showed significant charging capacity requirements.

- *Granular Fleet Cluster Studies* – Using fleet depot study methodology developed with Hitachi Energy, the Company performed granular studies of fleet "cluster" locations, including in Wilton and Syracuse which informed the charging requirements for Cortland, Castleton-on-Hudson, and Watertown projects. The fleet cluster studies forecast charger capacity for different vehicle subclasses and industry types and included grounded assumptions as to the number of chargers for each MHDV at a fleet depot.

- *EPRI's EV2Scale* – National Grid used the Electric Power Research Institute's (EPRI) EVs2Scale eRoadMAP tool as another way to validate our study data. With this public tool, which was developed by EPRI in conjunction with key stakeholders in vehicle electrification (including utilities like National Grid), users can see forecast load growth from vehicle charging over time. This tool does not currently capture every single vehicle in an area but provides fairly granular, and broad nationwide coverage, and customer supplied information which the Company used to prioritize "cluster" areas for more granular load studies. Those studies reflect a greater level of visibility into specific depots and/or vehicle counts.

- *O&M Data* – The Company used data from a leading truck manufacturer to help confirm the data modeled in the Electric Highway and the Company's internal fleet cluster study.

- Zoning maps for the urban areas of our service territory. Commercial and industrial areas of cities are often found on the fringes on the urban core and infrastructure, including highways, intermodal transfer facilities (rail to surface, air to surface, and rail to air), has been developed to support commercial and industrial activity in those areas.

Combining these resources, National Grid developed a shortlist of "hotspots" for EV charging growth, The Company then compared the list of shortlisted projects alongside our traditional forecast to determine which sites needed upgrades to serve the load. This portfolio is a culmination of this process, which primarily uses granular load studies to identify load growth, but also utilizes customer input and information, the Company's system forecast, and third party information to validate the need.

The Company details charging requirements projected by its studies under Criteria #2.

Urgent Project Criteria #2 – Urgency Determination:

After creating a list of projects where upgrades were likely to be necessary, National Grid then evaluated the timing associated with scoping, building, and energizing these projects.

Some projects—for example a large industrial zone in Scotia and Rotterdam—were deemed to not meet the Urgency Determination criteria proposed in the JU Criteria Filing. While the projected load for the industrial zone is high (~45MW of peak load by 2050) current grid capacity, in-flight

projects, and timing of vehicle electrification meant that this project did not pass the urgency criteria.

The Company did identify urgent needs for capacity to serve EV charging in four locations off the Thruway system: Watertown, Cortland, Wilton, and Castleton-on-Hudson.

Watertown: Charging Requirements (MW) from Electric Highways Study & Granular Fleet Cluster Study					
Vehicle Class	**2025**	**2030**	**2035**	**2040**	**2045**
Travel Plaza: LDV + MHDV *350 kW Scenario, Total Charging Capacity*	***1.4***	***2.5***	***3.9***	***4.6***	***4.9***
Fleet[15] *Peak Load, Depots*	***0***	***2***	***3.2***	***4.4***	***5.5***

Conditions at Watertown: The Company estimates there is close to 4 MVA of available capacity currently on the feeder serving the travel plaza and adjacent fleets. However, the Company forecasts that the travel plaza will require 2.5MW of charging, excluding any megawatt-chargers) and load from electrification of surrounding fleets will be approximately 2MW by 2030. Fleets in the area include a logistics warehouse, a concrete manufacturing facility, and a school bus depot. Thus, the need for an incremental upgrade in the area is needed to ensure lack of grid capacity does not prevent electrification of these customers as companies and New York State work towards meeting ambitious electrification goals. The Company's proposal would complete upgrades at this location by 2029, or earlier.

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Cortland: Charging Capacity Requirements (MW) from Electric Highways Study					
Vehicle Class	**2025**	**2030**	**2035**	**2040**	**2045**
LDV	*1.4*	*2.8*	*3.2*	*4.2*	*4.9*
MHDV *350-kW Scenario*	*0.7*	*1.3*	*2.8*	*4.6*	*6.3*
Total: LDV + MHDV ***350 kW Scenario***	***2.1***	***4.2***	***6***	***8.8***	***11.2***
MHDV *1-MW Scenario*	*2*	*3*	*6*	*8*	*8*
Total: LDV + MHDV ***1-MW MHDV Scenario***	***3.4***	***5.8***	***9.2***	***12.2***	***12.9***

Conditions at Cortland: The current 2030 forecast charging requirement at the travel plaza is 4.2 MW in the 350kV scenario and 5.8MW in the 1MW scenario. The current feeder's available

[15] As discussed previously, fleet study results in Syracuse and Wilton were used to extrapolate impacts for similar vehicle types in Watertown, Castleton-on-Hudson, and Cortland.

capacity is only 2 MVA (less than the projected charging requirement in 2025). By interconnecting the travel plaza to the existing 34.5kV sub-transmission line that runs adjacent to their property, National Grid would be able to serve up to 15 MVA at the site and, just as importantly, allow for additional load growth related to vehicle electrification and other sources to interconnect to the distribution system. The Company's proposal would complete upgrades at this location by 2027. As this project contemplates a direct tap to the sub-transmission system to serve the service area, National Grid will continue coordination with local customers to ensure timing is in line with plans to install charger infrastructure.

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Wilton: Charging Capacity Requirements (MW) from Electric Highways Study & Granular Fleet Cluster Study					
Vehicle Class	**2025**	**2030**	**2035**	**2040**	**2045**
Travel Plaza: LDV + MHDV *350 kW Scenario, Total Charging Capacity*	***2.3***	***5***	***9.2***	***12.3***	***15***
Fleet *Peak Load, Depots*	*0.7*	*4.5*	*11.3*	*17.5*	*24.1*

Conditions at Wilton: The current limiting element for serving the Wilton area is the limited number of feeders tied to the existing substation. Only two feeders currently run from the substation, not fully utilizing the capacity available in the station transformer bank. The existing feeders very limited available capacity, leading to the need for additional feeders to enable the station's full potential to be deliverable. The area supports a major truck stop, two very large distribution centers, police station, fire station, Boards of Cooperative Educational Services (BOCES), and school. The Company's proposal would complete upgrades at this location by 2029, in time to meet the forecast growth in vehicle electrification related load in the area.

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Castleton-on-Hudson: Charging Capacity Requirements (MW) from Electric Highways Study & Granular Fleet Cluster Study					
Vehicle Class	**2025**	**2030**	**2035**	**2040**	**2045**
Travel Plaza: LDV + MHDV *350 kW Scenario, Total Charging Capacity*	***2.1***	***4.6***	***8.4***	***11.2***	***13.7***
Fleet *Peak Load, Depots*	***0***	*0.3*	*0.9*	*1.8*	*1.9*

Conditions at Castleton-on-Hudson: While the feeder serving the travel plaza and adjacent fleets in Castleton-on-Hudson has 6MVA of capacity, the transformer bank only has 3MVA, thus

limiting the service to the area. The Company forecasts that the load in the area will exceed the existing constraint by 2030. The Company's proposal would complete an initial upgrade of getaway cables, feeder work and initial substation build at this location by 2029, with further work (not included in this proposal) needed to complete the civil infrastructure work to accommodate the new transformer bank by 2031.

Conditions in Syracuse: The Company's project proposal additionally includes feeder work associated with fleet electrification and a granular fleet cluster study of the Syracuse area (near the proposed Moore Road substation project). See Project Data Sheets for more details.

Urgent Project Criteria #3 – Degree of Certainty: The proposed projects have a higher degree of certainty as to the location, timing, and magnitude of future load requirements. For more detail on the Company's granular load forecasting methodology, see discussion at the end of this appendix.

Location: As detailed in the main body of the petition, the Company's methodology for projecting load growth in the Electric Highways Study (provides load requirements for all locations) and granular fleet cluster studies (performed for relevant projects in Syracuse and Wilton) uses actual vehicle data, including vehicle telematics, as well as sophisticated modeling of charging behavior for individual vehicle sub-classes. The proposed projects have a high degree of granularity as to where vehicles stop today, and where charging will be needed in the future. The use of OEM data and EPRI's eRoadMAP tool further gives a higher degree of certainty around location.

At several project locations, proposed solutions will address both fast-charging and depot charging load growth, providing additional confidence as to the location of future needs. The Company has had conversations with big fleet owners and travel plaza operators in the proposed areas for upgrades. These conversations have informed justification for the proposed work and confirmed the need to build out infrastructure. Written stakeholder input received by the Company is attached in Appendix 3.

Timing and Magnitude: To forecast the timing and magnitude of electric vehicle charging capacity requirements, the Company modeled granular EV load under a regulation-compliant scenario in which ACC-II and ACT were met entirely via adoption of EV as ZEV. This approach allows the Company to forecast customer requirements associated with achieving State mandates and regulations, i.e., the projected charging requirements reflect a forecast of what will be necessary at each project location if State-adopted regulations are met. This informs both the timing of needs (*e.g.*, annual sales targets for ZEV) and the magnitude of needs (*e.g.*, total vehicle stock converted to ZEV). In areas where the Company did not conduct a granular load forecast study for surrounding fleets, National Grid used information developed in research of other areas as proxies to determine load growth and timing. For example, in areas where the Company did not perform a granular study (e.g., Watertown and Cortland) but where the Company identified a fleet (such as a food and distribution distributor), the Company used analysis from granular studies of Wilton and Syracuse to extrapolate impacts of charging demand for the identified fleet.

The Company has prioritized initial locations with a near-term constraint, i.e., locations which are unlikely to be able to accommodate the timing and magnitude of the projected charging capacity requirement for fast-charging and/or fleet depot charging.

Stranded Asset Risk: The Company had interaction with nearly all customers about charging deployment in areas identified for investment, including initial applications at select sites.

Projects would be expected and available to provide capacity to other customers in the area. The Company intends to continue consulting with customers and providing information about future and available capacity to ensure grid infrastructure is used and utilized.[16] This could include targeted stakeholder efforts to make customers aware of newly created Areas of Capacity for EV charging.

Urgent Project Criteria #4 – Consideration of Risks and Benefits:

Appropriately Sizing Solutions: Where projects would be expected to serve both fast-charging and fleet depot charging load, solutions are designed to create sufficient capacity for both needs. For instance, in Wilton there is a large distribution center across the street from a large truck stop. If the Company were to wait for load requests from customers, it could lead to build a solution to match only one customer's need. Here, the Company is taking into account the need of both customers as well as surrounding fleets. In doing so the Company has developed both a short-term and long-term plan to address both waves of electrification without over- or under-building the solution to the projected stage in load growth.

Risks of Delayed Action/Inaction and Benefits of Early Action: The Company has prioritized locations where Construction-Related Activities must begin imminently to meet the charging capacity requirement, or to minimize the amount of time in which grid infrastructure cannot serve the charging capacity requirement.

National Grid is already seeing the impacts on delayed action in upgrading its infrastructure to serve growing load related to economic growth. A customer in the Castleton-on-Hudson project area approached National Grid looking to expand its warehouse operations. Given the constrained system in the area, the customer would have to make a significant investment if not for this project, which will benefit multiple customers in the area. Taking a proactive approach to anticipating capacity needs on a more granular basis provides multiple benefits.

DAC Impact: While none of the projects are in DAC designated areas, the portfolio, like the rest of the projects in the petition, will help address air quality impacting DACs across New York State. Further, projects in Cortland and Watertown, while not directly in DAC designated areas, are in towns that that include DACs. These projects will play a role in decarbonizing throughfare traffic as well as, and more importantly, fleets in industrial zones that are domiciled in these areas. By facilitating the conversion of internal combustion engines to ZEVs, these projects could have a direct effect in lowering particulate matter indices and improving health metrics in the surrounding communities.

Other Considerations: These projects were scoped and finalized after submission of the Company's May rate filing.

[16] While following appropriate information-sharing regulations and requirements.

Estimated Expenditure ($M): Off-Thruway, I-81, and I-87 Capacity Projects

Project	FY26	FY27	FY28	FY29
Total: Off-Thruway, I-81, and I-87 Capacity Projects	$1.2	$7.1	$9.3	$4.3

Transportation Electrification: School Bus and Other Customer-Driven Projects

These distribution projects create capacity for the electrification of school bus depots consistent with State policy for school bus electrification. These policies require school district purchases to be 100% ZEV in 2027, and 100% of the fleet ZEV by 2035. These projects also address other customer-driven projects related to transportation electrification, such as creating capacity for fast-charging sites not identified through a granular load study but instead through a near-term customer request.

Urgent Project Criteria #1 – Upgrade Required for Transportation or Building Electrification: These projects were identified based on direct evaluation of and input from school districts in the Company's service territory which are required to electrify their school bus fleets, as well as other customer requests to enable EV charging. Some districts have received federal funding and are beginning procurement of electric school buses. These projects will address issues such as system voltage or limiting sections of feeders serving these areas.

Urgent Project Criteria #2 – Urgency Determination: All school buses sales in the State are required to be 100% ZEV by 2027. Federal funding constraints and project timelines provide additional urgency to ensure schools can have capacity available at their site. School bus projects are expected to be in service before or around July 1, 2026, and thus construction would need to begin before then. Other projects are driven by current customer requests requiring distribution upgrades.

Urgent Project Criteria #3 – Degree of Certainty: These projects have a high degree of certainty of load growth as they are informed by actual school bus depot locations confirmed via the Company's Fleet Assessment Services, and by current customer requests. The proposal manages risks related to timing and magnitude of load growth by accommodating load from existing school bus depot fleets expected to convert with a high degree of certainty (as required by State law) and by addressing current requests from customers.

Urgent Project Criteria #4 – Consideration of Risks and Benefits: This portfolio includes small-scale projects to meet immediate needs from customers subject to State electrification mandates, and to meet near-term customer requests.

Additional work may be needed at these or other locations in the future to enable the State's bus electrification mandates and other customer requests. The cost of these upgrades is limited and addresses urgent constraints such as low voltage conditions preventing interconnection.

DAC Impact: These projects will benefit DACs by supporting electrification of school buses which are parked or travel through DACs. For example, one customer has received an EPA grant for a school bus depot in a DAC which will be served by one of these projects, and several other sites serve DACs.

Other Considerations: In DPS staff's rebuttal testimony on National Grid's pending rate case, staff testified that some school bus projects which were included in the rate filing would be "better suited for implementation via the proactive planning process."[17] The Company includes the school bus projects of overlap here for consideration if the projects are not approved through the NMPC Rate Case.

Estimated Expenditure ($M): School Bus and Other Customer-Driven Projects

Project	FY26	FY27	FY28	FY29
School Bus Projects	$1.7	$0.3		
Other Customer-Driven Projects	$2.2	$4.0	$9.8	$3.7
Total: School Bus and Customer-Driven Projects	**$3.9**	**$4.3**	**$9.8**	**$3.7**

[17] NMPC Rate Case, Department of Public Service SEIOP Testimony (Sept. 26, 2024), pp 56-57.

Building Electrification Project Summaries

Building Electrification: Sub-Transmission Multiple Occupancy Building Projects

The Company proudly serves the birthplace of the modern alternating current electric grid in its Western NY region, which comes with unique challenges in supporting building electrification due to the age and configurations of its existing assets in the region. The majority of the distribution system in this region is a 5 kV voltage class with limited thermal capacity, and much of it is underground, further complicating conversions to a higher capacity voltage class. Rapidly expanding interest in new development and redevelopment in this region, paired with the requirements of the NY All-Electric Building Act,[18] which requires most new buildings to use electric heat starting in 2026, has resulted in an influx of customer requests that would require costly and time-intensive upgrades to serve from the distribution system due to the size of the loading requests. The Company is therefore proposing a portfolio of projects in this region that utilize its 23-kV sub-transmission system to serve customers, primarily via the installation of pad mounted transformers and long sub-transmission line extensions.

Urgent Project Criteria #1 – Upgrade Required for Transportation or Building Electrification: All projects in this category are specifically driven by a customer notification or interconnection request for building electrification (new development or conversion to electric heat, such as in a redevelopment) that has been received by the Company. These requests are at varying stages of the Company's interconnection process, as reflected by increased refinement of loading requirements and customer plans for projects that are further along in the process. The connection to building or EV load, therefore, is established via the nature of the notification or interconnection request being for building load, and that the request results in a need to perform system upgrades.

Urgent Project Criteria #2 – Urgency Determination: The existing infrastructure is not capable of meeting the load requirements of the customer. To meet the customer service date, the major execution activities, such as procuring long lead-time materials, must begin prior to July 2026.

Urgent Project Criteria #3 – Degree of Certainty: As discussed in Criteria #1, all projects in this category have a high degree of certainty as to location, timing, and magnitude of load required. For each project, the Company has received either an interconnection request or the Company has been notified of new construction that will require a new interconnection and existing infrastructure at the location cannot serve the requested load. These projects are either direct service upgrades, or new direct service interconnections.

Urgent Project Criteria #4 – Consideration of Risks and Benefits: A unique feature of projects in this category is the utilization of the sub-transmission system to provide service. This solution mitigates the risk of a costly and time-intensive distribution upgrade to serve a single customer while still meeting customer needs and timelines. These direct service requests often require long, new cable construction, which will open new capacity for similar requests in the vicinity, with less barrier to entry from both fiscal and timing perspectives. These projects are appropriately sized

[18] All-Electric Building Act, 2023 S.562-A.

to meet current needs while considering future needs and help mitigate risks to customers not being able to electrify.

DAC Impact: These projects' support for Disadvantaged Communities is currently considered on a case-by-case basis. Specific information of whether each of these projects support a Disadvantaged Community may be found in the specific project description sheets.

Other Considerations: These projects are not included in the Company's rate case. The Company is proposing to pursue the default cost treatment for such projects under the Tariff and applicable regulations and the Company does not intend to petition the Commission for increased contribution in aid of construction ("CIAC") cost recovery from customers.

Multiple-occupancy buildings are eligible to receive an underground line allowance of 100 feet times the average number of residential dwelling units per floor, and where the average footage per dwelling exceeds 100 feet, the applicant is required to contribute the cost of the excess footage.[19] If, however, the estimated costs of the facilities needed to serve the applicant are more than two times the cost of the Company's published average per foot costs, the Company can petition the Commission seeking to require a greater customer contribution in aid of construction ("CIAC") than the default allowance under the Tariff and regulations would otherwise provide.[20]

For the Urgent Upgrade Projects driven by all-electric residential multiple occupancy building interconnection requests, the Company's position is that the default allowance treatment in the Tariff and regulations is appropriate, and the Company does not intend to petition for increased customer CIAC funding for the current proposed projects. These applications to develop all electric buildings are consistent with State law as set forth in the CLCPA, the All-Electric Buildings Act, and other State energy transition policy goals. Several of the projects also are in disadvantaged communities and would directly serve and benefit customers located in those communities. Seeking to impose increased CIAC amounts on developers of the proposed all-electric multiple-occupancy buildings could disincentivize such projects, which would be counter to the State's energy transition goals, as well as contrary to Governor Hochul's efforts to tackle New York's housing crisis and increase the State's housing supply.[21] Accordingly, the Company intends to pursue the default cost treatment under the Tariff for such projects and does not intend to petition the Commission for increased CIAC cost recovery for those projects.[22]

[19] NMPC Electric Tariff PSC 220, Rules 16.4.1.1 and 16.4.3; 16 NYCRR 98.2(e) and 16 NYCRR 98.2(b)(2).
[20] R. 16.4.1.2; 16 NYCRR 98.2(e).
[21] *See, e.g.*, "Governor Hochul Unveils Landmark Agreement to Address the Housing Crisis and Unlock New York's Housing Potential as Part of FY 2025 Enacted Budget," *available at*: https://www.budget.ny.gov/pubs/press/2024/fy25-enacted-budget-address-housing-crisis.html.
[22] This statement is made with the assumption that this Urgent Upgrade Projects filing for cost recovery is granted. If not, the Company reserves its right to petition to recover such costs from developers.

Estimated Expenditure ($M): Sub Transmission
Multiple Occupancy Buildings Projects

	Prior Spend	FY25	FY26	FY27
Total: Sub Transmission Multiple Occupancy Buildings	$0.6	$6.4	$10.7	$11.6

Building Electrification: Customer-Driven Distribution Projects

This portfolio encompasses projects needed to serve building electrification load where the Company has received an interconnection request or notification of intent, and its existing facilities cannot meet the Customer's load. The projects are in other regions of the Company's service territory, and in some cases also involve sub-transmission work, but primarily consist of distribution upgrades.

Specific projects in this portfolio the Company is proposing include distribution and sub-transmission upgrades to support building electrification projects in Syracuse and Utica for customer projects such as public housing redevelopments. These upgrades include distribution feeder voltage conversions and line extensions, as well as sub-transmission line extensions and boutique substation installations.

Urgent Project Criteria #1 – Upgrade Required for Transportation or Building Electrification:
All projects in this category have an associated customer interconnection request for or notification of building electrification (new development or conversion to electric heat, such as in a redevelopment) that has been received by the Company. These requests are at varying stages of the Company's interconnection process, as reflected for instance by increased refinement of loading requirements and customer plans for projects that are further along in the process. The connection to EV or building load is established by the information by the customer, and the need for system upgrades that would be triggered by the realization of the request.

Urgent Project Criteria #2 – Urgency Determination: The existing infrastructure is not capable of meeting the load or power quality requirements of the customer. To meet the customer service date, the project must begin major execution activities, such as procuring long lead time materials, prior to July 2026.

Urgent Project Criteria #3 – Degree of Certainty: As discussed in Criteria #1, all projects in this category have a high degree of certainty as to location, timing, and magnitude of load required. The Company has received a notification of intent or interconnection request for specific loading needs and timelines and existing infrastructure at the location cannot serve the requirement.

Urgent Project Criteria #4 – Consideration of Risks and Benefits: Many of the projects consist primarily of feeder extensions and boutique substation installations that are necessary to meet specific customer loading needs and timelines. These designs help mitigate the risk of over-building, while supporting the ability to reconfigure the system as needed to support additional load growth in the areas where these projects are being undertaken. Project sizing balances

between meeting near-term and long-term needs by being sized to provide additional capacity where appropriate. Further, the Company's portfolio of forecast-driven projects, described in the next section, help supplement these customer-driven projects, providing regional capacity that contributes to meeting policy-driven electrification load needs.

Proposed projects are scoped to, at a minimum, support customer interconnection requests through new thermal capacity and limiting power quality constraints. In order to manage risks associated with under-building, some projects are additionally scoped to meet forecast load in the area, but these projects are triggered by a specific customer request and justification of these individual projects are shared within the project description sheets.

DAC Impact: These projects' support for Disadvantaged Communities are currently considered on a case by case basis. Specific information of whether each of these projects support a Disadvantaged Community may be found in the specific project description sheets.

Other Considerations: Certain projects included in this filing also were included in the NMPC Rate Case, while several of these are incremental to the rate case. Projects that were included in the NMPC Rate Case can be found in Exhibit 1 at the end of this appendix.

Estimated Expenditure ($M): Customer-Driven Distribution Projects for Building Electrification

	Prior Spend	FY25	FY26	FY27	FY28	FY29
Total: Customer Driven Distribution Projects	$9.0	$9.1	$14.4	$11.1	$9.1	$2.4

Building Electrification: Forecast-Driven Distribution Projects

For these projects, specific customer requests meeting the criteria of the order have not yet triggered a need for a system upgrade but are forecast to do so. Customer requests have been received in these areas indicating expansion, however the size of the requests has not yet exceeded the capacity of the existing assets. The projects in this category, therefore, are focused on providing upstream capacity to growing areas of the Company's service territory where policy-driven building load is forecast to overload existing facilities.

Specific projects the Company is proposing in this portfolio include distribution upgrades to support near-term forecast overloads resulting from building electrification in Cobleskill, Albany (Delmar), and Troy. These upgrades include the replacement of substation transformers, the installation of a new circuit switcher, and substation breakers, the relocation or installation of voltage support equipment and upsizing of feeder getaways, and the voltage conversion of distribution feeders from 5 kV to 13.2 kV.

Urgent Project Criteria #1 – Upgrade Required for Transportation or Building Electrification: These projects are proposed on the basis of the electric heat or a combination of the electric heat and electric transportation components of the Company's ELF driving overloads in an area.

Urgent Project Criteria #2 – Urgency Determination: Given existing facilities are at, near, or above their ratings, allocation of the State's policy goals indicate building/transportation need will result in significant near-term load growth in these regions. Creating additional upstream capacity in this area via voltage conversions and substation work has a long lead time, so construction must begin by July 1, 2026 for these projects, so as not to delay the adoption of electric building and transportation technologies in these areas.

Urgent Project Criteria #3 – Degree of Certainty: The Company's ELF indicates significant load growth in these areas to meet policy mandates, and existing facilities are at, near, or above their normal or contingency rating threshold. In particular, existing facilities for this category of projects tend to be of a lower voltage class that is not conducive to supporting building electrification load. Therefore, the Company has a high degree of certainty that these facilities will have to be upgraded to meet policy mandates.

Urgent Project Criteria #4 – Consideration of Risks and Benefits: These projects manage risks by focusing on creating upstream capacity, which can be utilized downstream to rapidly meet load requests, in these areas, even where the Company cannot yet predict the exact locations that it will materialize. This creates additional flexibility on the system to meet customer needs, and projects are sized to meet the long-term needs of the areas they serve, based on forecasts of 2050 loading requirements.

DAC Impact: These projects' support for Disadvantaged Communities are currently considered on a case-by-case basis. Specific information of whether each of these projects support a Disadvantaged Community may be found in the specific project description sheets.

Other Considerations: Certain projects included in this filing also were included in the NMPC Rate Case, while several of these are incremental to the rate case. Projects that were included in the NMPC Rate Case can be found in Exhibit 1 at the end of this appendix.

Estimated Expenditure ($M): Forecast-Driven Distribution Projects for Building Electrification

	Prior Spend	FY25	FY26	FY27	FY28	FY29	FY30
Total: Forecast Driven Distribution Projects	$3.2	$3.8	$12.5	$17.9	$18.4	$ 9.2	$1.4

Building Electrification: Forecast-Driven Transmission Projects

These transmission reinforcements provide upstream capacity necessary to meet the distribution and sub-transmission connected customer requests that have already been received, and yet-to-be-received requests of a similar nature.

In its Western division, the specific project the Company is proposing in this category is a transmission reconfiguration project on its 115kV lines between Niagara, Packard, Gardenville and Erie Street, including building one mile of double circuit 115kV. In its Eastern division, the Company is proposing to replace a 0.23-mile parallel underground section of the State Campus Woodlawn #12 circuit and the State Campus Menands – Patroon #15 circuit with larger conductor and new terminations. These projects will upgrade transmission system thermal ratings, supporting more capacity on the local transmission system for electrification load.

Urgent Project Criteria #1 – Upgrade Required for Transportation or Building Electrification: Meeting downstream customer needs necessarily requires transmission level capacity. These projects were selected because they are a necessary step to serve load growth from buildings and electric vehicles that existing infrastructure cannot accommodate, based on NYISO system forecasts. These projects are either system capacity upgrades, or Multi-Value Transmission projects, where the project scope is developed to meet forecast load increases caused by system-wide electrification of buildings and transportation.

Urgent Project Criteria #2 – Urgency Determination: Given the long lead times for building transmission infrastructure, these upgrades must commence by July 1, 2026, in order to meet the timing of forecast load growth.

Urgent Project Criteria #3 – Degree of Certainty: There is a high degree of certainty that these projects are needed based on the overall magnitude of new load connecting to the system and in alignment with NYISO load forecasts. Solutions provided under the scope of these projects look to make capacity available to meet load forecasting scenarios.

Urgent Project Criteria #4 – Consideration of Risks and Benefits Upstream transmission capacity is extremely unlikely to be underutilized, and the risk of delay is high, as it can be a significant limiting factor in meeting capacity requirements of the grid. Building distribution and sub-transmission infrastructure without transmission infrastructure to back it up, will delay customer electrification.

DAC Impact: These projects' support for Disadvantaged Communities is currently considered on a case-by-case basis. Specific information of whether each of these projects support a Disadvantaged Community may be found in the specific project description sheets.

Other Considerations: Certain projects included in this filing also were included in the NMPC Rate Case, while several of these are incremental to the rate case. Projects that were included in the NMPC Rate Case can be found in Exhibit 1 at the end of this appendix.

Estimated Expenditure ($M): Forecast-Driven Transmission Projects for Building Electrification

	Prior Spend	FY25	FY26	FY27	FY28	FY29
Total: Forecast-Driven Transmission Projects	$1.9	$0.4	$3.1	$10.1	$11.3	$15.2

Summary: Alternative Solution Approach

Alternative solutions entail technologies and processes that enhance, defer, or replace the need for traditional infrastructure upgrades and aid in the planning or operations of current infrastructure. These solutions can be utility and/or non-utility owned, may be implemented as a standalone technology and/or as a portfolio of technologies, and may be interconnected either behind the meter and/or front of the meter. Alternative solutions may include, but are not limited to, Energy Storage, Distributed Generation, Load Flexibility, Energy Efficiency, Flexible Connections, and Grid Enhancing Technologies.

Alternative solutions may be faster to deploy than building a wire solution and may have the ability to be scaled or augmented over time as the forecast grid needs change, with additional potential for operational flexibility. However, it is critical for utility control centers to have confidence that the alternative solution will be available to perform when needed, as it is part of the utility's obligation to provide safe and reliable service.

The use of alternative solutions is also a major focus of the Grid of the Future Proceeding[23] that is expected to drive greater utilization of DERs to help the State achieve its goals for both local and bulk grid support. The evaluation of the alternatives in this Petition is directly in-line with the objectives of the Grid of the Future Proceeding. This section details the process by which constrained locations were evaluated for alternative solutions to identify if any technologies and/or practices could potentially defer, enhance or reduce the scope of the proposed wire projects, or serve as an interim approach ("bridge-to-wires") until long term solutions can be constructed. The Company's approach for considering various solutions—which includes utility-integrated storage—is additionally consistent with the Joint Utilities' recommended approach[24] in the Energy Storage Order Proceeding.

Alternatives Identification Process:

Utilities ensure assets and operations follow their planning criteria to provide safe and reliable operation of their T&D systems. Required grid upgrades may emerge when criteria violations are revealed by customer interconnection studies and forecasts or granular load studies, accounting for contingency and risk analyses. More information on the Company's approach can be found in the Company's update to its Distribution System Implementation Plan.[25]

Evaluation Process:

To determine potential full or partial solutions for the cited need(s), existing customer programs such as energy efficiency and demand response (Flexible Load) can be evaluated to find a proper solution. If customer side solutions are unable to meet the full need and other alternative solutions are deemed to be feasible, competitive procurements via RFP for other alternative solutions can be conducted. For any RFPs released and subsequent proposals received, they are evaluated, reviewed, and ranked against the following key criteria:

- Proposal comprehensiveness
- Proposer qualifications, experience, and financial strength

[23] See Case 24-E-0165.
[24] See Case 18-E-0130, where the Joint Utilities propose a flexible evaluation framework for UIS to provide non-market T&D services.
[25] Distribution System Implementation Plan of Niagara Mohawk Power Corporation d/b/a National Grid, June 30, 2023. Case 16-M-0411.

- Environmental impacts
- Project viability
- Functionality
- Technical reliability
- Safety
- Customer and socio-economic impacts
- Scheduling, including consideration of timeline to meet planned in service date
- Customer value
- Interconnection consideration
- Siting and permitting considerations

Next Steps:

Following the filing of this proposed Urgent Upgrade Projects Portfolio, National Grid plans to:

- Release an RFP for mobile storage after filing this petition and a recovery pathway is established.
- Conduct further evaluation of interim solutions for Cortland and Castleton-on-Hudson non-wire alternatives, which would allow us to identify if any customer program(s) can meet a portion of the need to form a portfolio solution in parallel with other assets.
- Continually revaluate opportunities for alternatives in alignment with annually updated forecasts and associated planning studies.
- Continue refining the approach to alternatives, with any changes to be proposed in the long-term planning revisions under this proceeding.
- Continue to support the Grid of the Future proceeding and Energy Storage Order Proceeding and ensure alignment with activity through the Proactive Planning Proceeding.

Non-Wire Alternative Projects for Consideration

Project Consideration for Building Electrification Portfolio:

Based upon project scopes and costs within the building electrification portfolio, no urgent, interim NWA project opportunities were identified. However, NWA deferral options for projects in this portfolio are still under review or are not feasible and being removed. Explanation of NWA consideration may be found in each PDS doc.

Project Consideration for Transportation Electrification Portfolio:

The Company is proposing mobile battery energy storage (MBES) to enable three locations considered for the I-90 System Capacity Upgrades portfolio. These projects would be expected to be remobilized to meet future needs.

For other corridor and fleet projects, the Company has performed an initial assessment for Cortland and Castleton-on-Hudson, where loading concerns are present prior to long-term capital solutions can be constructed. This assessment demonstrated that alternatives approaches are likely to be feasible for each location, though project scopes and determination of solutions are

still under review, and cost would need to be compared with the wired solutions. Additional explanations of NWA consideration are found in each project description sheet.

Summary: Overview of Forecast and Granular Load Studies

Electric Load Forecast

The Company's ELF scenario used to identify Urgent Upgrade Projects assumes achievement of New York electrification policies.

- For heating, this includes forecasting heat-pump penetration rates that reflect the trajectory towards meeting the State's electrification pathway of 'Accelerated Transition Away from Combustion', also known as CLCPA Scenario 3. Additionally, the heat-pump load profiles are developed by studying the simulated heating behavior of a sample of residential and commercial buildings in the State of New York, and adjusting those to account for peak weather conditions, conventional growth in heating requirements, improvements to building envelopes, and heat-pump performance assumptions.
- For electric vehicles, the forecast scenario is built to align with governing policies and regulations including ACC-II, ACT, and the school bus electrification mandate specified in a prior fiscal year budget. For ACT, sale share rates are projected beyond 2035 to align with the multi-state MHDEV Memorandum of Understanding (MOU).[1]

For details on the Company's system forecast, refer to the Company's peak report which is available on its System Data Portal:

- https://systemdataportal.nationalgrid.com/NY/documents/Peak_Load_Forecast.pdf

Granular Load Studies

The Company has performed multiple granular load studies relevant to Urgent Upgrade Projects.

For more details on the Electric Highways Study methodology, please see:

- https://www.nationalgrid.com/document/148616/download
- This study was published in November 2022 with CALSTART, Geotab, RMI, and Stable Auto.

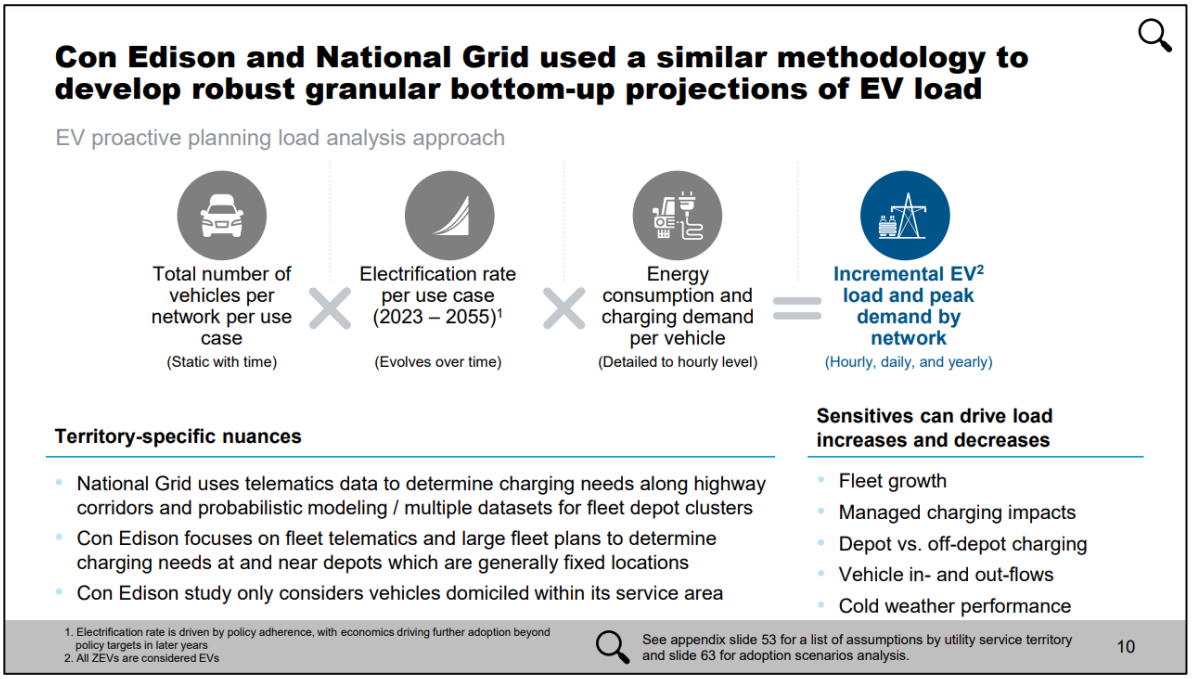
For more details on fleet cluster methodology, please see:

- https://www.nationalgrid.com/document/150121/download -- 2021 study
- https://www.nationalgrid.com/document/150356/download -- 2023 study.
- These studies with Hitachi Energy were published in 2021 and 2023.
- The Company has continued to evolve this methodology, including detailed cluster studies informing projects included in this filing.

In a November 2023 technical conference, National Grid and Con Edison presented as to how their granular load study methodology aligned on assumptions discussed below.[26]

[26] Case 23-E-0070. Proceeding on the Motion of the Commission to Address Barriers to Medium- and Heavy-Duty Electric Vehicle Charging Infrastructure. National Grid and Con Edison Presentation – November 2, 2023 Technical Conference. https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={D014A58B-0000-C635-BB67-63DF8C34A7FF}

Excerpt from 2023 MHDV Proceeding Technical Conference:
Con Edison and National Grid Alignment on Approach to Granular Load Studies



Con Edison and National Grid used a similar methodology to develop robust granular bottom-up projections of EV load

EV proactive planning load analysis approach

Total number of vehicles per network per use case	×	Electrification rate per use case (2023 – 2055)[1]	×	Energy consumption and charging demand per vehicle	=	Incremental EV[2] load and peak demand by network
(Static with time)		(Evolves over time)		(Detailed to hourly level)		(Hourly, daily, and yearly)

Territory-specific nuances

- National Grid uses telematics data to determine charging needs along highway corridors and probabilistic modeling / multiple datasets for fleet depot clusters
- Con Edison focuses on fleet telematics and large fleet plans to determine charging needs at and near depots which are generally fixed locations
- Con Edison study only considers vehicles domiciled within its service area

Sensitives can drive load increases and decreases

- Fleet growth
- Managed charging impacts
- Depot vs. off-depot charging
- Vehicle in- and out-flows
- Cold weather performance

1. Electrification rate is driven by policy adherence, with economics driving further adoption beyond policy targets in later years
2. All ZEVs are considered EVs

See appendix slide 53 for a list of assumptions by utility service territory and slide 63 for adoption scenarios analysis.

10

Exhibit: Projects of Overlap Between Urgent Upgrade Filing and Rate Case

Exhibit 1: Urgent Upgrade Projects Included in May 2024 NMPC Rate Case Filing

Urgent Project Category	Sub-Category	Project Name(s)	Associated Funding Projects	Notes
Transportation Electrification	I-90 System Capacity Upgrades	Angola, Pattersonville	C094390, C094391, C0094381, C094393, C094389, C094392	In 9/26 testimony, Staff recommended this project be moved to Proactive Planning Proceeding. Project schedule updated.
Transportation Electrification	I-90 System Capacity Upgrades	Gee Road	C094400, C094401, C094386	In 9/26 testimony, Staff recommended this project be moved to Proactive Planning Proceeding. Project schedule updated. Project name changed to reflect existing Chittenango substation (was previously called Chittenango).
Transportation Electrification	I-90 System Capacity Upgrades	Alleghany Road (Flying J)	C094380, C09487, C094378	In 9/26 testimony, Staff recommended this project be moved to Proactive Planning Proceeding. Project schedule updated. Project name changed to reflect cluster of sites (previously referred to as Flying J).
Transportation Electrification	I-90 System Capacity Upgrades	Moore Road (DeWitt Area)	C094394, C094386, C094396	In 9/26 testimony, Staff recommended this project be moved to Proactive Planning Proceeding. Project schedule updated. Project name changed to reflect existing DeWitt substation (was previously referred to as DeWitt).
Transportation Electrification	Mobile Battery Energy Storage	Mobile Battery Energy Storage	C094583, C094584, C094585	In 9/26 testimony, Staff recommended this project be moved to Proactive Planning Proceeding. Project data sheets combined.
Transportation Electrification	School Bus and Customer-Driven Projects	School Bus Projects	C092952, C092951, C092948, C092845, C092949	In 9/26 testimony, Staff recommended these projects be moved to Proactive Planning Proceeding.
Building Electrification	Forecast-Driven Transmission Projects	Packard-Gardenville, Campus-Menands #15 UG Replmt	C079506, C081799, C088133, C085043	Select projects include changes in scope and/or schedule.
Building Electrification	Forecast-Driven Distribution Projects	Delmar-Elsmere, Cobleskill, Seventh Ave, Delameter	C046536, C047877, C047885, C080474, C083920, C085610, C086902, C080475, C080476, C083916, C083926, C091671, C083917	Select projects include changes in scope and/or cost.
Building Electrification	Customer-Driven Distribution Projects	Station 3012, Hancock 2 DLine, Sand Road 2 DLine, Central Utica Boutique	C093670, C093809, C074909, C085610, C093668, C093669, C093808	

Appendix 2: Draft Tariff Leaves for Proactive Planning Surcharge

X.1 Proactive Planning Surcharge

The Proactive Planning Surcharge will recover the revenue requirement impacts associated with the local transmission and distribution projects addressing constraints to load growth from electrification (the "Upgrade Projects") as approved by the Commission pursuant to the "Order Establishing Proactive Planning Proceeding" in Case 24-E-0364.

X.1.1 The revenue requirement impacts will include incremental operating expenses, related taxes, return on capital investment (including initial and ongoing cost of removal), depreciation expense, and other costs approved by the Commission associated with the Upgrade Projects.

X.1.2. Carrying charges will be recovered at the Company's pre-tax weighted average cost of capital ('WACC").

X.1.3 The Proactive Planning Surcharge will include cost recovery specified in X.1.1 for Upgrade Projects and will include any over/under reconciliation as specified in Rule X.5. The surcharge collection period will be from July 1st through June 30th.

X.2 The amount to be recovered shall be allocated to applicable service classifications based on the same allocation factors that would be used if these costs were included in base rates consistent with the Company's most current embedded cost of service study. Customers taking service under SC-4 and SC-7 shall be subject to the Proactive Planning Surcharge rates of their parent service classification.

X.3 The amounts to be recovered from each parent service classification as determined in Rule X.2 above shall be divided by the respective parent service classification's forecast sales associated with the corresponding annual period which the surcharge will be collected from customers.

X.4 The Proactive Planning Surcharge rates will be applied to a customer's actual billed consumption and applicable to customers serviced under PSC No. 220 service classifications No. 1, 1-C, 2 Non-Demand, 2 Demand, 3, 3-A, 4 and 7 and all PSC No. 14 service classifications. The Proactive Planning Surcharge will also be applied to a customer's deliveries associated with NYPA load, including Recharge New York load, and may be applicable to PSC No. 220 service classification No. 12 in accordance with the terms of their individual contracts.

X.4.1 The Proactive Planning Surcharge is not applicable to Excelsior Jobs Program qualifying load.

X.4.2 The Proactive Planning Surcharge shall be recovered from customers on a per kWh basis for non-demand service classes, a per kW basis for demand service classes, and a Contract Demand basis for SC7 customers.

X.5 The Proactive Planning Surcharge will be subject to an annual true-up, with any over/under collection at the end of the annual collection period, inclusive of carrying

charges at the Company's pre-tax WACC, to be included in the balance for refund or recovery in the next annual period, or in future base delivery rates as applicable.

X.6 The Proactive Planning Surcharge shall be shown on statements filed with the Public Service Commission apart from this rate schedule not less than fifteen (15) days before its effective date.

Appendix 3: Stakeholder Input – Transportation Electrification

Letters of Input

National Grid has received and attached Letters of Input from:

- Ace Hardware
- Bp Pulse
- Chateau Energy
- Daimler
- First Student
- Ford
- International Trucks
- Love's
- Pilot Flying J
- Scotty's Truck Stop
- Student Transportation of America
- TerraWatt
- Tesla
- TruCurrent
- Volvo
- Zeem

November 12, 2024

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

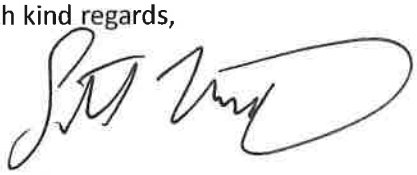
This letter is to express our support for National Grid's filing in response to New York Public Service Commission's (PSC) Proactive Planning Grid Planning Proceeding (Case Number 24-E-0364). In its filing, National Grid seeks to create essential electric grid capacity for vehicle electrification in Upstate New York. We also support the projects included in this proceeding that were first submitted in National Grid Electric Rate Case (Case 24-E-0322)

As a company actively involved in the energy transition and committed to meeting New York State vehicle electrification goals, we recognize the importance of EV charging infrastructure to support the proliferation of zero-emissions medium- and heavy-duty vehicles. Grid capacity can be a significant barrier to EV installations. Projects that seek to expand it in preparation for EV charging are crucial to enable companies like ours to fulfill our targets and continue to operate and grow in Upstate New York.

We support the approval of National Grid's projects to create capacity for EV charging in Upstate New York. National Grid's proposal to support electrification of charging solutions at both travel plazas in key freight corridors and select industrial zones is comprehensive. These projects will help reduce uncertainty around charging infrastructure for fleets across the state, including ours. A proactive approach to creating grid capacity for EV charging allows private and public fleet operators to plan and invest in the electrification of their vehicles more efficiently.

Please reach out with further questions or inquiries.

With kind regards,



Scott Montgomery
Retail Support Director
Ace Hardware Retail Support Center
55 Northern Pines Road
Wilton, NY 12831

October 17, 2024

Brian Ross
bp pulse
30 S. Wacker Dr.
Chicago, IL 60606

New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

Re: bp pulse support for National Grid's filing in response to New York Public Service Commission's (PSC) Proactive Planning for Upgraded Electric Grid Infrastructure Proceeding (Case Number 24-E-0364)

bp pulse is a global electric vehicle charging services provider with many years' experience developing, constructing, and operating charging solutions for public and fleet customers. New York is critical to our US deployment of publicly available electric vehicle fast charging for personal and commercial vehicles. Our potential development sites in New York will require significant electric service to meet electric vehicle drivers' needs – especially at sites that include ultra-fast charging options and serve large numbers of vehicles ranging from passenger cars to heavy-duty trucks. Utility service availability is among the top risks to project delivery success and investment viability.

So we applaud the PSC for initiating the Proactive Planning Proceeding and for directing New York State utilities to propose urgent projects that will support emerging transportation electrification. The Proactive Planning proceeding and investment in urgent projects can reduce project delivery risk due to utility service lead time. Preparing the utility grid for electrification is crucial to fulfill vehicle electrification goals in Upstate New York.

Specifically, we support National Grid's proposed EV Highway investments in electric grid capacity along Interstate 90 in Upstate New York. Its proposed investment in the Genesee Region would expand grid capacity to serve potential demand at our TravelCenters America location in Corfu, NY.

Please reach out with further questions or inquiries.

Sincerely,

Brian Ross
Advocacy Lead - East
bp pulse

5998 Lake Forrest Drive
Atlanta, GA 30328
404-795-2600
www.chateauES.com

October 23, 2024

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

This letter is to express our support for National Grid's filing in response to New York Public Service Commission's (PSC) Proactive Planning Grid Planning Proceeding (Case Number 24-E-0364). In its filing, National Grid seeks to create essential electric grid capacity for vehicle electrification in Upstate New York. We also support the projects included in this proceeding that were first submitted in National Grid Electric Rate Case (Case 24-E-0322).

As a company actively involved in the energy transition and committed to meeting New York State vehicle electrification goals, we recognize the importance of EV charging infrastructure to support the proliferation of zero-emissions medium- and heavy-duty vehicles. Grid capacity can be a significant barrier to EV installations. Projects that seek to expand it in preparation for EV charging are crucial to enable companies like ours to fulfill our targets and continue to operate and grow in Upstate New York.

We support the approval of National Grid's projects to create capacity for EV charging in Upstate New York. National Grid's proposal to support electrification of charging solutions at both travel plazas in key freight corridors and select industrial zones is comprehensive. These projects will help reduce uncertainty around charging infrastructure for fleets across the state, including ours. A proactive approach to creating grid capacity for EV charging allows private and public fleet operators to plan and invest in the electrification of their vehicles more efficiently.

Please reach out with further questions or inquiries.

With kind regards,

Todd Jarvis

Todd Jarvis
COO
Chateau Energy Solutions

DAIMLER TRUCK
North America

October 25, 2024

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

Re: Support for National Grid's filing in response to New York Public Service Commission's (PSC) Proactive Planning Grid Planning Proceeding (Case Number 24-E-0364)

Daimler Truck North America (DTNA) submits the following letter expressing our support for National Grid's filing in Case Number 24-E-0364 to add critical grid capacity in Upstate New York for electric vehicle charging.

DTNA is the largest producer of medium- and heavy-duty (M/HD) vehicles in North America. DTNA is fully committed to supporting the emerging zero-emission vehicle (ZEV) market; we expect these technologies to play a significant role in the future of commercial transportation, and know they are a vital contributor to lowering NOx and GHG emissions. DTNA is investing significantly in the development of electric vehicles. We currently offer battery electric school buses, walk-in van chassis (Class 5/6), as well as medium-duty (Class 6/7) and heavy-duty (Class 8) tractors for sale, suitable for local pickup and delivery. In addition, DTNA, along with NextEra Energy and BlackRock, has formed a joint venture, Greenlane, focused on nation-wide commercial public charging and hydrogen refueling in the future to help accelerate infrastructure that meets the needs of M/HD vehicles. Finally, DTNA offers Detroit eFill, a charging solution designed for efficiency and compatibility, and has an expert eConsulting team dedicated to supporting fleets with all aspects of the ZEV transition, including site design and interfacing with utilities.

DTNA believes the successful transition to ZEV transportation will require a three-part "transformation equation"[1].

Vehicle Technology x Cost Parity x Infrastructure = Successful Transformation

Manufacturers have vehicle technologies available today suitable for a variety of fleet applications. Infrastructure, especially long lead additions for the upstream grid capacity required to power M/HD vehicles, remains a significant barrier for fleet electrification.

Proactively planning and investing in this capacity expansion is crucial for enabling New York's fleets to adopt zero-emission vehicles. DTNA supports National Grid's proposal to invest in supporting infrastructure, including at both travel plazas in key freight corridors and select industrial zones. These projects will help reduce uncertainty around charging infrastructure for

[1] https://www.youtube.com/watch?v=eY76BzcxeFc

fleets across the state and are consistent with the state's climate objectives.

Sincerely,

Alissa Recker
Engineer, Compliance & Regulatory Affairs

Oct 8, 2024

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

This letter is to express our support for National Grid's filing in response to New York Public Service Commission's (PSC) Proactive Planning Grid Planning Proceeding (Case Number 24-E-0364). In its filing, National Grid seeks to create essential electric grid capacity for vehicle electrification in Upstate New York. We also support the projects included in this proceeding that were first submitted in National Grid Electric Rate Case (Case 24-E-0322)

As a company actively involved in the energy transition and committed to meeting New York State vehicle electrification goals, we recognize the importance of EV charging infrastructure to support the proliferation of zero-emissions medium- and heavy-duty vehicles. Grid capacity can be a significant barrier to EV installations. Projects that seek to expand it in preparation for EV charging are crucial to enable companies like ours to fulfill our targets and continue to operate and grow in Upstate New York.

We support the approval of National Grid's projects to create capacity for EV charging in Upstate New York. National Grid's proposal to support electrification of charging solutions at both travel plazas in key freight corridors and select industrial zones is comprehensive. These projects will help reduce uncertainty around charging infrastructure for fleets across the state, including ours. A proactive approach to creating grid capacity for EV charging allows private and public fleet operators to plan and invest in the electrification of their vehicles more efficiently.

Please reach out with further questions or inquiries.

With kind regards,

Kevin L. Matthews

Kevin L. Matthews
Head of Electrification, First Student, Inc.
191 Rosa Parks St, Cincinnati, OH 45202

Evan Belser
Policy Strategist and
Senior Managing Counsel
(202) 997-0217

Ford Motor Company
One American Road
Dearborn, MI 48126

November 1, 2024

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

Re: Letter of Support for National Grid's filing in the New York Public Service Commission's Proactive Grid Planning Proceeding (Case Number 24-E-0364)

Ford Motor Company ("Ford") supports National Grid's filing to develop critical grid infrastructure to charge electric vehicles in the Upstate New York region.

Ford is investing in and rapidly transforming our business to deliver the plug-in electrified vehicles that our customers increasingly want. We are creating new battery plants, vehicle manufacturing facilities, and other supply chain infrastructure. Our plan includes introducing new electrification options designed to speed customer adoption, including lower prices and longer ranges. This includes Ford's Power Promise, in which we offer retail customers a complimentary home charger and expert installation at no charge for a standard install, on-the-road charging, an 8-year/100,00 mile battery warranty, and ongoing support and guidance. Our commercial customers are transitioning quickly to electric trucks and vans as they experience the total cost of ownership and the productivity benefits that electric vehicles can provide.

However, lack of charging infrastructure remains a primary barrier to electric vehicle adoption. Now is a critical time to work together to overcome these barriers. Expanding grid infrastructure to support charging is particularly important, and these investments must be made proactively so that customers that are inclined to buy electric vehicles are not dissuaded by real or perceived lack of charging and grid infrastructure. Timely infrastructure deployment is vital for electric vehicles adoption.

We request approval of National Grid's grid capacity investments and projects to develop the increased capacity necessary to support electric vehicle charging for travel plazas, freight corridors, and industrial zones in the Upstate New York region. Ford supports the goals of this proceeding, and thanks you for your consideration.

Sincerely,

EMB

Evan Belser

INTERNATIONAL

International Motors, LLC
international.com

2701 Navistar Drive
Lisle, IL, 60532, USA

Phone: 331-332-5000
Toll Free: 800-448-7825

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

Reference: New York Public Service Commission's (PSC) Proactive Planning Grid Planning Proceeding (Case Number 24-E-0364

Dear Hon. Michelle L. Phillips,

This letter is to express our support for National Grid's filing in response to New York Public Service Commission's (PSC) Proactive Planning Grid Planning Proceeding (Case Number 24-E-0364). In its filing, National Grid seeks to create essential electric grid capacity for vehicle electrification in Upstate New York. We also support the projects included in this proceeding that were first submitted in National Grid Electric Rate Case (Case 24-E-0322)

As a company actively involved in the energy transition and committed to meeting New York State vehicle electrification goals, we recognize the importance of EV charging infrastructure to support the proliferation of zero-emissions medium- and heavy-duty vehicles. Grid capacity can be a significant barrier to EV installations. Projects that seek to expand it in preparation for EV charging are crucial to enable companies like ours to fulfill our targets and continue to operate and grow in Upstate New York.

We support the approval of National Grid's projects to create capacity for EV charging in Upstate New York. National Grid's proposal to support electrification of charging solutions at both travel plazas in key freight corridors and select industrial zones is comprehensive. These projects will help reduce uncertainty around charging infrastructure for fleets across the state, including ours. A proactive approach to creating grid capacity for EV charging allows private and public fleet operators to plan and invest in the electrification of their vehicles more efficiently.

Please reach out with further questions or inquiries.

Thank you,

Kevin Maggay
Government Affairs
International Motors LLC (International)
Kevin.maggay@navistar.com
858-254-7556

November 8, 2024

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

This letter is to express our support for National Grid's filing in response to New York Public Service Commission's (PSC) Proactive Planning Grid Planning Proceeding (Case Number 24-E-0364). In its filing, National Grid seeks to create essential electric grid capacity for vehicle electrification in Upstate New York. We also support the projects included in this proceeding that were first submitted in National Grid Electric Rate Case (Case 24-E-0322)

Trillium provides design build and operations and maintenance capabilities for alternative fueling stations, including EV charging infrastructure, compressed natural gas (CNG), hydrogen, solar power installation, and on-site electricity generation.

Trillium has an in-house engineering, design, and construction team that exclusively works on the development of high-performing alternative fueling stations. Over the last two decades, the team has fine-tuned their approach to designing energy- and operationally-efficient stations. For more than 20 years, Trillium has exceeded customer expectations by delivering superior quality, reliability and dependability at more than 200 alternative fueling stations nationwide.

Trillium is a part of the Love's Family of Companies. Founded in 1964 and headquartered in Oklahoma City, Love's Travel Stops & Country Stores has more than 640 locations in 41 states, providing professional truck drivers, motorists, and commuters with 24-7 access to clean and safe places to purchase gasoline, diesel fuel, electric vehicle charging, compressed natural gas (CNG), travel items, electronics, snacks, restaurant offerings, and more. The Love's Family of Companies has more than 38,000 employees staffing our travel stops, Speedco locations, country stores from coast to coast, and our corporate offices in Oklahoma City and Houston. In New York, Love's Travel Stops has 6 locations located in: Binghamton, Canaan, Bath, Waterloo, Ripley, and Watertown.

Love's and Trillium's alternative fuel power projects are great examples of how Love's, with a long-standing 60-year history and reputation as a national fuel station corporation, has the forward thinking to adapt to the changing energy landscape. Trillium's management of Love's EV charging network began in 2016. Now, Love's EV charging network includes over 20 charging stations across 12 states. Love's, with Trillium's support, is actively growing our EV charging network. Love's has been actively involved in the National Electric Vehicle Infrastructure (NEVI) Program across the country. To date, Love's has been awarded over $60M in NEVI grant funds. Love's, with Trillium's support, is actively responding to NYSERDA's NEVI grant solicitation. The filing referenced in this letter would support the Love's store in Watertown, NY which we plan on including in our NYSERDA NEVI application response.

We recognize that our fleet customers are actively considering battery electric vehicle options for their medium and heavy-duty fleet. Love's welcomes the opportunity to continue to support our customer's fueling needs, even if the fuel is electricity.

As a company actively involved in the energy transition and committed to meeting New York State vehicle electrification goals, we recognize the importance of EV charging infrastructure to support the proliferation of zero-emissions medium- and heavy-duty vehicles. Grid capacity can be a significant barrier to EV installations.

We support the approval of National Grid's projects to create capacity for EV charging in Upstate New York. These projects will help reduce uncertainty around charging infrastructure for locations across the state, including ours.

Please reach out with further questions or inquiries.

Best regards,

Kim Okafor
General Manager of Zero Emission Solutions
Trillium - A Love's Company

PILOT COMPANY

September 9th, 2024

By Electronic Delivery

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

Subject: Pilot Travel Centers LLC Support of National Grid New York Proposal for Grid Updates on I-90

Dear Secretary Phillips,

Pilot Travel Centers LLC ("Pilot") is in support of the National Grid New York Proposal for Grid Updates on I-90.

Pilot, North America's largest operator of travel centers, has decades of expertise with medium and heavy duty (MHD) fueling infrastructure reliability, accessibility, and convenience. Our company is leading the energy transition, with more than 50 operational light-duty EV charging stations across the county. This best-in-class network is part of our announced partnership with General Motors, under which Pilot will install over 2,000 EV charging stalls. The network features ultra-fast 350 kW charging, pull through locations whenever possible, and overhead canopies at select locations.

Pilot strives to meet the needs of our customers and plans to pursue MHD EV charging to meet zero emissions fuel demand. For MHD, Pilot has partnered with Volvo to expand charging options for the Volvo VNR Class 8 truck. Trucks like the VNR are expected to require high-capacity chargers, potentially up to 1 megawatt (MW) . With Pilot's experience in EV charging for light-duty vehicles, we know that grid capacity can be a major barrier to large EV installations. Expanding grid capacity in preparation for MHD EV charging will help Pilot continue to roll out a diversified fuel supply to its 70,000 fleet customers and 1.2 million daily guests across nearly 900 locations nationwide.

National Grid has discussed electric infrastructure constraints on I-90 in New York with Pilot and consulted the company on potential solutions. One of the priority locations included in National Grid's grid upgrade plan for I-90 is Flying J Travel Center #693 in Pembroke, New York. This location is also included as a priority truck parking hub in the National Zero-Emission Freight Corridor Strategy released in 2024.

Pilot currently has 700 kW of light-duty vehicle charging available at our Pembroke location. This location is a hub for truck traffic and is open 24/7 with a variety of amenities, including: diesel fueling, over 150 parking spaces, showers and laundry facilities, 24/7 convenience store shopping, a full-service Denny's restaurant open 24/7, quick service ready-meals, certified CAT scales, and a Southern Tire Mart repair shop onsite.

Pilot supports the inclusion of this location in National Grid's grid upgrade plan and intends to consult with National Grid on the company's other travel center locations in National Grid's service territory. More broadly, Pilot supports National Grid's grid upgrade plan for I-90. Resolving current grid constraints and creating areas of enduring and right-

sized grid capacity is essential to ensuring site operators can meet future customer demand for EV charging.

Thank you for this opportunity for Pilot to voice our support. Please do not hesitate to contact me with any questions.

Sincerely,

DocuSigned by:
Brandon Trama
C19CA2738C804B2...

Brandon Trama
Head of Vehicle Electrification and Infrastructure
(865) 474-2684
Brandon.trama@pilottravelcenters.com

Established 1972

WILTON TRAVEL PLAZA

Scotty's Restaurant

"We Never Close"

CAT SCALE

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

This letter is to express our support for National Grid's filing in response to New York Public Service Commission's (PSC) Proactive Planning Grid Planning Proceeding (Case Number 24-E-0364). In its filing, National Grid seeks to create essential electric grid capacity for vehicle electrification in Upstate New York. We also support the projects included in this proceeding that were first submitted in National Grid Electric Rate Case (Case 24-E-0322)

As a truck stop operating at this location for the past 45+ years we have seen many changes in the amount of truck and auto traffic along this corridor. We have continued to adjust our operation from a small one lane fueling operation to an eight lane, full service, restaurant and repair facility. Our parking lot can accommodate up 200 trucks, with many spending the night here. As the future of EV charging progresses, we look forward to being a major provider to the fleets that we now provide diesel and gasoline to. We recognize the importance of EV charging infrastructure to support the proliferation of zero-emissions of medium- and heavy-duty vehicles. Grid capacity can be a significant barrier to EV installations. Projects that seek to expand it in preparation for EV charging are crucial to enable companies like ours to fulfill our targets and continue to operate and grow in Upstate New York.

We support the approval of National Grid's projects to create capacity for EV charging in Upstate New York. National Grid's proposal to support electrification of charging solutions at both travel plazas in key freight corridors and select industrial zones is comprehensive. These projects will help reduce uncertainty around charging infrastructure for fleets across the state. A proactive approach to creating grid capacity for EV charging allows private and public fleet operators to plan and invest in the electrification of their vehicles more efficiently.

Sincerely,

James F. Parillo
CFO

215 Ballard Road • I-87 At Exit 16 • Gansevoort, New York 12831 • (518) 584-1444 • Fax (518) 584-4121

November 11, 2024

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

Dear Secretary Phillips,

Student Transportation of America (STA) is in support of the National Grid New York Proposal for Grid Updates on I-90.

STA, North America's second largest school bus contractor, is a leader in school bus electrification. We have electrified multiple sites across North America, and we are well underway in bringing the transition to our fleets in New York State. As about 10 percent of all school buses that run in New York are operated by STA, we are proactively partnering with our districts, state officials, and industry stakeholders to help ensure success in meeting New York's nation-leading school bus electrification goals.

STA operates 8 bus yards in National Grid service territory. National Grid has completed initial site assessments for these facilities and identified that there is not adequate capacity at two of our facilities, 219 Sacandaga Rd, Schenectady, and 2897 Transit Rd, Newfane, to complete full electrification for the 100 buses that run from these terminals. The Sacandaga Rd site is adjacent to a large warehouse district, and grid updates to this area would support not only our school bus electrification requirements, but further electrification of nearby fleets and businesses.

STA supports the inclusion of our terminal locations in National Grid's grid update plan and supports National Grid's overall upgrade plan for I-90. These projects will help reduce uncertainty around charging infrastructure for fleets across the state, including ours. We urge for this proactive approach to resolve current grid constraints to ensure that all school districts and school bus contractors can secure the power needed to meet New York's school bus electrification targets and provide our students and communities with safe, clean transportation.

Thank you for your consideration. Please do not hesitate to contact me with any questions.

Sincerely,
Rachel Lane
Rachel Lane
VP – Electrification & Sustainability
Student Transportation of America
732-272-3913
rlane@ridesta.com

Terawatt
Lead the charge.

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

October 8, 2024

This letter is to express our support for National Grid's filing in response to the New York Public Service Commission's (PSC) Proactive Planning Grid Planning Proceeding (Case Number 24-E-0364). In its filing, National Grid seeks to create essential electric grid capacity for vehicle electrification in Upstate New York. We also support the projects included in this proceeding that were first submitted in the National Grid Electric Rate Case (Case 24-E-0322)

As a company actively involved in the energy transition and committed to meeting New York State vehicle electrification goals, we recognize the importance of EV charging infrastructure to support the proliferation of zero-emissions medium- and heavy-duty vehicles. Grid capacity can be a significant barrier to EV installations. Projects that seek to expand it in preparation for EV charging are crucial to enable companies like ours to fulfill our targets and continue to operate and grow in Upstate New York.

We support the approval of National Grid's projects to create capacity for EV charging in Upstate New York. National Grid's proposal to support the electrification of charging solutions at both travel plazas in key freight corridors and select industrial zones is comprehensive. These projects will help reduce uncertainty around charging infrastructure for fleets across the state, including ours. A proactive approach to creating grid capacity for EV charging allows private and public fleet operators to plan and invest in the electrification of their vehicles more efficiently.

Please reach out with further questions or inquiries.

Sincerely,

Signed by:
Jason Berry
B2BFBEB1932C45E...

Jason Berry
Director, Energy & Utilities

85 2nd Street, Suite 400
San Francisco, CA 94105

1 Tesla Road, Austin TX 78725
www.tesla.com/contact

October 25, 2024

Submitted electronically

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

Tesla, Inc. supports National Grid's proactive grid investments in New York for transportation electrification with an emphasis on medium-heavy duty charging

This letter is to express Tesla's support for National Grid's filing in response to New York Public Service Commission's (PSC) Proactive Planning Grid Planning Proceeding (Case Number 24-E-0364). In its filing, National Grid seeks to create essential electric grid capacity for vehicle electrification in Upstate New York. We also support the projects included in this proceeding that were first submitted in National Grid Electric Rate Case (Case 24-E-0322)

As a company actively involved in the energy transition and committed to meeting New York State vehicle electrification goals, we recognize the importance of EV charging infrastructure to support the proliferation of zero-emissions medium- and heavy-duty vehicles. Grid capacity can be a significant barrier to light-duty EV charging installations and is *the* major barrier to rapid expansion of medium-heavy duty EV charging infrastructure. Projects that seek to proactively expand grid capacity are crucial to enable the timely expansion of charging infrastructure in Upstate New York.

A. Tesla Background

Tesla's mission is to accelerate the world's transition to sustainable energy. In support of this mission, Tesla designs, develops, manufactures, and sells high-performance fully electric vehicles and energy generation and storage systems. Since 2020, Tesla has produced four fully electric, zero emissions vehicles (ZEVs): The Model S sedan, the Model X sport utility vehicle (SUV), the Model 3 sedan, and the Model Y mid-sized SUV. More recently, Tesla has added to its all-electric vehicle line up the Cybertruck (pickup truck) and the Semi (Class 8 truck) in 2023.

Tesla's presence in New York:

- 81,876 light-duty all-electric Tesla vehicles
- 100 Supercharger stations across the state
- 958 Supercharger ports (up to 250 kW for V3 and V4 Superchargers)
- Tesla manufacturers its DC fast-charging equipment at its Gigafactory New York in Buffalo, NY

Tesla continues to grow and invest in its charging network to accelerate and support the widespread adoption of all-electric vehicles. Tesla has also begun building infrastructure for its Class 8 all-electric Semi truck. Tesla is committed to continue expanding its charging network for both light-duty and now medium-heavy duty EVs to provide a convenient and seamless charging experience for our customers.

B. Tesla Full Electric Class 8 Truck – the Tesla Semi[1]

In 2017, Tesla introduced the Tesla Semi to the world. A Class 8 truck designed from the ground up to be the most efficient and safest truck on the market. The Tesla Semi represents an opportunity to have an outsized impact on reducing NOx and GHG emissions from goods movement and transportation. The Semi comes in two models with ranges of 300 and 500 miles respectively and demonstrates that an all-electric truck can meet virtually any duty cycle when paired with the megawatt charging system that Tesla and the industry is developing.

Combination trucks –of which the vast majority are semi-trucks –in the U.S. account for just 6% of the total fleet of vehicles on the road.[2] That said, because combination trucks have high fuel consumption due to their weight and heavy utilization, they account for approximately 25% of all U.S. vehicle emissions.[3] Electrifying the heavy-duty truck segment is an essential part of transitioning the world to sustainable energy.

With both the U.S. and E.U. having approved higher weight allowances for electric heavy-duty trucks, Tesla expects the payload to be at least as high as it would be for a diesel truck. In the E.U., electric semi-trucks are permitted to be 2 tons (~4,400 pounds) heavier than diesel equivalents, and in the U.S. the allowance is 0.9 tons (2,000 pounds).

When fully loaded, the Tesla Semi should be able to achieve over 500 miles of range, achieved through aerodynamics and highly efficient motors and be able to reach an efficiency of less than 2 kWh/mile.[4] While most heavy trucking journeys are shorter than 500 miles, Tesla wants long-distance hauling to be sustainable.

Since unveiling the Tesla Semi, a significant number of fleets with substantial freight needs have placed reservations for the truck, indicating broad industry demand for heavy-duty electric vehicles.[5] These fleets will be deploying the Tesla Semi in a wide range of applications, including but not limited to, manufacturing, retail, grocery and food distribution, package delivery, dedicated trucking, rental services, intermodal, drayage, and other applications. Companies with operations throughout North America representing every major trucking sector and category of the economy have reserved the Tesla Semi, ranging from food service to logistics to retail.

The reason for this strong interest is clear – the economics of electrified heavy-duty vehicles are incredibly compelling for end-users, particularly sophisticated and economically rational operators. Tesla estimates that the time to recoup the investment in a Tesla Semi, given the operational savings it provides customers compared to a conventional class 8 truck, will be approximately two to three years (Class 8 diesel trucks have a 15-year average lifetime). With the per mile operational costs being cheaper than diesel trucks, economic minded operators will maximize the use of their electric trucks and quickly expand the number of electric trucks in their fleets.

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[1] See Tesla, Semi.
[2] https://www.lung.org/clean-air/electric-vehicle-report. Delivering Clean Air Report (Released October 2022), page 3.
[3] https://www.epa.gov/newsreleases/biden-harris-administration-finalizes-strongest-ever-greenhouse-gas-standards-heavy
[4] See Tesla, Semi.
[5] See e.g., Yahoo Finance, Tesla Gets Order For 150 Semi Trucks from Canadian Company As It Prepares For 'Volume Production' (Nov. 5, 2020); The Street, Walmart Triples-Down on Tesla Semi Reservations (Sept. 29, 2020); Business Insider, Tesla has a new customer for its electric Semi — here are all the companies that have ordered the big rig (Apr. 25, 2018).

C. Conclusion

The electrification of heavy-duty trucks provides New York one of the greatest opportunities for clean air benefits across the state. The piece that is needed in order to achieve successful deployments of those trucks is adequate charging infrastructure and the bottleneck to heavy-duty charging infrastructure is grid capacity. For this reason, Tesla supports the approval of National Grid's proactive grid investments for transportation electrification.

Tesla believes successful deployment of heavy-duty charging infrastructure will significantly reduce emissions in the state and will also help support U.S. manufacturing of EV charging equipment which takes place at Tesla's Gigafactory New York in Buffalo, NY.

Respectfully submitted,

Bill Ehrlich

Bill Ehrlich
Managing Policy Advisor
Tesla, Inc.

truCurrent

1425 K Street NW
Suite 701
Washington, DC 20005
www.truCurrent.com

October 21, 2024

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

This letter is to express truCurrent's support for National Grid's filing in response to New York Public Service Commission's (PSC) Proactive Planning Grid Planning Proceeding (Case Number 24-E-0364). In its filing, National Grid seeks to create essential electric grid capacity for vehicle electrification in Upstate New York. We also support the projects included in this proceeding that were first submitted in National Grid Electric Rate Case (Case 24-E-0322).

As a company actively involved in the energy transition and committed to meeting New York State vehicle electrification goals, we believe that widespread charging infrastructure is a sine qua non for the scaled adoption of zero-emissions medium- and heavy-duty vehicles. Grid capacity can be a significant barrier to EV installations. Projects that seek to expand it in preparation for EV charging are crucial to enable companies like ours to fulfill our targets and continue to operate and grow in Upstate New York.

National Grid's proposal to support electrification of charging solutions at both travel plazas in key freight corridors and select industrial zones addresses the needs of both privately-owned and for-hire fleets. Projects that both create capacity for corridor charging and open substation capacity for electrification of depot-based fleets are of high priority. Investments that allow for multiple approaches to EV charging – both at depot and along a corridor – ensure that many classes of fleet can benefit from these investments and accelerate the full utilization of these newly created assets. National Grid's careful consideration of both types of charging needs is appropriate and valuable.

Furthermore, National Grid's piloting of flexible interconnection for fleet charging is an important complement to their planned grid investment. As a company that deploys behind the meter generation and storage to support truck charging, we understand that effective load management by energy users can be deployed in tandem with utility system upgrades to create a more cost-effective, resilient and decarbonized grid.

These projects will help reduce uncertainty around charging infrastructure for fleets across the state, including our clients. A proactive approach to creating grid capacity for EV charging allows private and public fleet operators to plan and invest in the electrification of their vehicles more efficiently.

Thank you for your consideration of this letter of support. Please do not hesitate to reach out with any questions.

With kind regards,

Chase Weir
Chief Executive Officer
truCurrent LLC

VOLVO

2024-10-30

Hon. Michelle L. Phillips

Secretary to the Commission

New York State Public Service Commission

Re: National Grid's filing in response to New York Public Service Commission's (PSC) Proactive Planning Grid Planning Proceeding (Case Number 24-E-0364)

Dear Ms. Phillips,

Volvo Group North America ("VGNA") welcomes the opportunity to provide comments to the New York State Public Service Commision ("NYPSC") regarding National Grid's filing in response to Case Number 24-E-0364.

VGNA offers its perspective as an active participant in the zero-emission ("ZE") transportation sector in New York, and as the nation's leading provider of ZE infrastructure and transport solutions. VGNA has spent years developing complete solutions for electromobility, and today – in North America – we are selling five configurations of the Volvo VNR Class 8 Electric[1] truck, the Mack LR Electric[2] waste hauler, the Mack MD Electric[3] work truck, and five electric Volvo Construction Equipment models[4].

A proactive approach to creating grid capacity for EV charging allows private and public fleet operators to plan and invest in the electrification of their vehicles more efficiently. In its filing, National Grid seeks to create essential electric grid capacity for vehicle electrification in Upstate New York – **this addresses a critical barrier for the widescale deployment of heavy-duty electric trucks.**

We also support the projects included in this proceeding that were first submitted in National Grid Electric Rate Case (Case 24-E-0322). Projects that seek to expand it in preparation for EV charging are crucial to enable companies like ours to fulfill our targets and continue to operate and grow in Upstate New York. National Grid's proposal to support electrification of charging solutions at both travel plazas in key freight corridors

[1] https://www.volvotrucks.us/trucks/vnr-electric/
[2] https://www.macktrucks.com/trucks/lr-series/lr-electric/
[3] https://www.macktrucks.com/trucks/md-electric/
[4] https://www.volvoce.com/global/en/our-offer/emobility/

and select industrial zones is comprehensive. These projects will help reduce uncertainty around charging infrastructure for fleets across the state, including ours.

VGNA applauds the NYPSC and National Grid for their vision and leadership in infrastructure planning for ZE vehicles in New York. VGNA is grateful for the opportunity to provide these comments and welcomes the opportunity to engage further on this and other matters. If you have any questions, please do not hesitate to contact Aravind Kailas, Ph.D., Advanced Technology Policy Director, Volvo Group North America at aravind.kailas@volvo.com or Kelly Bobek, State Government Relations Director, Volvo Group North America at kelly.bobek@volvo.com.

About the Volvo Group

Volvo Group drives prosperity through transport and infrastructure solutions, offering trucks, buses, construction equipment, power solutions for marine and industrial applications, financing and services that increase our customers' uptime and productivity. Founded in 1927, the Volvo Group is committed to shaping the future landscape of sustainable transport and infrastructure solutions. The Volvo Group is headquartered in Gothenburg, Sweden, employs almost 100,000 people and serves customers in more than 190 markets. North America is a major market for the Volvo Group, employs more than 17,000 people, and operates 10 manufacturing and remanufacturing facilities in seven U.S. states, as well as three plants in Canada and one in Mexico.

VGNA secured a $10M grant from the New York State Energy & Research Development Authority (NYSERDA) to bring zero-emission solutions to the busiest trucking hub in the State. Hunts Point in the South Bronx is home to one of the largest food distribution facilities in the world. This project will deploy several Volvo VNRe and Mack LRe trucks to support food delivery and rescue through an electric trucker's cooperative, leveraging a high-powered, freight-focused electric vehicle charging hub that fleets will share.

Oct 29, 2024

Hon. Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Agency Building 3
Albany, NY 12223-1350

This letter is to express our support for National Grid's filing in response to New York Public Service Commission's (PSC) Proactive Planning Grid Planning Proceeding (Case Number 24-E-0364). In its filing, National Grid seeks to create essential electric grid capacity for vehicle electrification in Upstate New York. We also support the projects included in this proceeding that were first submitted in National Grid Electric Rate Case (Case 24-E-0322)

As a company actively involved in the energy transition and committed to meeting New York State vehicle electrification goals, we recognize the importance of EV charging infrastructure to support the proliferation of zero-emissions medium- and heavy-duty vehicles. Grid capacity can be a significant barrier to EV installations. Projects that seek to expand it in preparation for EV charging are crucial to enable companies like ours to fulfill our targets and continue to operate and grow in Upstate New York.

We support the approval of National Grid's projects to create capacity for EV charging in Upstate New York. National Grid's proposal to support electrification of charging solutions at both travel plazas in key freight corridors and select industrial zones is comprehensive. These projects will help reduce uncertainty around charging infrastructure for fleets across the state, including ours. A proactive approach to creating grid capacity for EV charging allows private and public fleet operators to plan and invest in the electrification of their vehicles more efficiently.

Please reach out with further questions or inquiries.

With kind regards,

Daniel Schweizer

Attn: Daniel Schweizer
Policy & Regulatory
Zeem Solutions

Contact: Dschweizer@zeemsolutions.com
(619) 817-1274

Appendix 4: Project Data Sheets

Project Data Sheets

Transportation Electrification

I-90 System Capacity Upgrades

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094400 EV RS – Gee Road-Sub	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑ Distribution ☐Sub-Transmission ☑Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): D/SUB T System Capacity

Associated Funding Numbers (if applicable):

C094386 EV RS – Gee Road – T-Line

C094401 EV RS – Gee Road – D-Line

Description:

This project uses the granular load forecast study conducted by National Grid to determine the need for investments across the I-90 corridor to serve vehicle charging. In Chittenango the long-term forecast of charging capacity requirement for vehicle charging far exceeds the local feeder and substation limitations. National Grid therefore proposes the construction of a new distribution Substation with one 40MVA transformer and 4 open air Feeder positions. A new Control house will be installed.

Project Justification:

This Project is required to support forecasted EV charging capacity requirement from vehicle traffic at the Thruway's Chittenango Travel Plaza. Based on a granular fast-charging analysis utilizing vehicle telematics (Electric Highways Study), approximately 5 MW of EV charging capacity is needed by 2030 to meet fast-charging requirements for eastbound vehicle traffic on I-90 stopping at this site. This includes traffic from LDVs and MHDVs. The site requirement grows to 10 MW by 2040.

The distribution feeders serving this site are significantly constrained. The distribution feeders extend over 10 circuit miles before arriving at the travel plaza, which is at the very end of the feeder. The loading on the feeder and the distance present significant constraints to service. The feeder cannot

serve more than 3MVA of load before suffering from voltage limitations. The Company also may deploy mobile storage as a bridge to wires if the load grows more quickly than expected (see Mobile Battery Energy Storage Systems PDS, CO 94585). Beyond the feeder limitations, the forecasted load at the travel plaza will outgrow the available capacity at the Bridgeport substation between 2030 and 2035. The project therefore contemplates the construction of a greenfield substation to address the short- and long-term need of the travel plaza and its surrounding area. The area is seeing a growth of distributed renewable generation resources, which will also benefit from the construction of a greenfield substation. The substation creates an 'on ramp' for renewables seeking to move power up to the 115 kV system and keep them from getting bottled on the local distribution system, and curtailed. The construction of renewables in the area that will run through the substation and to the Thruway Plaza will provide locally produced and delivered power to electric vehicles charging at the Plaza.

Project Scope:

C094400: Install a new distribution Substation with one 40MVA transformer and 4 open air Feeder positions, and a new Control house.

C094386: Tap the adjacent Transmission line and connect to the new substation.

C094401: Install a double circuit 13.2kV from the new substation to the highway rest stop EV charging facilities. This includes boring under the highway and pad mount transformers to step down to 480V.

The two new feeders associated with the project will be energized before we receive a service request from the interconnecting customer or the full forecasted EV charging load at the travel plaza materializes. The feeders will be a resource to Distribution Planning beyond serving forecasted load at the Chittenango Thruway Plaza.

National Grid proposes that the costs associated with the feeders will not be borne by the interconnecting customer, and instead be recovered first through surcharge and then rolled into base rates. Accordingly, costs associated with the padmounted transformer(s) are also included as part of project scope. If the EV Make Ready Program is reauthorized similarly to the current Make Ready program, the cost of the padmounted transformer and other customer side infrastructure could be partially or completely funded by the Make Ready program.[1]

Customer Benefit:

[1] The energization of the proposed project will fall outside of the timeframe of the current EV Make-Ready Program approved by the New York Public Service Commission and offered from 2020-2025.

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094400 EV RS – Gee Road-Sub	

This project will create significant additional capacity for the installation of EV charging in the area, with primary focus being fast-charging to serve westbound traffic on I-90 at the Chittenango Thruway Service Area. The incremental capacity in this area will allow for 350-kW charging for LDVs and MHDVs (base scenario) and 1 MW charging for MHDVs. The New York Thruway Authority has proposed this location in a federal grant to install MHDV charging, including 1 MW charging.

The project may additionally help facilitate the interconnection of distributed generation in the area and provide enhanced resilience and reliability to enable broader load growth.

This project will support the achievement of the CLCPA, and zero-emission vehicle regulations from NY DEC and U.S. EPA. This corridor is also included in the National Zero-Emission Freight Corridor Strategy.

Alternatives:

The Company reviewed several alternative approaches. The planned scope was decided upon to ensure capacity was able to first meet 2030 fast-charging loads and accommodate future fast-charging load growth and/or higher-capacity (1 MW) chargers.

1. Status quo - The need to provide charging capacity for fast-charging will not be addressed without action. This could lead to load curtailment and disruption to the movement of passenger and commercial vehicles.
2. Sub-T station options have been considered, however this would still require some level of D-line & station rebuild/upgrade.
3. The Company modeled a dual bank substation option; the current option allows for four feeder positions that can reach a total of 40 MVA of incremental capacity which should be large enough for the forecasted.

NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. The Company adopted an analysis to determine where Mobile Battery Storage could address the near-term capacity expansion needs and has proposed storage at those sites where feasible.

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094400 EV RS – Gee Road-Sub	

Supplemental Information

Sanction Paper Number: N/A

CLCPA Phase 1 Project: ☐Yes ☑No

Transferred from Cases 24-E-0322: ☑Yes ☐ No

Disadvantaged Community: ☐ Yes ☑ No

System Capacity improvements benefit Disadvantaged Communities by meeting forecasted load growth and enabling the electrification of buildings, the installation of electric vehicle charging stations, and other similar electrification initiatives. These projects provide additional benefits for all DACs along I-90 by supporting electric vehicle adoption along the corridor, reducing pollution. Research shows that communities within 500 feet to highway corridors are prone to higher rates of asthma. In delivering such projects, the Company will take steps to mitigate potential adverse impacts on customers and members of the public, including avoiding disproportionately impacting Disadvantaged Communities.

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☑	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact: ☑Yes ☐ No

This project will support electrification of LDVs and MHDVs consistent with state greenhouse gas reduction mandates in the CLCPA. Project will help support reduction of pollutants within communities that host truck stops/service plazas and vehicle fleet depots, as well as those communities that flank the I-90 corridor. System Capacity upgrades additionally increasing capacity of the electric system to serve other load or interconnect distributed generation.

Funding and Schedule Information

Total Project Cost Breakdown: ($ MM)

C094400 - EV RS – Gee Road -Sub

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31	Total
C094400	CapEx	2.30	0.85	5.10	8.50	5.30	1.00	**23.05**

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094400 EV RS – Gee Road-Sub	

	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Total	**2.30**	**0.85**	**5.10**	**8.50**	**5.30**	**1.00**	**23.05**

C094386 EV RS – Gee Road – T-Line

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31	Total
C094386	CapEx	0.12	0.22	0.89	5.38	1.47	0.50	**8.58**
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Total	**0.12**	**0.22**	**0.89**	**5.38**	**1.47**	**0.50**	**8.58**

C094401 EV RS – Gee Road – D-Line

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31	Total
C094401	CapEx	0.12	0.22	1.07	7.45	1.99	0.50	**11.35**
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Total	**0.12**	**0.22**	**1.07**	**7.45**	**1.99**	**0.50**	**11.35**

Estimate Grade: 4.2

Begin Preliminary Engineering: 01/2024

Final Design Complete: 10/2027

Construction Start: 12/2028

In Service Date: 05/2031

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C094394 EV RS – Moore Road Substation	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☑Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): D/SUB T System Capacity

Associated Funding Numbers (if applicable):

C094383: EV RS – Moore Road – T-Line

C094396: EV RS – Moore Road – D-Line

Description:

This project will install a new distribution Substation with one 40MVA transformer and 4 open air Feeder positions. A new Control house will be installed as well.

Project Justification:

This Project is designed to support an initial and near-term needs from forecasted EV charging load generated by vehicles at the Thruway service area, as well as from a cluster of surrounding vehicle fleets. Based on a granular fast-charging analysis utilizing vehicle telematics (Electric Highways Study), 5 MW of EV charging capacity is needed by 2030 to meet charging requirements for eastbound vehicle traffic on I-90 stopping at this site. This includes traffic from light duty vehicles(LDV) and medium- and heavy-duty vehicles (MHDV). The DeWitt Plaza charging requirement grows to 10+ MW by 2040. Traffic dynamics in the greater Syracuse region are changing, the construction of the Micron facility and other factors may increase traffic flowing past, or stopping at DeWitt Travel Plaza.

Capacity created will also serve vehicle fleets in this area, which will electrify under state vehicle electrification mandates and would currently be served from the East Molloy substation (which currently serves the Thruway service area). Based on a granular vehicle fleet depot charging analysis and

forecast, overnight load associated with fleet depots is projected to be 15 MW by 2030 and 41 MW by 2035.

This new substation complements near-term work in the DeWitt/East Syracuse area, such as feeder upgrades proposed to help accommodate fleet charging load growth in the region. The new substation will also be one of several complementary investments needed to serve the broader area vehicle fleet depot and travel plaza charging need of over 130 MW by 2050. Other projects include work proposed at the Peat Street substation in the rate case, as well as additional future work at East Molloy to install new feeders (which could require undergrounding) and a new transformer.

Capacity created by the new substation will also support electric load growth in the East Syracuse area being driven by the construction of a major chip fabrication facility, which will significantly drive population growth and economic development in the region, the full extent of the impact is still unknown.

[redacted]

Project Scope:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C094394 EV RS – Moore Road Substation	

C094394: Install a new distribution Substation with one 40MVA transformer, 4 open air Feeder positions, and a new Control house.

C094383: Install twelve (12) transmission structures, approximately 4600 circuit feet of 795 kcmil ACSR and approximately 4600 feet of 3/8" EHS steel shield wire. Remove eight (8) transmission structures, and 2,200 circuit feet of conductor.

C094396: Install a double circuit 13.2kV from the new substation to the highway rest stop EV charging facilities. This scope includes boring under the highway and pad mounted transformers to step down to 480V.

The two new feeders associated with the project will be energized before we receive a service request from the interconnecting customer or the full forecasted EV charging load at the travel plaza materializes. The feeders will be a resource to Distribution Planning beyond serving forecasted load at the DeWitt Thruway Plaza.

National Grid proposes that the costs associated with the feeders will not be borne by the interconnecting customer, and instead be recovered first through surcharge and then rolled into base rates. Accordingly, costs associated with the padmounted transformer(s) are also included as part of project scope. If the EV Make Ready Program is reauthorized similarly to the current Make Ready program, the cost of the padmounted transformer and other customer side infrastructure could be partially or completely funded by the Make Ready program.[1]

Customer Benefit:

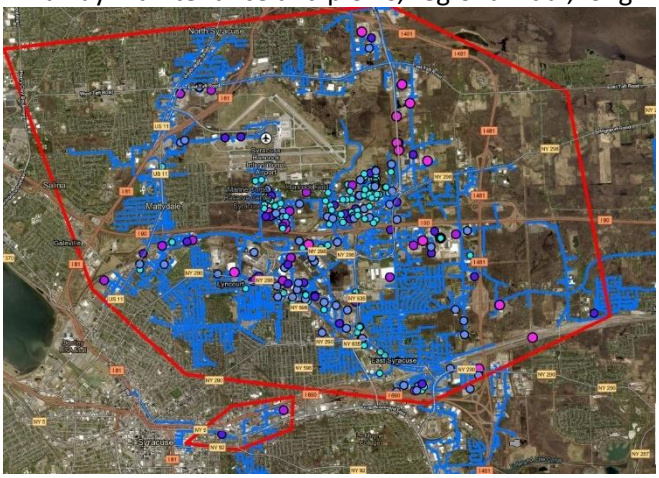
These projects will create significant additional capacity for the installation of EV charging in the area, and the near-term driver is fast-charging to serve eastbound traffic on I-90 at the Dewitt Thruway Service Area. The incremental capacity in this area will allow for 350-kW charging for LDVs and MHDVs (base scenario) and 1 MW charging for MHDVs. The New York Thruway Authority has proposed this location in a federal grant to install MHDV charging, including four 350 kW chargers, and one 1 megawatt charger.

Reliability of the greater East Syracuse area will be enhanced by the addition of this substation, attendant feeders, and the feeder upgrades in the area.

It will also provide capacity for vehicle fleet depot charging in the surrounding area that includes disadvantaged communities (DAC). A map of fleets included in the granular fleet cluster study is

[1] The energization of the proposed project will fall outside of the timeframe of the current EV Make-Ready Program approved by the New York Public Service Commission and offered from 2020-2025.

included below. Site types include fleets operating school buses, transit agencies, county vehicles, Thruway maintenance and plows, regional haul, long-haul, intermodal transfer facilities, and more.



This project will support the achievement of the CLCPA, and zero-emission vehicle regulations from NY DEC and U.S. EPA. This corridor is also included in the National Zero-Emission Freight Corridor Strategy.

Alternatives:

The Company reviewed several alternative approaches. The planned scope was decided upon to ensure capacity was able to first meet 2030 fast-charging loads, accommodate future fast-charging load growth and/or higher-capacity (1 MW) chargers, and allow expansion of the system to address unpredictable spot loads created by fleet depot charging load, airport expansion, and economic development that are expected to happen in the greater Syracuse area. As the company progresses through project development it will continue to engage customers in the area and assess alternatives that can deliver sufficient capacity and reliability, and where possible, cost savings. Should the new substation be deemed replaceable by expansion or rebuilding of a an existing substation the company will pursue that option.

1. Status quo – The need to provide charging capacity for fast-charging and fleet clusters will not be addressed without action. This could lead to load curtailment and disruption to the movement of passenger and commercial vehicles.
2. Sub-T station options have been considered, however this would still require some level of D-line & station rebuild/upgrade and would not meet the ultimate needs of the area, and would need to be replaced as the loads exceeded the capability of the sub-T solution.
3. The Company modeled a dual bank substation option; the current option includes only a single transformer that will include 2 feeders, but can expand to accommodate additional feeders as the load grows.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C094394 EV RS – Moore Road Substation	

See the next section for a discussion of DER / NWA options.
DER/NWA Analysis:
The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As this project has System Capacity as the main driver, NWA will continue to be considered and evaluated throughout the process.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C094394 EV RS – Moore Road Substation	

Supplemental Information

Sanction Paper Number: N/A

CLCPA Project: ☐Yes ☑ No

Transferred from Cases 24-E-0322: ☑ Yes ☐ No

Article 7 Project: ☐Yes ☑ No

Disadvantaged Community: ☑ Yes ☐ No

This project will create system capacity for EV charging in DACs in the immediate area. System Capacity improvements benefit Disadvantaged Communities by meeting forecasted load growth and enabling the electrification of buildings, the installation of electric vehicle charging stations, and other similar electrification initiatives. These projects provide additional benefits for all DACs along I-90 by supporting electric vehicle adoption along the corridor, reducing pollution. Research shows that communities within 500 feet to highway corridors are prone to higher rates of asthma. In delivering such projects, the Company will take steps to mitigate potential adverse impacts on customers and members of the public, including avoiding disproportionately impacting Disadvantaged Communities.

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☑	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Greenhouse Gas Emissions Impact: ☑Yes ☐ No

This project will support electrification of LDVs and MHDVs consistent with state greenhouse gas reduction mandates in the CLCPA. Project will help support reduction of pollutants within communities that host truck stops/service plazas and vehicle fleet depots, as well as those communities that flank the I-90 corridor. System Capacity upgrades additionally increasing capacity of the electric system to serve other load or interconnect distributed generation.

Funding and Schedule Information

Total Project Cost Breakdown: ($MM)

C094394: EV RS – Moore Road Sub

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C094394 EV RS – Moore Road Substation	

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31	Total
C094393	CapEx	2.30	0.85	5.10	7.10	5.85	1.00	**22.20**
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Total	**2.30**	**0.85**	**5.10**	**7.10**	**5.85**	**1.00**	**22.20**

C094396: EV RS – Moore Road D-Line

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31	Total
C094392	CapEx	0.12	0.22	1.58	7.15	3.04	0.50	**12.61**
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Total	**0.12**	**0.22**	**1.58**	**7.15**	**3.04**	**0.50**	**12.61**

C094383: EV RS – Moore Road T-Line

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31	Total
C094389	CapEx	0.12	0.22	1.07	3.75	4.50	0.75	**10.41**
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Total	**0.12**	**0.22**	**1.07**	**3.75**	**4.50**	**0.75**	**10.41**

Project spend profiles delivery can be delayed depending on delay in lead times and other project delays. The Company will begin construction-related activities, including major expenditures for equipment, promptly after receiving approval.

Estimate Grade: 4.2

Begin Preliminary Engineering: 01/2024

Final Design Complete: 10/2027

Construction Start: 12/2028

In Service Date: 05/2031

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094393 EV RS - Pattersonville-Sub	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑ Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): D/SUB T_System Capacity

Associated Funding Numbers (if applicable):

C094392: EV RS – Pattersonville D-Line

C094389: EV RS – Pattersonville T-Line

C095527: EV Florida Pattersonville TP 50153

Description:

These projects seek to address the immediate short-term constraint and long-term solution for charging capacity requirement forecasted at the Pattersonville Travel Plaza. This location is forecasting a need of 4.5 MW of charging capacity requirement by 2030 and 8.4 MW of load by 2035.

Phase one of the project will install infrastructure on the Florida 50153 feeder to increase the available capacity required to service the expected load.

Phase two envisions the construction of a new distribution Substation with one 40MVA transformer and 2 open air Feeder positions including a control house, distribution feeders and transmission line taps to serve the additional charging capacity required as well as area load and other benefits.

Project Justification:

This plaza includes significant truck parking, and will soon have enhanced trucker services at the Pattersonville Travel Plaza, making it a critical stop for medium and heavy-duty truck charging. This

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094393 EV RS - Pattersonville-Sub	

Project is required to support forecasted EV charging load at this Thruway rest stop. This site serves westbound vehicles and is forecasted to experience significant load growth - 5 MW of EV charging capacity is required by 2030, and 13 MW by 2040.

The Pattersonville Travel Plaza is currently served via the Florida 50153, this feeder does not have the capacity to serve the entire charging capacity required for EV charging of LDV and MHDV. The feeder travels a significant distance before reaching the travel plaza and currently experiences voltage reliability concerns. Phase one of the project covers upgrades on the 50153 feeder. Up to 5.0 MVA of capacity is anticipated to be available at the Pattersonville travel plaza in the summer of 2025 with the installation of a bank of 3 – 333 kVA voltage regulators on the Florida 50153 feeder to address voltage concerns brought on by the additional load.

In the long-term, the Company forecasts that the feeder will be the limiting constraint to deliver power to the travel plaza post-2030. The proposed solution involves the construction of a new substation to feed the travel plaza and growing load in the area. Given the timeline associated with building a greenfield substation, construction must begin immediately. Beyond serving the travel plaza, the substation will bring additional benefits to the region. Pattersonville and surrounding towns have seen an increase in development of distributed generation, and a greenfield substation would help interconnect these facilities in a faster and more cost-effective manner. This project will support the achievement of the CLCPA, and zero-emission vehicle regulations from NY DEC and U.S. EPA. This corridor is also included in the National Zero-Emission Freight Corridor Strategy.

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094393 EV RS - Pattersonville-Sub	

[redacted]

Project Scope:

C095527: Install 3-333kVA regulators in the vicinity of P10 Perkins Street and install a single-phase regulator on Bullshead Rd in the vicinity of P31.

C094393: Install a new 115-13.2kV distribution Substation with one 40MVA transformer and 2 open air Feeder positions. A new Control house will be installed.

C094389: This project will require tapping the adjacent 115 kV line in order to connect the new distribution substation.

C094392: This project is to install a double circuit 13.2kV 477 feeders from the new substation to the Pattersonville Thruway Service Plaza. This includes boring under the highway and padmoutned transformer to step down to 480V.

The two new feeders associated with the project will be energized before we receive a service request from the interconnecting customer or the full forecasted EV charging load at the travel plaza materializes. The feeders will be a resource to Distribution Planning beyond serving forecasted load at the Pattersonville Thruway plaza. For example:

1. Pattersonville Thruway Service Plaza is almost exactly between the Florida substation and the Rotterdam substation in the greater Scotia / Rotterdam area. As such, it is at the very end of a feeder originating from the Florida substation. There are several large commercial and industrial customers served off the same feeder, including some very large distribution warehouses. As charging is installed at those locations the loading of the existing feeder will exceed its ratings.

2. The adjacent Florida substation and therefore building a new substation in this area will allow for greater ability to interconnect renewables in the area, which the company has seen an increase in recently.
3. As loads in the Greater Amsterdam area increase through heating and transportation electrification more capacity will be required at the Florida substation. Switching loads south of the Thruway to the new Pattersonville substation will make that possible. The Pattersonville substation will also support loads between Pattersonville and Scotia / Rotterdam area. Because the loads in the Scotia / Rotterdam are expected to grow exponentially in the next ten years, largely drive by building electrification and large EV spot loads at warehouse districts and highway interchanges. The Rotterdam substation is expected to be constrained in the next five years and switching feeder Rotterdam 53 to the new Pattersonville substation will create the much needed capacity at the Rotterdam substation.

National Grid proposes that the costs associated with the feeders will not be borne by the interconnecting customer, and instead be recovered first through surcharge and then rolled into base rates. Accordingly, costs associated with the padmounted transformer(s) are also included as part of project scope. If the EV Make Ready Program is reauthorized similarly to the current Make Ready program, the cost of the padmounted transformer and other customer side infrastructure could be partially or completely funded by the Make Ready program.[1]

Long Lead-Time Materials:

The project scope requires installation of 333 kVA regulators which have long lead times.

Customer Benefit:

These projects will create significant additional capacity for the installation of EV charging in the area, with primary focus being fast-charging on I-90 at the Pattersonville Thruway Plaza. The new greenfield substation will also facilitate the interconnection of new distributed generation resources being developed in the Pattersonville area. The immediate area around the travel plaza has seen an increase in the development of renewable energy and there is no substation in close proximity to it to enable a faster and more cost-effective interconnection. Enhance resilience and reliability for customers in the region. The Company has presented this urgent need in the MHDV Proceeding technical conferences. This project serves adjacent DACs, along with DACs along the corridor. The project will also support the interconnection of renewables in the area.

Alternatives:

[1] The energization of the proposed project will fall outside of the timeframe of the current EV Make-Ready Program approved by the New York Public Service Commission and offered from 2020-2025.

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094393 EV RS - Pattersonville-Sub	

The Company reviewed several alternative approaches

1. Sub-T station options have been considered, however this would still require some level of D-line & station rebuild/upgrade
2. Status quo - The near term need will not be addressed, leading to large scale load curtailment and disruption to the movement of passenger and commercial vehicles
3. OSE modeled dual bank substation options too , current option is expandable

NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. The Company adopted an analysis to determine where mobile battery storage could address the near-term capacity expansion needs and has proposed storage at those sites where feasible.

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094393 EV RS - Pattersonville-Sub	

Supplemental Information

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☑Yes ☐ No

CLCPA Phase 1 Project: ☐Yes ☑ No

Article 7 Project: ☐Yes ☑ No

Disadvantaged Community: ☐Yes ☑ No

System Capacity improvements benefit Disadvantaged Communities by meeting forecasted load growth and enabling the electrification of buildings, the installation of electric vehicle charging stations, and other similar electrification initiatives. In delivering such projects, the Company will take steps to mitigate potential adverse impacts on customers and members of the public, including avoiding disproportionately impacting Disadvantaged Communities.

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☑	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

This project will support electrification of LDVs and MHDVs consistent with state greenhouse gas reduction mandates in the CLCPA. Project will help support reduction of pollutants within communities that host truck stops/service plazas and vehicle fleet depots, as well as those communities that flank the I-90 corridor. System Capacity upgrades additionally increasing capacity of the electric system to serve other load or interconnect distributed generation.

Funding and Schedule Information

Total Project Cost Breakdown: ($ MM)

C095527: EV Florida Pattersonville TP 50153

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094393 EV RS - Pattersonville-Sub	

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C095527	CapEx	0	0	20	155	0	0	175
	OpEx	0	0	0	50	0	0	50
	Removal	0	0	0	25	0	0	25
	Total	0	0	20	230	0	0	250

C094393: EV RS – Pattersonville Sub

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31		Total
C094393	CapEx	1.20	1.10		2.70	6.70	6.90	1.00	**19.60**
	OpEx	0.00	0.00			0.00	0.00	0.00	**0.00**
	Removal	0.00	0.00		0.00	0.00	0.00		**0.00**
	Total	**1.20**	**1.10**		**2.70**	**6.70**	**6.90**	**1.00**	**19.60**

C094392: EV RS – Pattersonville D-Line

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31	Total
C094392	CapEx	0.12	0.22	1.03	6.96	6.25	1.75	**16.33**
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Total	**0.12**	**0.22**	**1.03**	**6.96**	**6.25**	**1.75**	**16.33**

C094389: EV RS – Pattersonville T-Line

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31	Total
C094389	CapEx	0.12	0.22	0.74	3.58	1.02	0.50	**6.18**
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Total	**0.12**	**0.22**	**0.74**	**3.58**	**1.02**	**0.50**	**6.18**

Estimate Grade: 4.2

Begin Preliminary Engineering: 01/2024

Final Design Complete: 10/2027

Construction Start: 12/2028

In Service Date: 05/2031

nationalgrid	Significant Distribution Capital Investment Plan Projects and Programs	
	C094390 EV RS - Angola -Sub	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☑ Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): D/SUB T System Capacity

Associated Funding Numbers (if applicable):

C094381: EV RS Angola T-Line

C096905: EV RS Angola Sub T-Line

C094391: EV RS Angola D-Line

C089710: Angola D-Line Reconductoring

Description:

In order to serve the expected EV charging capacity requirement forecasted by National Grid for customers at this travel plaza, National Grid proposed the construction of a new distribution Substation with one 40MVA transformer and 2 open air positions. A new Control house will be installed.

Project Justification:

This Project is required to support forecasted EV charging capacity requirement at the Thruway's Angola Travel Plaza. The distribution feeders serving this site are significantly constrained, offering no capacity for EV charging (there are no chargers at site today despite it being one of the sites with the highest forecast load). This site includes charging for eastbound AND westbound vehicles, and therefore is forecasted to experience significant load growth - 10 MW of EV charging capacity by 2030, and 30 MW by 2040. Angola Service Plaza is the first Thruway Plaza that vehicles traveling from Pennsylvania to NY and beyond to Canada. And vice versa, The Plaza is the first official Thruway service plaza that vehicles traveling from Canada and into Pennsylvania and points beyond encounter in NY and on the I-90 system. The site also has significant truck and light-duty vehicle parking.

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094390 EV RS - Angola -Sub	

National Grid has identified interim solutions to solve for the immediate constraints. Project C089710and Project C094585 propose the reconductoring of the feeder directly serving the travel plaza and the installation of a mobile energy storage system, respectively. These solutions are expected to provide short-term relief to service to the travel plaza. These solutions, in combination with close coordination with the Thruway's charging developer, will be effective in dealing with constraints and curtailment through 2031, when the proposed greenfield substation will be operational.

In the long-term, load growth is expected to generate the need for a new greenfield substation in the area. The substation is also projected to be used and useful beyond the needs of travel plaza and serve additional load growth in Angola and surrounding towns. This project will also support distributed generation interconnection in the area.

This project will support the achievement of the CLCPA, and zero-emission vehicle regulations from NY DEC and U.S. EPA. This corridor is also included in the National Zero-Emission Freight Corridor Strategy.

[redacted]

Project Scope:

C094390: This project will install a new distribution Substation with one 40MVA transformer and 4 open air positions. A new Control house will be installed.

C094391: This project is to install an underground 34.5kV circuit the highway rest stop EV charging facilities. This includes boring under the highway and padmount equipment to step down to 480V.

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094390 EV RS - Angola -Sub	

C096905: This project is to upgrade and reconductor the existing overhead 34.5kV circuit.

C094381: This project installs new transmission line taps to the new distribution substation for EV Highways rest stop charging.

The new feeders associated with the project will be energized before we receive a service request from the interconnecting customer or the full forecasted EV charging load at the travel plaza materializes. The feeders will be a resource to Distribution Planning beyond serving forecasted load at the Angola Thruway plaza.

National Grid proposes that the costs associated with the feeders will not be borne by the interconnecting customer, and instead be recovered first through surcharge and then rolled into base rates. Accordingly, costs associated with the padmounted transformer(s) are also included as part of project scope. If the EV Make Ready Program is reauthorized similarly to the current Make Ready program, the cost of the padmounted transformer and other customer side infrastructure could be partially or completely funded by the Make Ready program.[1]

Customer Benefit:

These projects will create significant additional capacity for the installation of EV charging in the area, with primary focus being fast-charging on I-90 at the Angola Thruway Plaza serving both directions of traffic. Enhance resilience and reliability for customers in the region. The Company has presented on this urgent need in the MHDV Proceeding technical conferences. This project serves an adjacent DAC, along with DACs along the corridor.

Alternatives:

Load estimates with each EV load curve revision grow, the need for addressing resiliency and reliability compounds and options reduce: (1)Sub-T station options have been considered, however this would still require some level of D-line & station rebuild/upgrade (2) Status quo - The near term need will not be addressed, leading to large scale load curtailment and disruption to the movement of passenger and commercial vehicles (3) OSE modeled dual bank substation options too, current option is expandable

NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can

[1] The energization of the proposed project will fall outside of the timeframe of the current EV Make-Ready Program, approved by the New York Public Service Commission and offered from 2020-2025.

practicably be addressed with an NWA. The Company adopted an analysis to determine where mobile battery storage could address the near-term capacity expansion needs and has proposed storage at those sites where feasible.

nationalgrid	Significant Distribution Capital Investment Plan Projects and Programs	
	C094390 EV RS - Angola -Sub	

Supplemental Information

Sanction Paper Number: N/A

CLCPA Phase 1 Project: ☐Yes ☑ No

Transferred from Cases 24-E-0322: ☑ Yes ☐ No

Disadvantaged Community Impact: ☐Yes ☑ No

System Capacity improvements benefit Disadvantaged Communities by meeting forecasted load growth and enabling the electrification of buildings, the installation of electric vehicle charging stations, and other similar electrification initiatives. These projects provide additional benefits for all DACs along I-90 by supporting electric vehicle adoption along the corridor, reducing pollution. Research shows that communities within 500 feet to highway corridors are prone to higher rates of asthma. In delivering such projects, the Company will take steps to mitigate potential adverse impacts on customers and members of the public, including avoiding disproportionately impacting Disadvantaged Communities.

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☑	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

This project will support electrification of LDVs and MHDVs consistent with state greenhouse gas reduction mandates in the CLCPA. Project will help support reduction of pollutants within communities that host truck stops/service plazas and vehicle fleet depots, as well as those communities that flank the I-90 corridor. System Capacity upgrades additionally increasing capacity of the electric system to serve other load or interconnect distributed generation.

Funding and Schedule Information

Total Project Cost Breakdown: ($ MM)

C094390 - EV RS - Angola -Sub

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31	Total
C094390	CapEx	1.20	1.10	2.70	7.60	6.90	1.00	**20.50**
	OpEx	0.00	0.00	0.00		0.00	0.00	**0.00**

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094390 EV RS - Angola -Sub	

	Removal	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Total	**1.20**	**1.10**	**2.70**	**7.60**	**6.90**	**1.00**	**20.50**

C094381: EV RS Angola T-Line

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31	Total
C094381	CapEx	0.12	0.22	0.83	4.57	4.65	0.50	**10.89**
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Total	**0.12**	**0.22**	**0.83**	**4.57**	**4.65**	**0.50**	**10.89**

C094391: EV RS Angola D-Line

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31	Total
C094391	CapEx	0.13	0.25	0.87	5.12	5.16	0.50	**12.03**
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Total	**0.13**	**0.25**	**0.87**	**5.12**	**5.16**	**0.50**	**12.03**

Estimate Grade: 4.2

Begin Preliminary Engineering: 01/2024

Final Design Complete: 10/2027

Construction Start: 12/2028

In Service Date: 05/2031

nationalgrid	Significant Distribution Capital Investment Plan Projects and Programs	
	C094380 EV RS - Alleghany Rd - Sub	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑ Distribution ☐Sub-Transmission ☑ Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): D/SUB T System Capacity

Associated Funding Numbers (if applicable):

C094378 - EV RS - Pembroke (Alleghany Rd)-T-line

C094387 - EV RS - Pembroke (Alleghany Rd)-D-line

Description:

This project will install a new distribution Substation with one 40MVA transformer and 2 open air Feeder positions to address the forecasted granular load growth at 3 truck stops/convenience stores located off exit 48A of the New York Thruway. A new Control house will be installed.

Project Justification:

This Project is required to support the additional EV charging in this area with multiple truck stops and passenger fueling areas. The EV charging need is a combination of demand from light-duty vehicles and medium-and heavy-duty vehicles. The three highway sites are located at the interchange of I-90 and New York State Route 77: [redacted]. Two of the customer sites also include trucker services, and a significant amount of truck parking, which is an important consideration since there is a truck parking shortage in NY and across the country. These fueling sites have submitted initial customer requests to increase their available capacity to deploy an initial wave of chargers. They have also signaled to National Grid the intention to build out their investments in the area and include those intentions in their letters of support attached to this filing.

There is also a large industrial park within ¼ mile of the project site that is being developed. Two large logistics warehouses are currently in construction, one of which has a summer peak of 2 MW, and

winter peak of 3 MW due to installation of electric heating. The growth of this industrial park and other load growth on the Knapp Road Substation feeder 22651 has already entirely diminished the capacity on this feeder. The bulk of the new load growth is happening at the very end of this feeder, which makes it much harder to manage. There is also load growth happening on the local distribution system due to an industrial park facility north of the Thruway, the Stamp facility, which is expected to attract chip fab and other energy intensive customers.

The construction of the Alleghany substation will relieve pressure on Feeder 22651 and allow a feeder tie for load transfers, operational flexibility, and switching during maintenance and restoration. This would improve both the reliability, resilience, and restoration times for the entire area.

This site includes charging for eastbound and westbound vehicles and is forecasted to experience significant load growth. Available capacity on the feeder is already exhausted, and by 2030 EV charging capacity reaches 10 MW and exceeds 30 MW by 2040. In 2023 Feeder 22651 serving the area had 5MVA of capacity to accommodate new interconnections. However, the fast pace of electrification and economic development in the area has quickly evaporated that capacity to nearly zero as of this filing. The project will help alleviate the load constraints in the area, further allow the development and electrification of Pembroke and neighboring areas. This project will support the achievement of the CLCPA, and zero-emission vehicle regulations from NY DEC and U.S. EPA. This site and I-90 corridor are also included in the Department of Energy and Joint Office for Energy and Transportation's National Zero-Emission Freight Corridor Strategy.

[redacted]

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094380 EV RS - Alleghany Rd - Sub	

Project Scope:

Project C094380: This project will install a new distribution Substation with one 40MVA transformer and 2 open air feeder position, which can expand to 4 outgoing feeders. A new Control house will be installed.

Project C094387: This project is to install a two circuit 13.2kV underground feeders from the new substation to the customer facilities. This project includes underground conduit, and feeders that will be energized when the station is complete.

Project C094378: This project is to install new transmission line taps connecting the new distribution substation to the immediately overhead 115 kV line.

The two new feeders associated with the project will be energized before we receive a service request from the interconnecting customer or the full forecasted EV charging load in the area materializes. The feeders will be a resource to Distribution Planning beyond serving forecasted load at the three travel plazas as described above.

National Grid proposes that the costs associated with the feeders will not be borne by the interconnecting customer, and instead be recovered first through surcharges and then rolled into base rates. Accordingly, costs associated with the padmounted transformer(s) are also included as part of project scope. If the EV Make Ready Program is reauthorized similarly to the current Make Ready program, the cost of the padmounted transformers and other customer side infrastructure could be partially or completely funded by the Make Ready program.[1]

Customer Benefit:

These projects will create significant additional capacity for EV charging and heating electrification in the area, with primary focus being LDV charging and MHDV charging at three current fueling areas [redacted] near an existing 115-kV line on I-90 on Alleghany Rd., as well as warehouse growth in the immediate growth. The Company presented on this urgent need in the MHDV Proceeding technical conferences. Proactively beginning the construction of this substation and initial feeders will allow the customers to install additional charging and move at pace to meet the charging needs at their sites. This project serves a disadvantaged community.

[1] The energization of the proposed project will fall outside of the timeframe of the current EV Make-Ready Program approved by the New York Public Service Commission and offered from 2020-2025.

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094380 EV RS - Alleghany Rd - Sub	

Alternatives:
The Company reviewed several alternative approaches: 1. Sub-T station options have been considered; however, this would still require some level of D-line & station rebuild/upgrade and would not meet the future load projections in the area. 2. Status quo - The near-term need will not be addressed, leading to large scale load curtailment and disruption to the movement of passenger and commercial vehicles. 3. Option Solution Engineering modeled dual bank substation options too, current option is expandable to grow with the load in the area.
NWA Analysis:
The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. The Company adopted an analysis to determine where mobile battery storage could address the near-term capacity expansion needs and has proposed storage at those sites where feasible.

nationalgrid	Significant Distribution Capital Investment Plan Projects and Programs	
	C094380 EV RS - Alleghany Rd - Sub	

Supplemental Information

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☑ Yes ☐ No

CLCPA Phase 1 Project: ☐Yes ☑No

Article 7 Project: ☐Yes ☑ No

Disadvantaged Community Impact: ☑ Yes ☐ No

This project will create system capacity for EV charging in DACs in the immediate area. System Capacity improvements benefit Disadvantaged Communities by meeting forecasted load growth and enabling the electrification of buildings, the installation of electric vehicle charging stations, and other similar electrification initiatives. These projects provide additional benefits for all DACs along I-90 by supporting electric vehicle adoption along the corridor, reducing pollution. Research shows that communities within 500 feet to highway corridors are prone to higher rates of asthma. In delivering such projects, the Company will take steps to mitigate potential adverse impacts on customers and members of the public, including avoiding disproportionately impacting Disadvantaged Communities.

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☑	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

This project will support electrification of LDVs and MHDVs consistent with state greenhouse gas reduction mandates in the CLCPA. Project will help support reduction of pollutants within communities that host truck stops/service plazas and vehicle fleet depots, as well as those communities that flank the I-90 corridor. System Capacity upgrades additionally increasing capacity of the electric system to serve other load or interconnect distributed generation in the area.

Funding and Schedule Information

Total Project Cost Breakdown: ($ MM)

All Values in USD MMs

C094380 - EV RS - Pembroke (Alleghany Rd)-Sub

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31	Total

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094380 EV RS - Alleghany Rd - Sub	

C094380	CapEx	2.30	0.85	5.10	7.67	5.85	1.00	**22.77**
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Total	**2.30**	**0.85**	**5.10**	**7.67**	**5.85**	**1.00**	**22.77**

C094378 - EV RS - Pembroke (Alleghany Rd)-T-line

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31	Total
C094378	CapEx	0.12	0.18	0 95	2.85	2.10	0.50	**6.70**
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Total	**0.12**	**0.18**	**0.95**	**2.85**	**2.10**	**0.50**	**6.70**

C094387 - EV RS - Pembroke (Alleghany Rd)-D-line

Project Number	Spend	FY26	FY27	FY28	FY29	FY30	FY31	Total
C094387	CapEx	0.12	0 28	1.19	5.70	5.75	0.50	**13.54**
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
	Total	**0.12**	**0.28**	**1.19**	**5.70**	**5.75**	**0.50**	**13.54**

Estimate Grade: 4.2

Begin Preliminary Engineering: 01/2024

Final Design Complete: 10/2027

Construction Start: 12/2028

In Service Date: 05/2031

Project Data Sheets

Transportation Electrification

Mobile Battery Energy Storage

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094585/ C094584/ C094583 Mobile Battery Energy Storage Systems	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): Distribution System Capacity

Associated Funding Numbers (if applicable):

C094585 – Mobile Battery Energy Storage

C094584 – Mobile Battery Energy Storage

C094583 – Mobile Battery Energy Storage

Description:

National Grid seeks approval to procure, own, and operate mobile battery energy storage systems at 3 locations of thermal and power quality concerns to alleviate immediate constraints related to vehicle electrification and charging demands. This innovative approach to emerging spot loads will help National Grid better respond to demands on its system, improving charging infrastructure in New York State. The proposed batteries sizing will be tailored to the specified locations, where incremental mobile storage units may be included for larger power and energy capacity required.

The Company is conducting area studies and granular forecasts to determine the highest priority locations for these mobile battery energy storage systems and analysis is still ongoing. The initial list of sites considered are:

West – Ontario, Angola, Pembroke, and off-Thruway travel plazas in Pembroke area
Central – Oneida, Chittenango
East – Guilderland

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094585/ C094584/ C094583 Mobile Battery Energy Storage Systems	

Given the dynamic nature of spot loads related to charging, the flexibility provided by the mobile battery energy storage systems will ensure National Grid is able to reevaluate needs of these sites as appropriate.

Project Justification:

We have identified three Thruway plazas with near-term need for mobile storage to provide added capacity as our initial set of sites for deployment.

Angola – Angola ranked as one of the sites with highest short- and long-term vehicle charging capacity requirement in National Grid's Electric Highway study[1]. The travel plaza is also facing immediate levels of constraint. National Grid is currently fulfilling a request from [redacted] for 2.5MVA of charging. Once that is completed, available capacity on the feeder facing the travel plaza will be zero. As the Thruway looks to continue building out charging infrastructure in Angola (it has been included as a site in the Thruway's latest CFI application), National Grid is looking to mobile battery as part of an immediate short-term solution. Mobile battery storage coupled with a small reconductoring project (C089710) will provide the travel plaza with an added 4MW of capacity during peak times as a bridge-to-wire solution. We will continue our area studies on the efficacy of the battery in the travel plaza.

Chittenango – In Chittenango, the existing feeder capacity of 3MVA and the added capacity provided by the mobile battery will act as a bridge-to-wire before the long-term greenfield substation solution is energized in 2031.

Guilderland – There is an immediate constraint at Guilderland to serve the additional load forecast in our Electric Highway study. As with the Angola Travel Plaza, National Grid is currently working to serve a customer request to install charging at Guilderland. Once that is completed, capacity at the travel plaza will be limited by voltage concerns in the feeder serving the travel plaza. Placing the battery in Guilderland will help alleviate capacity constraints during rush hour traffic and projected high demand times for charging.

Mobile Storage is specifically being scoped as the preferred solutions for these locations due to the planning and operational load relief requirements having a shorter service life than the expected lifespan of the mobile unit; therefore, mobile storage units may be utilized to meet multiple planning and operational load relief requirements over their service. Utility ownership is being pursued for these locations to enable timely and efficient integration of the mobile storage units.

[1] Electric Highways: Accelerating and Optimizing Fast-Charging Deployment for Carbon-Free Transportation (referred to in text as the Electric Highways Study). National Grid, CALSTART, RMI, Stable Auto, and Geotab. November 2022. https://www.nationalgrid.com/document/148616/download

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094585/ C094584/ C094583 Mobile Battery Energy Storage Systems	

Although the Company has initially identified these three locations for the mobile storage systems, analysis is still ongoing and may change as we continue to complete area studies and continue to receive load requests across the service territory. The urgent criteria for a site may vary depending on changes to capacity on feeders. National Grid has seen large changes in available capacity on feeders serving service plazas in the past six months, so other changes may occur between filing and deployment of the units.

Further, National Grid may make use of these units beyond electric vehicle charging support. The Company understands this technology can and is being deployed to serve different use cases and plans to conduct a study to define requirements for and feasibility of additional (or secondary) use cases.

Project Scope:

The project scope includes a Request for Proposal (RFP) from National Grid to procure mobile battery units, conduct site preparation, and construction of interconnection. National Grid ran a Request for Information (RFI) in 2024 to better understand the landscape, and expects to issue the RFP once project approval is secured. Following project approval, National Grid will proceed with preparing the sites where the units will be placed. This work will include graveling, fencing, and all other work necessary to ensure the safety and operations of the battery units.

The project scope also includes the costs related to interconnection of the battery. These smaller projects may be related to small distribution line upgrades, voltage regulators, or transformers necessary to interconnect the battery. While mobile battery solutions are mostly self-contained in terms of electrical infrastructure, there are differences between vendors and solutions. Following the completion of the RFP and vendor selection, National Grid will be able to develop a complete scope on interconnection costs and projects.

While we expect the units to be delivered and energized by December 2026, this schedule is based on initial results and vendor feedback from the RFI noted above. This schedule may be adjusted after responses from the RFP are received and lead times for items like transformers are factored in.

Customer Benefit:

This project is intended to create near-term capacity to enable charging of electric vehicles at a NY Thruway Travel Plaza. The projects support charging in public charging locations and will deliver benefits to our customers as well as all other New Yorkers that utilize charging facilities. Further, these projects will also play a part in enabling the electrification of transportation in New York, lowering overall emission levels in the transportation sector. The mobile nature of the batteries means they could be used to address other system needs when the original constraint is addressed.

Alternatives:

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094585/ C094584/ C094583 Mobile Battery Energy Storage Systems	

National Grid evaluated alternatives to providing capacity relief across the studied travel plazas. The Company chose to procure Mobile battery energy storage systems to serve 3 different locations as a way to provide interim relief to constrained areas. The ability to quickly deploy a solution compared to a traditional wires approach was the principal driver in choosing this solution.
NWA Analysis:
These projects are proposed as Company-owned bridge-to-wire solutions. For consideration of any additional locations of constraint that are not currently highlighted within the project description and scope sections, alternatives will be evaluated, and such analysis is still ongoing.

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094585/ C094584/ C094583 Mobile Battery Energy Storage Systems	

Supplemental Information

Sanction Paper Number: N/A

CLCPA Phase 1 Project: ☐Yes ☑No

Transferred from Cases 24-E-0322: ☑ Yes ☐ No

Article 7 Project: ☐Yes ☑ No

Disadvantaged Community: ☐Yes ☑No

System Capacity improvements benefit Disadvantaged Communities by meeting forecasted load growth and enabling the electrification of buildings, the installation of electric vehicle charging stations, and other similar electrification initiatives. If a mobile battery energy storage unit is deployed at a charging site in a Disadvantaged Community, it could provide direct benefits to such community. In delivering such projects, the Company will take steps to mitigate potential adverse impacts on customers and members of the public, including avoiding disproportionately impacting Disadvantaged Communities.

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☑	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

This project will support electrification of LDVs and MHDVs consistent with state greenhouse gas reduction mandates in the CLCPA. Project will help support reduction of pollutants within communities that host truck stops/service plazas and vehicle fleet depots, as well as those communities that flank the I-90 corridor. System Capacity upgrades additionally increasing capacity of the electric system to serve other load or interconnect distributed generation.

Funding and Schedule Information

Total Project Cost Breakdown: ($ MM)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
	CapEx	0	0	6.1	0.3	0.3	0.0	6.8

Battery 1: C094585	OpEx	0	0	0.0	0.0	0.0	0.0	0.0
	Removal	0	0	0.0	0.0	0.0	0.0	0.0
	Total	**0**	**0**	6.1	0.3	0.3	0.0	6.8

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Battery 2: C094584	CapEx	0	0	6.3	0.3	0.3	0.0	7.0
	OpEx	0	0	0.0	0.0	0.0	0.0	0.0
	Removal	0	0	0.0	0.0	0.0	0.0	0.0
	Total	**0**	**0**	6.3	0.3	0.3	0.0	7.0

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Battery 3: C094583	CapEx	0	0	6.1	0.3	0.3	0.0	6.8
	OpEx	0	0	0.0	0.0	0.0	0.0	0.0
	Removal	0	0	0.0	0.0	0.0	0.0	0.0
	Total	**0**	**0**	6.1	0.3	0.3	0.0	6.8

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Battery 2 interconnection	CapEx	0	0	0.1	0.4	0.1	0.0	0.5
	OpEx	0	0	0.0	0.0	0.0	0.0	0.0
	Removal	0	0	0.0	0.0	0.0	0.0	0.0
	Total	**0**	**0**	0.1	0.4	0.1	0.0	0.5

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Battery 3 interconnection	CapEx	0	0	0.1	0.4	0.1	0.0	0.5
	OpEx	0	0	0.0	0.0	0.0	0.0	0.0
	Removal	0	0	0.0	0.0	0.0	0.0	0.0
	Total	**0**	**0**	0.1	0.4	0.1	0.0	0.5

nationalgrid	**Significant Distribution Capital Investment Plan Projects and Programs**	
	C094585/ C094584/ C094583 Mobile Battery Energy Storage Systems	

National Grid requested OPEX related to mobile batteries operations of $1.3m in current National Grid Electric Rate Case 24-E-0322. If the OPEX related to mobile energy storage is not approved through the Rate Case, the Company will seek recovery through the surcharge related to this proceeding.
Estimate Grade: 0
Begin Preliminary Engineering: 09/2025
Final Design Complete: 09/2025
Construction Start: 12/2026
In Service Date: 12/2026

Project Data Sheets

Transportation Electrification

Off-Thruway, I-81, and I-87 Capacity Projects

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C089710 Angola 4.8kV to 13.2kV reconductoring	10/31/2024

Project/ Program Information

Investment Type: ☑Project Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): 0

Associated Funding Numbers (if applicable): C094585

Description:

The identified distribution reconductoring work will help serve the immediate capacity forecasted for electric vehicle charging at the Angola Travel Plaza. The projected demand is higher than the available capacity in the area as early as 2026. The reconductoring of 6,275 feet of the 4.8kV directly serving the two sides of the travel plaza will address the current voltage and capacity limiting factors to serve the additional demand at the Eastbound and Westbound sides of the Angola Travel Plaza. The project will enable approximately 2.5 MW of capacity in the area. This project supports the mobile battery solution (project number C094585) and its deployment at Angola Travel Plaza as a bridge to the permanent solution, (C094390), a new greenfield substation.

Project Justification:

State and federal mandates require vehicle electrification for light-, medium-, and heavy-duty vehicles. Those mandates are regulations drive the need to proactively create electric capacity to accommodate forecasted electrical growth. This site represented one of the five highway service plazas the New York Thruway identified as key to create a minimum viable medium and heavy-duty charging network to facilitate the movement of electric trucks carrying goods in and across New York State. The Angola Travel Plaza was identified in National Grid's Electric Highway Study as one of the sites with both one of the highest charging capacity needs , and also as one of the sites with the most

immediate needs for additional capacity. This project will allow National Grid to serve the immediate load and the long-term load.

This Project is required to support forecasted EV charging load at the Thruway service plaza. The distribution feeders serving this site are currently constrained, offering no capacity for EV charging. This site includes charging for eastbound and westbound vehicles, and therefore is forecasted to experience significant load growth - 10 MW of EV charging capacity by 2030, and 30 MW by 2040. This project will address the immediate constraint on the system This project will also support distributed generation interconnection in the area, and load switching from other constrained stations in the region in the short and mid-term.

The current absence of capacity on the current feeders and the size, scope, and speed of future electric loads at this site require immediate action by the company.

Project Scope:

Currently, the Angola Travel Plaza is being fed by 3- ϕ, 4.8 kV overhead distribution, Delameter Station, F9352 (13.2 kV out of the station). This project would reconductor the current portion of the distribution feeder currently working at 4.8kV. The reconductoring would provide 3- ϕ, 13.2 kV to the Travel Plaza. The remaining parts of feeder F9352 on either side of the Thruway are already operating at 13.2kV, therefore this project would only make this final portion of the feeder that directly feeds the travel plaza in line with the rest of the feeder voltage. This would allow up to 2500 kVA service transformers (ESB-750) to be installed at the Thruway Plaza, enabling more vehicle chargers and the mobile battery project to charge when the chargers are not in use.

The project scope assumes that National Grid will be able to maintain F9352 that is currently in operation overhead of the Thruway as an overhead cable. *If the Thruway asks the Company to underground its feeder during the reconductoring process, costs for this project will increase significantly and will take longer to complete.*

Customer Benefit:

This project will create significant incremental capacity for the installation of EV charging in the area, with initial benefit being fast-charging on I-90 at the Angola Thruway Plaza. The suite of solutions provide short, medium, and long-term capacity to allow the Thruway to deploy sufficient charging to meet customer needs, allowing Thruway and its charging developer to move as quickly as they need to. It will also allow for distributed generation developers easier interconnection and access to 'on-ramps' to the 115 kV system.

Alternatives:

The company considered load management, different voltage solutions, mobile substations, and ultimately mobile storage. The company settled on a suite of solutions that includes higher voltage

feeders and mobile storage and distribution upgrades because other alternatives were either insufficient to serve the short, mid, and long-term load forecasts or would have been in place for only a short period of time before needing to be replaced with a larger solution.

NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. The Company adopted an analysis to determine where mobile battery storage could address the near-term capacity expansion needs and has proposed storage at those sites where feasible.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C089710 Angola 4.8kV to 13.2kV reconductoring	10/31/2024

Supplemental Information

Sanction Paper Number:

CLCPA Project: ☐Yes ☑No

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

Disadvantaged Community: ☐Yes ☑No

System Capacity improvements benefit Disadvantaged Communities by meeting forecasted load growth and enabling the electrification of buildings, the installation of electric vehicle charging stations, and other similar electrification initiatives. These projects provide additional benefits for all DACs along I-90 by supporting electric vehicle adoption along the corridor, reducing pollution. Research shows that communities within 500 feet to highway corridors are prone to higher rates of asthma. In delivering such projects, the Company will take steps to mitigate potential adverse impacts on customers and members of the public, including avoiding disproportionately impacting Disadvantaged Communities.

Article 7 Project: ☐Yes ☑No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☑	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

This project will support electrification of LDVs and MHDVs consistent with state greenhouse gas reduction mandates in the CLCPA. Project will help support reduction of pollutants within communities that host truck stops/service plazas and vehicle fleet depots, as well as those communities that flank the I-90 corridor. System Capacity upgrades additionally increasing capacity of the electric system to serve other load or interconnect distributed generation.

Funding and Schedule Information

Total Project Cost Breakdown: ($ MM)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C089710	CapEx	0	0	0.05	0.40	0.05	0	**0.50**

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C089710 Angola 4.8kV to 13.2kV reconductoring	10/31/2024

	OpEx	0	0	0.00	0.00	0.00	0	**0.00**
	Removal	0	0	0.00	0.00	0.00	0	**0.00**
	Total	**0**	**0**	**0.05**	**0.40**	**0.05**	**0**	**0.50**

Estimate Grade: Conceptual

Begin Preliminary Engineering: 4/1/2025

Final Design Complete: 9/1/2025

Construction Start: 4/1/2026

In Service Date: 12/31/2026

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097300/ C097301/ C097302 Wilton 3rd Breaker Installation / Sub T Double Circuit/13.2 kV double circuit	

Project/ Program Information

Investment Type: ☑Project Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): 0

Associated Funding Numbers (if applicable):

Wilton 3rd Breaker Installation C097300
Wilton 13.2kV Double Circuit C097302
Wilton Sub-T Double Circuit C097301

Description:

The three projects identified here will enable the Company to serve the Wilton electric vehicle load which is projected to be higher than the available capacity in the area by 2030. A combination of a third breaker at the Wilton substation and approximately two miles of 34.5/13.2 kV double circuit will need to be constructed on Ballard Road, a new tap into the 34.5 kV line at Spier-Brook, and hookstick switch installations will enable approximately 7.5 MW of capacity in the area to service the load. This will also provide a runway to facilitate the build out of the long-term need of this area. The long-term Wilton plans will enable approximately 49 MW of capacity for the area, which will be needed as the electric vehicle load in Wilton is projected to be upward of 42.8MW by the year 2050.

Project Justification:

As part of state electrification mandates for electric vehicles, there is a need to build out electric infrastructure to accommodate the load forecasts driven by transportation and heating electrification. Electric vehicle (EV) adoption in the commercial and residential sectors is driving the need to build out portions of the electric system, which is undersized relative to the capacity required

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097300/ C097301/ C097302 Wilton 3rd Breaker Installation / Sub T Double Circuit/13.2 kV double circuit	

to support electrified transportation and heating. In particular, the Wilton area, north of Saratoga Springs, is almost exactly halfway between Canada and New York City. As a result, it is the one of the primary places that both light-duty and medium- / heavy-duty vehicles stop and dwell as they travel south. There are two very large regional warehouses [redacted] in very close proximity to [redacted], which is immediately off the Thruway. This truck stop includes a significant amount of truck parking, amenities for truckers, and a restaurant, which has been a pull for long-haul truckers since [redacted]. Also on Ballard Road, between the two distribution warehouses, is a public school, which houses school buses during the day, a police station, and a fire station. The Company has spoken to the owners of both warehouses and the owner of the truck stop. All the customers the Company spoke to were excited to understand the importance and value for additional electric capacity in the area and have plans to use the capacity when the new facilities are energized. Please see attached letters from interested parties.

All these facilities fall within a 10-mile radius of one another creating a load pocket with incremental load projections of 9.5 MW by 2030 and 42.8 MW by 2050. The Wilton substation transformer #1 has a summer normal rating of 27.5 MVA, which cannot be fully utilized today because only two feeders originate at the station. The new distribution feeder on Ballard Road as well as the double circuit 34.5kV lines on Ballard Road creates significant capacity for electric vehicle load growth in the area through 2035 or 2040. Between 2040 – 2050 a more wholistic transmission solution will need to be constructed to serve the projected load growth of the entire region by 2050.

[redacted]

Urgency Justification:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097300/ C097301/ C097302 Wilton 3rd Breaker Installation / Sub T Double Circuit/13.2 kV double circuit	

The Wilton electric vehicle cluster study was performed with the charging station load for sixteen customer addresses in the Wilton area, where there were know vehicles dwelling. The two largest sites amongst these are the [redacted] which have charging load of 5.0 MW and 2.4 MW respectively in 2030. However, these loads increase all the way to 15 MW and 13.9 MW respectively by 2050. The increase in electric vehicle load forecasts at these two locations demonstrates how rapidly the load in the Wilton area is expanding. The pace of this load growth justifies the urgency of the proposed projects in this area. Without the implementation of these projects National Grid will not be able to serve the forecasted load growth. This document outlines the short-term work needed by 2030 to properly serve the 9.5 MW of projected electric vehicle load in Wilton. This short-term solution involves the Wilton substation and feeders. In the 2035 timeframe, the long-term solution would be to construct two new substations and convert a 34.5 kV line to 115 kV.

Project Scope:

Wilton 3rd Breaker Installation: C097300

Install a third 15 kV breaker at the existing Wilton substation. Additionally, approximately 250 feet of 1000 AL getaway cable with one manhole will have to be installed for the new 13.2 kV feeder. The getaway cable should start at the station and end just south of pole 5 on Corinth Mountain Road. The cable will be terminated on a new riser pole with a hookstick switch.

Wilton 34.5/13.2kV Double Circuit: C097302 & C097301

Construct 2 miles of new double circuit 34.5/13.2 kV construction on the south side of Ballard Road from the Wilton substation at Woodard Road to I-87 with open wire 34.5 kV on top and 13.2 kV on the bottom both using 477 AL TW. Connect all loads on the south side of Ballard Road to the new 13.2 kV line. Have the 34.5 kV line end at Gordan lane near pole 35 and have the 13.2 kV line continue to pole 40.

Install a new normally closed hookstick switches on new poles west of pole 40 and pole 40-S with one being on the north side of Ballard Road and the other being on the south side.

Tap off the Spier-Brook line 34.5 kV line near structure 117. Install a 34.5 kV recloser on a new structure between the existing structure and Ballard Road.

Long Lead Time Materials:

1000 AL Cable

For the Wilton electric vehicle load to be served in 2030, all the work outlined in funding projects C097300, C097302, and C097301 must be completed. These projects are for the Wilton station work,

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097300/ C097301/ C097302 Wilton 3rd Breaker Installation / Sub T Double Circuit/13.2 kV double circuit	

13.2 kV distribution line work, and the 34.5 kV sub-T work needed to adequately serve the load in 2030.

Customer Benefit:

The Wilton electric vehicle cluster study outlines several upgrades that will help to not only serve the electric vehicle load in Wilton but also the surrounding areas. The work previously outlined in this project development sheet shows the projects that need to get done by 2030 to serve the projected load. In 2030 the projected electric vehicle load is 5 MW which can be served by the existing Wilton substation if the third 15 kV breaker is added, and the 34.5 kV/13.2 kV double circuit is constructed.

The projects required to serve the projected electric vehicle load in 2035 are larger in scale. Two new substations will need to be constructed: a 115/13.2 kV substation with a 40 MVA bank at the former Corinth International Paper site, and one being a 115/34.5/13.2 kV station with a 40 MVA bank on Woodard Road. Additionally, four miles of existing 34.5 kV line will have to be replaced with 115 kV from Spier Falls to Woodard Road. Once this work is done the existing Wilton substation can be retired. The need for this work is driven by the electric vehicle load which is projected to be 42.8 MW in 2050.

Several of the projects outlined here were already in National Grid's long-term plans. The short-term solution would have been required in later years, but was slated for acceleration due to the Wilton electric vehicle cluster study.

Alternatives:

NWA solution evaluated at the Wilton substation.

NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097300/ C097301/ C097302 Wilton 3rd Breaker Installation / Sub T Double Circuit/13.2 kV double circuit	

Supplemental Information

Sanction Paper Number:

CLCPA Project: ☐Yes ☑No

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

Disadvantaged Community: ☐Yes ☑No

System Capacity improvements benefit Disadvantaged Communities by meeting forecasted load growth and enabling the electrification of buildings, the installation of electric vehicle charging stations, and other similar electrification initiatives. These projects provide additional benefits for all DACs along the travel corridor by supporting electric vehicle adoption along the corridor, reducing pollution. Research shows that communities within 500 feet to highway corridors are prone to higher rates of asthma. In delivering such projects, the Company will take steps to mitigate potential adverse impacts on customers and members of the public, including avoiding disproportionately impacting Disadvantaged Communities.

Article 7 Project: ☐Yes ☑No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☑	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

This project will support electrification of LDVs and MHDVs consistent with state greenhouse gas reduction mandates in the CLCPA. Project will help support reduction of pollutants within communities that host truck stops/service plazas and vehicle fleet depots, as well as those communities that flank the travel corridor. System Capacity upgrades additionally increasing capacity of the electric system to serve other load or interconnect distributed generation.

Funding and Schedule Information

Total Project Cost Breakdown: ($ MM)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097300/ C097301/ C097302 Wilton 3rd Breaker Installation / Sub T Double Circuit/13.2 kV double circuit	

C097300	CapEx	0	0.00	0.04	0.02	0.50	0.33	**0.89**
	OpEx	0	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0	0.00	0.00	0.00	0.05	0.03	**0.08**
	Total	**0**	**0.00**	**0.04**	**0.02**	**0.55**	**0.35**	**0.96**

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C097301	CapEx	0	0.00	0.14	0.24	1.77	1.14	**3.29**
	OpEx	0	0.00	0.00	0.00	0.00	0.14	**0.14**
	Removal	0	0.00	0.00	0.00	0.05	0.14	**0.19**
	Total	**0**	**0.00**	**0.14**	**0.24**	**1.82**	1.43	**3.63**

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C097302	CapEx	0	0.00	0.04	0.15	0.70	0.36	**1.25**
	OpEx	0	0.00	0.00	0.00	0.00	0.05	**0.05**
	Removal	0	0.00	0.00	0.00	0.05	0.05	**0.10**
	Total	**0**	**0.00**	**0.04**	**0.15**	**0.75**	0.46	**1.40**

Estimate Grade: Conceptual

Begin Preliminary Engineering: 4/1/2025

Final Design Complete: 9/1/2025

Construction Start: 4/1/2026

In Service Date: 2/1/2029

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097372 I-81 EV Charging Cortland Rest Stop	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑ Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): D / Sub-T system capacity

Associated Funding Numbers (if applicable): C097372 Cortland OVS Truck chargers

Description:

This project encompasses developing a direct tap to a 34.5kV sub-transmission line in the Cortland area to address the forecasted granular capacity to serve anticipated EV load at a I-81 rest stop in Cortland. This travel plaza has been identified in National Grid's Electric Highway Study as one of the highest forecasted charging capacity required sites on I-81. The location of the site about halfway between Pennsylvania and Syracuse makes it a great place for trucks and cars to stop and charge. The development of this site will be important in creating a viable charging network across New York State to facilitate the electrification of medium- and heavy-duty trucks as well as light-duty vehicles.

Project Justification:

Given the forecasted vehicle electrification load at this travel plaza in Cortland, National Grid seeks to service this travel directly and bring more benefits to the regional distribution system if the travel plaza is served by higher voltage 34.5kV service. The current forecasted load of 10MW at the travel plaza cannot be served by the current limited capacity feeder. The current capacity for the feeder serving the travel plaza is 2MW. By interconnecting the travel plaza to the existing 34.5kV sub-transmission line that runs immediately adjacent to their property, National Grid would be able to serve up to 15MVA at the site. The site includes truck parking for around 20 trucks and fueling for light-duty and MHDV.

Further, moving the service of the travel plaza from distribution to sub-transmission, this will alleviate the demand in the local distribution system. By not adding the travel plaza load to the distribution

feeders, this means that the expansion work being conducted will be able to adequately serve the residential and industrial load growth in the area. Serving this customer off the 34.5 kV system allows the current 4.8 kV system to avoid overloads. Other vehicle electrification loads in this area will be served by a planned upgrade of the 4.8 kV in the area to 13.2, and or taping the 34.5 kV where possible.

Project Scope:

This project envisions creating a new tap to the existing Sub-T Cortland #20 34.5kV line that runs adjacent to the identified travel plaza in the Cortland area. The project would install a new tap pole with disconnect switches for in the customer property for a customer line tap. Then, the project envisions an extension of ~500' of the 34.5kV line to a future customer owned substation so the customer would be enabled to receive primary metered 34.5kV service. The project does not envision the cost or construction of any pad mounted transformers to be owned by the customer. National Grid believes that the customer could apply to receive incentives to procure these pieces of electrical infrastructure through the existing Make-Ready Program.

Long Lead Time Materials: None

[redacted]

Customer Benefit:

Allowing the travel plaza to interconnect directly to the sub-transmission line will give the travel plaza operator added benefits in regard to reliability and future expansion plans. The project does not include the customer-side upgrades and investments necessary to receive primary service. National Grid

believes that the customer would apply for incentives to enable these investments through the existing Make-Ready Programs offered by the PSC and National Grid.
Alternatives:
Extend and convert an additional ~0.5 miles of 3 phase 4.8kv to 13.2kV to bring additional capacity to the rest stop for direct support of EV charging infrastructure. However this this would require completion of other capital work planned in Cortland which includes rebuilding substations and converting the area system voltage. The project was deemed to be both more costly and time consuming.
NWA Analysis:
The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As this project's driver is system capacity, the Company will consider NWA and analysis is still ongoing.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097372 I-81 EV Charging Cortland Rest Stop	

Supplemental Information

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☐Yes ☑ No

CLCPA Project: ☐Yes ☑ No

Disadvantaged Community: ☐Yes ☑ No

System Capacity improvements benefit Disadvantaged Communities by meeting forecasted load growth and enabling the electrification of buildings, the installation of electric vehicle charging stations, and other similar electrification initiatives. These projects provide additional benefits for all DACs along the travel corridor by supporting electric vehicle adoption along the corridor, reducing pollution. Research shows that communities within 500 feet to highway corridors are prone to higher rates of asthma. In delivering such projects, the Company will take steps to mitigate potential adverse impacts on customers and members of the public, including avoiding disproportionately impacting Disadvantaged Communities.

Article 7 Project: ☐Yes ☑ No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☑	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

This project will support electrification of LDVs and MHDVs consistent with state greenhouse gas reduction mandates in the CLCPA. Project will help support reduction of pollutants within communities that host truck stops/service plazas and vehicle fleet depots, as well as those communities that flank the travel corridor. System Capacity upgrades additionally increasing capacity of the electric system to serve other load or interconnect distributed generation.

Funding and Schedule Information

Total Project Cost Breakdown: ($ MM)

C097372– I-81 EV Charging Cortland Rest Stop

Project Number	Spend	Prior Years	FY25					FY26	FY27	FY28	FY29	Total
C097372	CapEx	0	0.00	0.02	0.04	0.02	0.00	**0.08**				

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097372 I-81 EV Charging Cortland Rest Stop	

	OpEx	0	0.00	0.00	0.01	0.00	0.00	**0.01**
	Removal	0	0.00	0.00	0.01	0.00	0.00	**0.01**
	Total	0	**0.00**	0.02	0.06	0.02	**0.00**	**0.10**

Estimate Grade: Conceptual

Begin Preliminary Engineering: 04/2025

Final Design Complete: 12/2025

Construction Start: 06/2027

In Service Date: 09/2027

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097423 Teall Ave 7258 Feeder Upgrades	10/16/2024

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): D / Sub-T System Capacity

Associated Funding Numbers (if applicable): None

Description:

National Grid's granular EV Highway charging capacity requirement study and Fleet Cluster study both identified East Syracuse as a hotpot for vehicle electrification and upgrades. In the short-term, the most immediate need in the area has been identified as an upgrade to the existing feeder Teall 7258 to accommodate electric vehicle charging in the area.

Project Justification:

Teall 7258 is an existing 13.2kV feeder in Syracuse. The feeder serves large industrial and logistics customers in East Syracuse's Industrial Zone and neighboring residential areas. The feeder is currently being utilized at close to its full capacity. In 2023, the feeder was at 85% of its summer normal rating and in 2023 that percentage had increased to 98% in 2024. National Grid's granular fleet cluster forecast sees a further 1.3MW increase in load to the feeder from the nearby fleets by 2030. This does not include organic growth from heating electrification which the Company would expect in the residences also served by feeder. Feeder upgrades are necessary to allow more capacity on the feeder.

Project Scope:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097423 Teall Ave 7258 Feeder Upgrades	10/16/2024

The project includes replacing ~1700' of existing getaway cable with 1000CU. It also includes replacing ~825' of 4/0 Lashed Aerial Cable with cable in new conduit. Finally, it will also install one manhole and a new riser pole.

Long Lead Time Materials: 1000CU cable

Customer Benefit:

Bringing greater capacity to Syracuse's industrial zone and neighboring residential neighborhoods will allow customers in this area to electrify commercial vehicles and install electric heating. Customers in the area served by feeder 7258 include large vehicle depots and logistics facilities.

Alternatives:

Reconductoring of the feeder serving the sites is the only viable short-term solution to address the exceedance of summer normal rating of the feeder. No other alternatives were deemed capable of serving the forecasted loads.

NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As this project's driver is system capacity, the Company will consider NWA and analysis is still ongoing.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097423 Teall Ave 7258 Feeder Upgrades	10/16/2024

Supplemental Information

Sanction Paper Number:

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Project: ☐Yes ☑No

Disadvantaged Community: ☑ Yes ☐No

This project will create system capacity for EV charging in DACs in the immediate area. System Capacity improvements benefit Disadvantaged Communities by meeting forecasted load growth and enabling the electrification of buildings, the installation of electric vehicle charging stations, and other similar electrification initiatives. The Company will take steps to mitigate potential adverse impacts on customers and members of the public, including avoiding disproportionately impacting Disadvantaged Communities.

Article 7 Project: ☐Yes ☑No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☑	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

This project will support electrification of LDVs and MHDVs consistent with state greenhouse gas reduction mandates in the CLCPA. Project will help support reduction of pollutants within communities that host truck stops/service plazas and vehicle fleet depots, as well as those communities that flank the I-90 corridor. System Capacity upgrades additionally increasing capacity of the electric system to serve other load or interconnect distributed generation.

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	**Total**
xxxx	CapEx	0	0	0.14	3.85	0	0	**3.99**

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097423 Teall Ave 7258 Feeder Upgrades	10/16/2024

	OpEx	0	0	0.00	0.00	0	0	**0.00**
	Removal	0	0	0.00	0.12	0	0	**0.12**
	Total	**0**	**0**	**0.14**	**3.97**	**0**	**0**	**4.11**

Estimate Grade: 4.2

Begin Preliminary Engineering: 11/12/2024

Final Design Complete: 6/1/2025

Construction Start: 6/1/2025

In Service Date: 6/1/2026

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093762 Val Kin Station Upgrade	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): D/SUB T_Load Relief

Associated Funding Numbers (if applicable):

C093806 - Val Kin D-Line

Description:

This suite of projects is essential to meet the increasing demand for electric vehicle (EV) charging at the Pilot Travel Center and a large warehouse as New York State transitions towards greater EV adoption. The forecasted EV charging capacity is estimated to reach 5 MW by 2030, leading to the depletion of existing capacity at these sites and necessitates the installation of a new 40 MVA substation transformer and new 13.2 kV distribution feeders to accommodate this load. The current feeder in the area is limited by the substation to only 3 MW. The rebuilt substation and feeders will eventually to create 22 MW of incremental capacity in the area.

The projected load exceeds 8 MW by 2040 and reaches 11 MVA by 2050. Furthermore, this project is crucial in supporting the additional EV charging requirements at the [redacted], particularly for medium- and heavy-duty charging. As one of the primary charging stops for vehicles entering New York from Massachusetts, this site is expected to experience significant load growth.

Project Justification:

The Val Kin Substation TB1 serves the towns of Kinderhook, Valatie, and various residential and commercial businesses along US Route 9. The projected heating electrification, load growth and EV adoption for this area is expected to reach 23 MW by 2030. However, with the additional projected EV loading of 5 MW at the [redacted] by the same year, the total loading on the Val Kin Substation is projected to reach 28 MW, exceeding its summer normal rating by 105%.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093762 Val Kin Station Upgrade	

By supporting the achievement of the Climate Leadership and Community Protection Act (CLCPA), as well as complying with zero-emission vehicle regulations from the New York Department of Environmental Conservation (NY DEC) and the U.S. Environmental Protection Agency (EPA), this project aligns with the state and federal goals for emissions reduction. Additionally, the [redacted] and the corridor it serves are included in the National Zero-Emission Freight Corridor Strategy, further emphasizing the importance of this project in promoting sustainable transportation practices.

In the Castleton – On – Hudson and Hudson areas of the Company's service territory, there is expected to be considerable load growth from Electric Vehicles and the electrification of heat. One such example is the [redacted] in Castleton- On – Hudson with a projected incremental load of 5.8MW by 2035. The existing transformer bank at the Val Kin substation is loaded to approximately 70% of its normal rating and this incremental load growth at the travel plaza alone will bring the transformer to its capacity limit. The increase from the travel plaza coupled with other forecasted residential and commercial electrification increases in the area will result in the existing transformer being 134% loaded by 2035 which triggers the need to up-size the transformer bank at the Val Kin Substation to a 40MVA Transformer with new 13.2kV distribution feeders to handle the rapid load growth projected in the area.

Project Scope:

Upgrade the existing 115/13.2 kV, 22.4 MVA substation transformer at Val Kin 427 with a 115/13.2 kV, 40 MVA substation transformer. In addition to the transformer upgrade, underground and overhead distribution work is required to fully utilize the new substation transformer's capacity. This includes making upgrades to the feeder getaway for Val Kin 52, 53, and 54 from the Val Kin 427 metalclad to each feeder riser pole. To achieve this, three feeder getaways will be constructed using approximately 200 feet of 2 wide x 4 high concrete duct bank, utilizing 5-inch conduits. These duct banks will run from the Val Kin substation metalclad to a newly installed manhole on Maple Lane South located outside the substation. Within this duct bank, three circuits of 1000 MCM CU cables will be installed. Additionally, approximately 600 feet of 2 wide x 4 high concrete duct bank, using 5-inch conduit, will be constructed. This duct bank will connect the new manhole installed in the previous step to a newly installed Val Kin 52 riser pole on Maple Lane South, near pole 35.

National Grid’s request for funding is limited to the distribution feeder, duct banks, surveys, downpayment for transformers, and getaway work associated with the full project scope amounting to $7.7m. The Company plans to request the remaining of funding needed for completion of project in subsequent filings made in this docket.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093762 Val Kin Station Upgrade	

[redacted]

Long Lead Time Materials:
1000 MCM Cu Cable
40 MVA 115/13.2 kV Substation Ratio Transformer

Identified Adjacent Projects Required for Completion to Allow Electrification:

The completion of the C093806 - Val Kin D-Line is essential alongside the Val Kin Station Rebuild to fully utilize the capacity of the new 40 MVA Substation Transformer. Additionally, to meet the projected loads required by 2035 and beyond, a new 115/13.2 kV 40 MVA substation will need to be constructed along Van Hoesen Road. This project will entail distribution and transmission work to effectively utilize the new Van Hoesen Substation. Once this project is in service by 2035, the new Van Hoesen substation will be capable of serving the projected EV loading at the [redacted] and the other loads in the area out to 2050.

Customer Benefit:

Proposed near term projects will accommodate immediate load relief and also address forecasted load growth at a low cost.

Alternatives:

NWA solutions evaluated at Val Kin Substation.

NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As this project has System Capacity as the main driver, NWA will be considered, and analysis is currently ongoing.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
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nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093762 Val Kin Station Upgrade	

Supplemental Information

Sanction Paper Number: N/A

CLCPA Project: ☐Yes ☑No

Disadvantaged Community: ☐Yes ☑No

System Capacity improvements benefit Disadvantaged Communities by meeting forecasted load growth and enabling the electrification of buildings, the installation of electric vehicle charging stations, and other similar electrification initiatives. These projects provide additional benefits for all DACs along the travel corridor by supporting electric vehicle adoption along the corridor, reducing pollution. Research shows that communities within 500 feet of highway corridors are prone to higher rates of asthma. In delivering such projects, the Company will take steps to mitigate potential adverse impacts on customers and members of the public, including avoiding disproportionately impacting Disadvantaged Communities.

Transferred from Cases 24-E-0322: ☐Yes ☑ No

Article 7 Project: ☐Yes ☑No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☑	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

This project will support electrification of LDVs and MHDVs consistent with state greenhouse gas reduction mandates in the CLCPA. Project will help support reduction of pollutants within communities that host truck stops/service plazas and vehicle fleet depots, as well as those communities that flank thetravel corridor. System Capacity upgrades additionally increasing capacity of the electric system to serve other load or interconnect distributed generation.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093762 Val Kin Station Upgrade	

Funding and Schedule Information

Total Project Cost Breakdown: ($ MM)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C093762	CapEx	0	0.00	0.39	0.95	3.40	0.00	**4.74**
	OpEx	0	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0	0.00	0.00	0.00	0.10	0.00	**0.10**
	Total	**0**	**0.00**	**0.39**	**0.95**	**3.50**	**0.00**	**4.84**

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C093806	CapEx	0	0.00	0.12	0.24	1.50	0.95	**2.81**
	OpEx	0	0.00	0.00	0.00	0.00	0.00	**0.00**
	Removal	0	0.00	0.00	0.00	0.05	0.03	**0.08**
	Total	**0**	**0.00**	**0.12**	**0.24**	**1.55**	**0.98**	**2.89**

Estimate Grade: Conceptual

Begin Preliminary Engineering: 03/2025

Final Design Complete: 09/2025

Construction Start: 03/2026

In Service Date: 07/2029

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097421 I-81 EV Charging Watertown Rest Stop	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑ Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): D / Sub-T System Capacity

Associated Funding Numbers (if applicable): C097421 Coffeen 55 Upgrade, I-81 EV Fleets

Description:

This project encompasses reconductoring Coffeen 55 feeder. The feeder has been identified as the limiting element to increase the distribution capacity to serve anticipated EV load at a I-81 truck stop and fueling location in Watertown and adjacent vehicle fleets including school bus operators and others (see image and description below).

Project Justification:

Watertown has been identified in National Grid's Electric Highway study as an important site on I-81 to build the network for electric vehicle charging in New York State and the Company's service territory. The Watertown travel plaza was identified as a site of high utilization and the highest forecasted load between Syracuse and the northern border of New York and Canada. Given the high freight traffic in the corridor taking goods between the United States and Canada, the Watertown site is a key site to be electrified to enable freight electrification. National Grid has had conversations with the travel plaza operator who confirmed this is a high priority site for them to build out to serve electric light-, medium-, and heavy-duty vehicles. The travel plaza operator expressed that they are planning to pursue National Electric Vehicle Infrastructure (NEVI) funding to install chargers through a NYSERDA RFP (see attached letter of support).

The project in Watertown will take advantage of existing work planned as part of CLCPA upgrades to further increase the capacity in the area to serve electrification. The Company currently forecasts there will be around 4MVA of capacity on the feeder serving the service area and adjacent fleets by 2030.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097421 I-81 EV Charging Watertown Rest Stop	

However, the Company also forecast that load related to the electrification of the service area (2.5MW) and surrounding fleets (2MW) will surpass the available capacity of the feeder by 2030. [redacted] Thus, the need for an incremental upgrade in the area is needed to so that the lack of grid capacity does not prevent electrification of these customers as companies and New York State work towards meeting ambitious electrification goals. The proposed reconductoring of 0.6 miles of feeder will increase the capacity of the feeder serving these customers by 2.4MVA, bringing the total feeder capacity to 6.4MVA total.

[redacted]

Project Scope:

C097421: Reconductor ~0.6 miles of 750Al to 1000Cu cable to bring additional capacity to the rest stop for direct support of EV charging infrastructure. This solution provides around 2.4MVA of additional capacity to the feeder serving the travel plaza and adjacent industrial customers.

Long Lead Time Materials: 1000Cu Cable

Identified Adjacent Projects Required for Completion to Allow Electrification: This work requires the completion of Coffeen Asset Replacement and associated work (C081787, C087772, C089326, C089520, C090023 projects currently proposed in rate case as part of CLCPA work) prior to the subject project construction.

Customer Benefit:

The proposed project improves customer reliability and supports future load growth. This is done by replacing aged equipment with more load capable equipment. The reconductoring of the line serving the service plaza will also benefit the fleets around Watertown that are fed by the same feeder and substation. Close to the identified travel plaza, National Grid has identified school bus depots, logistics hubs, and manufacturing centers. All these business have their own mandates for electrification that will put further strain on the electrical grid. Completing this upgrade to the feeder proactively means that

customers in the area will face less of a burden when looking to electrify their vehicles in the near future.
Alternatives:
NWA solutions evaluated at Watertown.
NWA Analysis:
The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. The Company executed a 15-year contract with a third-party NWA solution provider to be constructed to alleviate load concerns of the Coffeen substation. That NWA cannot and does not relieve the constraints on this feeder.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097421 I-81 EV Charging Watertown Rest Stop	

Supplemental Information

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☐ Yes ☑No

CLCPA Project: ☐Yes ☑ No

Disadvantaged Community: ☑Yes ☐ No

System Capacity improvements benefit Disadvantaged Communities by meeting forecasted load growth and enabling the electrification of buildings, the installation of electric vehicle charging stations, and other similar electrification initiatives. These projects provide additional benefits for all DACs along the travel corridor by supporting electric vehicle adoption along the corridor, reducing pollution. Research shows that communities within 500 feet to highway corridors are prone to higher rates of asthma. In delivering such projects, the Company will take steps to mitigate potential adverse impacts on customers and members of the public, including avoiding disproportionately impacting Disadvantaged Communities.

Article 7 Project: ☐Yes ☑ No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☑	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

This project will support electrification of LDVs and MHDVs consistent with state greenhouse gas reduction mandates in the CLCPA. Project will help support reduction of pollutants within communities that host truck stops/service plazas and vehicle fleet depots, as well as those communities that flank the travel corridor. System Capacity upgrades additionally increase capacity of the electric system to serve other load or interconnect distributed generation.

Funding and Schedule Information

Total Project Cost Breakdown: ($ MM)

C097421 – I-81 EV Charging Watertown Rest Stop

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C097421	CapEx	0	0	0.14	0.24	0.85	1.01	**2.24**

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C097421 I-81 EV Charging Watertown Rest Stop	

	OpEx	0	0	0.00	0.00	0.00	0.00	**0.00**
	Removal	0	0	0.00	0.00	0.05	0.08	**0.13**
	Total	0	0	**0.14**	**0.24**	**0.90**	**1.09**	**2.37**

Estimate Grade: Conceptual

Begin Preliminary Engineering: 12/2025

Final Design Complete: 05/2026

Construction Start: 06/2026

In Service Date: 02/2029

Project Data Sheets

Transportation Electrification

School Bus and Customer-Driven Projects

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C096326 – EV School charger [redacted]	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): 0

Associated Funding Numbers (if applicable): N/A

Description:

This project is to install system upgrades to enable electrification of [redacted] buses.

Project Justification:

The system load increase due to electrification of the school bus fleet at the local school district is driving the need for additional capacity on the Grooms Road Substation. The local school district is beginning the procurement of electric school buses in the near term and this project is required to support the increased load. These upgrades are required in order to allow for electrification of the school bus load.

Project Scope:

This project will replace 500' of 750MCM Al with 1000MCM CU, which is currently the limiting section on the Grooms Rd 51 feeder getaway.

Long Lead-Time Materials:
1000 MCM CU Cable

Customer Benefit:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C096326 – EV School charger [redacted]	

This project will look to enable additional capacity, caused by the transition to electrical transportation. This will look to support EV school bus deployment by enabling new capacity and electrification. In addition, the urgency of these projects will look reduce time for interconnection by prioritizing construction. This project supports increased capacity from the substation to the customers location to enable interconnection of the near-term load at Shenendehowa Central Schools. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

N/A

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practically be addressed with an NWA. Based on the current justifications and project costs, this project does not meet the Company's NWA evaluation criteria and is not to be considered for NWA based on its project cost and is not feasible for deferral. Therefore, this is no other alternative for consideration.

Supplemental Information

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Project: ☐Yes ☑ No

Disadvantaged Community: ☐Yes ☑ No

Article 7 Project: ☐Yes ☑ No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Funding and Schedule Information

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C096326 – EV School charger Shenendehowa Central Schools	

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C096326	CapEx	0.00	10.00	190.00	0.00	0.00	0.00	200.00
	OpEx	0.00	0.00	25.00	0.00	0.00	0.00	25.00
	Removal	0.00	0.00	25.00	0.00	0.00	0.00	25.00
	Total	0.00	10.00	240.00	0.00	0.00	0.00	250.00

Estimate Grade: Conceptual

Begin Preliminary Engineering: 02/2025

Final Design Complete: 10/2025

Construction Start: 01/2026

In Service Date: 03/2026

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093619 – Colosse 2nd bank for EV Charging	Version 1 - 02/21/2024

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable): C093499, C093619

Description:

This project is to add a second transformer (pad mount) at Colosse station due to electric vehicle charging being added off I-81.

Feeder work for the second bank at Colosse includes ~1/3 mile of double circuit to split circuit into two feeders.

Project Justification:

A new customer load request for 700kW (775kVA) of vehicle charging is being installed at [redacted] off the I-81 highway. The station is currently at 97% of its summer normal rating requiring the additional capacity as this will load the current transformer to 106% of its Summer normal rating. Customer load request has surpassed the existing infrastructure ratings requiring this work in order to connect the customer.

Project Scope:

Distribution Line (C093499):
Install a 34.5/13.2kV 10MVA pad mount transformer, a 34.5kV recloser and riser pole and cable from the riser to transformer located off the Lighthouse Hill Mallory #22 Line next to Colosse substation. This is to support EV charging off I-81.

Sub-Transmission (C093619):
Install cable from the new pad (C093619) to a riser pole at Colosse. Install 333kVA regulators and a 15kV recloser and new overhead out to P74 NYS 69. Also install double circuit from P74 NYS 69 to P69 (intersection of NYS 69 & US 11). Then continue the double circuit from P69 south to pole 102 US 11. Install a new Normal-Open switch at P101, which will split the existing Colosse feeder. The

portion of the feeder which goes down NYS Rte. 69 will remain on Colosse and the portion that goes south on US-11 will be on the new feeder. This is ~1/3 mile of double circuit.

The new circuit will carry the load on the south branch of the current Colosse feeder. The East branch will remain on the current bank. The EV chargers are on this portion of the feeder. The load will be split roughly 40/60 - new feeder/current feeder.

Long Lead-Time Materials:
34.5/13.2kV 10MVA pad mount transformer.

Customer Benefit:

This project will look to enable 10 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based transportation. This will look to support public charging by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. This would provide additional capacity for new customer load interconnections and improved system reliability and resiliency. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

Replace the existing single transformer at Colosse with a larger single transformer.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practically be addressed with an NWA. This is a customer-request project that addresses asset system capacity needs. Components of this project pertaining to System Capacity will be considered for NWA, and analysis is currently ongoing.

Supplemental Information

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Project: ☐Yes ☑ No

Disadvantaged Community: ☐Yes ☑ No

Article 7 Project: ☐Yes ☑ No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093619 – Colosse 2nd bank for EV Charging	Version 1 - 02/21/2024

☐	☐	☐	☐	
Reduce Greenhouse Gas Emissions:				

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C093619	CapEx	1.97	14.00	20.00	360.00	1800.00	100.00	2295.97
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Removal	0.00	0.00	0.00	1.67	200.00	0.00	201.67
	Total	1.97	14.00	20.00	361.67	2000.00	100.00	2497.64

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C093499	CapEx	8.25	8.00	0.00	280.76	0.00	0.00	297.01
	OpEx	0.00	0.00	0.00	28.08	0.00	0.00	28.08
	Removal	0.00	0.00	0.00	28.08	0.00	0.00	28.08
	Total	8.25	8.00	0.00	336.92	0.00	0.00	353.17

Estimate Grade:

Begin Preliminary Engineering: 04/01/2024

Final Design Complete: 12/26/2024

Construction Start: 04/30/2026

In Service Date: 10/23/2027

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C092952 – Electric Vehicle Upgrades 93662	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): 0

Associated Funding Numbers (if applicable): N/A

Description:

This project is to install system upgrades to enable electrification of the [redacted] buses supported by IIJA funding.

Project Justification:

The system load increase caused by electrification of the school bus fleet at the local school district is driving the need for additional voltage regulation. The local school district was awarded IIJA funding to support the bus electrification in the near term and this project is required to maintain voltage quality for the increased load. These upgrades are required in order to allow for electrification of the school bus load.

Project Scope:

Install 3-333kVA voltage regulator along feeder mainline to ensure system voltage is maintained to support the customers increased load.

Long Lead-Time Materials:
3-333 kVA Voltage Regulator.

Customer Benefit:

This project will enable additional electrification capacity, which will offer a reduction of C02, compared to fossil-fuel based transportation. This will look to support EV school bus deployment by enabling new capacity and electrification. In addition, the urgency of these projects will look reduce time for interconnection by prioritizing construction. This project supports system voltage further from the station which enables additional load to be served without creating low system voltage. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet** C092952 – Electric Vehicle Upgrades 93662	

N/A

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practically be addressed with an NWA. Based on the current justifications and project costs, this project does not meet the Company's NWA evaluation criteria and is not to be considered for NWA based on its project cost and is not feasible for deferral. Therefore, this is no other alternative for consideration.

Supplemental Information

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☑ Yes ☐ No

CLCPA Project: ☐ Yes ☑ No

Disadvantaged Community: ☐ Yes ☑ No

Article 7 Project: ☐ Yes ☑ No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C092952	CapEx	0.00	0.00	200.00	0.00	0.00	0.00	200.00
	OpEx	0.00	0.00	25.00	0.00	0.00	0.00	25.00
	Removal	0.00	0.00	25.00	0.00	0.00	0.00	25.00
	Total	0	0	250	0	0	0	250.00

Estimate Grade:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C092952 – Electric Vehicle Upgrades 93662	

Begin Preliminary Engineering: 04/2025
Final Design Complete: 10/2025
Construction Start: 01/2025
In Service Date: 03/2026

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C092951 – Electric Vehicle Upgrades 86942	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): 0

Associated Funding Numbers (if applicable): N/A

Description:

This project is to install system upgrades to enable electrification of [redacted] buses supported by IIJA funding.

Project Justification:

The system load increase caused by electrification of the school bus fleet at the local school district is driving the need for additional voltage regulation. The local school district was awarded IIJA funding to support the bus electrification in the near term and this project is required to maintain voltage quality for the increased load. These upgrades are required in order to allow for electrification of the school bus load.

Project Scope:

Install 3-333kVA voltage regulator along feeder mainline to ensure system voltage is maintained to support the customers increased load.

Long Lead-Time Materials:
3-333 kVA Voltage Regulator.

Customer Benefit:

This project will enable additional electrification capacity, which will offer a reduction of C02, compared to fossil-fuel based transportation. This will look to support EV school bus deployment by enabling new capacity and electrification. In addition, the urgency of these projects will look reduce time for interconnection by prioritizing construction. This project supports system voltage further from the station which enables additional load to be served without creating low system voltage. Without this project being completed, the customer will not be able to service their load request.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet** C092951 – Electric Vehicle Upgrades 86942	

Alternatives:
N/A
DER/NWA Analysis:
The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practically be addressed with an NWA. Based on the current justifications and project costs, this project does not meet the Company's NWA evaluation criteria and is not to be considered for NWA based on its project cost and is not feasible for deferral. Therefore, this is no other alternative for consideration.

Supplemental Information

Sanction Paper Number:	**N/A**		
Transferred from Cases 24-E-0322:	☑ Yes ☐No		
CLCPA Project: ☐Yes ☑ No			
Disadvantaged Community:	☑ Yes ☐No		
Article 7 Project:	☐Yes ☑ No		
Green Financing Eligibility:			
Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐
Reduce Greenhouse Gas Emissions:			

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C092951	CapEx	0.00	0.00	200.00	0.00	0.00	0.00	200.00
	OpEx	0.00	0.00	25.00	0.00	0.00	0.00	25.00
	Removal	0.00	0.00	25.00	0.00	0.00	0.00	25.00
	Total	0.00	0.00	250.00	0.00	0.00	0.00	250.00

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C092951 – Electric Vehicle Upgrades 86942	

Estimate Grade:
Begin Preliminary Engineering: 04/2025
Final Design Complete: 10/2025
Construction Start: 01/2025
In Service Date: 03/2026

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C092949– Electric Vehicle Upgrades 89553	

Project/ Program Information

Investment Type: ☑Project Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): 0

Associated Funding Numbers (if applicable): N/A

Description:

This project is to install system upgrades to enable electrification of the [redacted] buses supported by IIJA funding.

Project Justification:

The system load increase caused by electrification of the school bus fleet at the local school district is driving the need for additional voltage regulation. The local school district was awarded IIJA funding to support the bus electrification in the near term and this project is required to maintain voltage quality for the increased load. These upgrades are required in order to allow for electrification of the school bus load.

Project Scope:

Install 3-333kVA voltage regulator along feeder mainline to ensure system voltage is maintained to support the customers increased load.

Long Lead-Time Materials:
3-333 kVA Voltage Regulator.

Customer Benefit:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C092949– Electric Vehicle Upgrades 89553	

This project will enable additional electrification capacity, which will offer a reduction of C02, compared to fossil-fuel based transportation. This will look to support EV school bus deployment by enabling new capacity and electrification. In addition, the urgency of these projects will look reduce time for interconnection by prioritizing construction. This project supports system voltage further from the station which enables additional load to be served without creating low system voltage. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

N/A

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practically be addressed with an NWA. Based on the current justifications and project costs, this project does not meet the Company's NWA evaluation criteria and is not to be considered for NWA based on its project cost and is not feasible for deferral. Therefore, this is no other alternative for consideration.

Supplemental Information

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☑ Yes ☐No

CLCPA Project: ☐Yes ☑ No

Disadvantaged Community: ☑ Yes ☐No

Article 7 Project: ☐Yes ☑ No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Funding and Schedule Information

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C092949– Electric Vehicle Upgrades 89553	

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C092949	CapEx	0.00	0.00	200.00	0.00	0.00	0.00	200.00
	OpEx	0.00	0.00	25.00	0.00	0.00	0.00	25.00
	Removal	0.00	0.00	25.00	0.00	0.00	0.00	25.00
	Total	0.00	0.00	250.00	0.00	0.00	0.00	250.00

Estimate Grade:

Begin Preliminary Engineering: 04/2025

Final Design Complete: 10/2025

Construction Start: 01/2025

In Service Date: 03/2026

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C092948– Electric Vehicle Upgrades 81458	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): 0

Associated Funding Numbers (if applicable): N/A

Description:

This project is to install system upgrades to enable electrification of [redacted] buses supported by IIJA funding.

Project Justification:

The system load increase caused by electrification of the school bus fleet at the local school district is driving the need for additional voltage regulation. The local school district was awarded IIJA funding to support the bus electrification in the near term and this project is required to maintain voltage quality for the increased load. These upgrades are required in order to allow for electrification of the school bus load.

Project Scope:

Install 3-333kVA voltage regulators along feeder mainline to ensure system voltage is maintained to support the customer's increased load.

Long Lead-Time Materials:
3-333 kVA Voltage Regulator.

Customer Benefit:

This project will enable additional electrification capacity, which will offer a reduction of C02, compared to fossil-fuel based transportation. This will look to support EV school bus deployment by enabling new capacity and electrification. In addition, the urgency of these projects will look reduce time for interconnection by prioritizing construction. This project supports system voltage further from the station which enables additional load to be served without creating low system voltage. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet** C092948– Electric Vehicle Upgrades 81458	

N/A

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practically be addressed with an NWA. Based on the current justifications and project costs, this project does not meet the Company's NWA evaluation criteria and is not to be considered for NWA based on its project cost and is not feasible for deferral. Therefore, this is no other alternative for consideration.

Supplemental Information

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☑ Yes ☐ No

CLCPA Project: ☐ Yes ☑ No

Disadvantaged Community: ☑ Yes ☐ No

Article 7 Project: ☐ Yes ☑ No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C092948	CapEx	0.00	0.00	200.00	0.00	0.00	0.00	200.00
	OpEx	0.00	0.00	25.00	0.00	0.00	0.00	25.00
	Removal	0.00	0.00	25.00	0.00	0.00	0.00	25.00
	Total	0.00	0.00	250.00	0.00	0.00	0.00	250.00

Estimate Grade:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C092948– Electric Vehicle Upgrades 81458	

Begin Preliminary Engineering: 04/2025
Final Design Complete: 10/2025
Construction Start: 01/2025
In Service Date: 03/2026

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet** C015754 – [redacted]	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): 0

Associated Funding Numbers (if applicable): C09xxxx for SubT pole replacement

Description:

CNY Bus Depot is Electrifying its fleet. The projected load is 2.2MVA.

Project Justification:

[redacted] has submitted a request for 2.2MVA load addition will take the feeder to 101% of the feeder's summer normal rating. The local area's ratio transformer also has system capacity concerns. [redacted] load request requires system upgrades to serve the needed load caused by the electrification request of vehicles and buses. The customer cannot interconnect without the completion of upgrades.

Project Scope:

Replace ~1,200 of cable with 1000CU. Also, replace ~6,600' of 4/0 lashed aerial cable with 336AAC open wire (note that this entire 6,600' is underbuilt on sub-transmission poles which will also need to be replaced). In addition, convert the local area to 13.2kV.

Long Lead-Time Materials:

1000CU cable

Customer Benefit:

This project will enable 2.2 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based transportation. This will look to support public transportation by enabling new capacity and electrification. In addition, the urgency of these projects will look reduce time for interconnection by prioritizing construction. Additional system capacity to serve load in the community and support electrification of the [redacted]. Without this project being completed, the customer will not be able to service their load request.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	[redacted]	

Alternatives:
N/A
DER/NWA Analysis:
The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practically be addressed with an NWA. This is a customer-request project that addresses asset system capacity needs. Components of this project pertaining to System Capacity will be considered for NWA, and analysis is currently ongoing.

Supplemental Information

Sanction Paper Number:
Transferred from Cases 24-E-0322: ☐ Yes ☑ No
CLCPA Project: ☐Yes ☑ No
Disadvantaged Community: ☐Yes ☑ No
Article 7 Project: ☐Yes ☑ No
Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C015754	CapEx	0.00	100.00	420.00	3040.00	7800.00	3060.00	14420.00
	OpEx	0.00	0.00	0.00	0.00	0.00	380.00	380.00
	Removal	0.00	0.00	0.00	0.00	0.00	200.00	200.00
	Total	0.00	100.00	420.00	3040.00	7800.00	3640.00	15000.00

Estimate Grade:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	[redacted]	

Begin Preliminary Engineering: 11/2024
Final Design Complete: 4/2025
Construction Start: 4/2026
In Service Date: 12/2028

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C092845 EV-[redacted]Incremental	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable): N/A

Description:

This project is to reconductor approximately 1,500 feet of Southland feeder 8462 for [redacted] new EV charger service.

Project Justification:

This project is to facilitate the incremental EV charging load associated with [redacted]. The customer is acquiring 24 electric buses and their associated chargers. About 943 kVA of incremental load is expected. Customer has an accelerated timeline and expected date of power delivery for the requested load. To meet customers expected in-service date, National Grid must proactively engineer and design a service arrangement as well as procure long lead material items, ahead of funding approval, design completion, and resource coordination.

Project Scope:

C092845:
Reconductor approximately 1,500 ft of existing 336.4 AL to 477 AL on Southland Feeder 8462.
Long Lead-Time Materials:
Padmount transformer (12 months, not ordered).

Customer Benefit:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C092845 [redacted]	

This project will enable 0.943 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based transportation. This will allow interconnection of electrical vehicle charging related to EV school bus fleets. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By reconductoring we are supplying the customer load requirements. This portion of the feeder will be encumbered for the next ten years with an opportunity to supply future customers in the area. Without this project being completed, the customer will not be able to service their load request.
Alternatives: None
DER/NWA Analysis:
The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As project is customer driven and construction is currently ongoing or will commence within less than 18 months, this project does not satisfy the Timeline Suitability Criteria and will not be evaluated for a potential NWA.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C092845 [redacted]	

Supplemental Information

Sanction Paper Number: None

Transferred from Cases 24-E-0322: ☑Yes ☐No

CLCPA Project: ☐Yes ☑ No

Disadvantaged Community Impact: ☐Yes ☑No

Article 7 Project: ☐Yes ☑No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☐	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Yes

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C092845	CapEx	0.00	0.00	425.00	0.00	0.00	0.00	425.00
	OpEx	0.00	0.00	50.00	0.00	0.00	0.00	50.00
	Removal	0.00	0.00	25.00	0.00	0.00	0.00	25.00
	Total	0.00	0.00	500.00	0.00	0.00	0.00	500.00

Estimate Grade: N/A

Begin Preliminary Engineering: 4/2025

Final Design Complete: 6/2025

Construction Start: 9/2025

In Service Date: 3/2026

Project Data Sheets

Building Electrification

Sub-Transmission Multiple Occupancy Buildings Projects

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	CXXXXXX - North Aud	Version 1

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☐Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable): N/A

Description:

The project is supplying new Customer load with an anticipated request of ~4.7MW for a multi building development at [redacted] in Buffalo, New York. The customer is building multiple occupancy buildings utilizing Electric heating and a parking garage with Electric Vehicle charging to align with the current electrification goals of New York State. The shift to electrification has increased the anticipated connected and diversified load submitted by the customer to follow the current NESC requirements.

Project Justification:

This is a customer connection project with a proposed service size greater than 1600A, due increased electric heating load and EV charging load, which cannot be served from the surrounding Low Voltage AC network (General Network) that supplies majority of the customers in the network area. To provide the customer with the proposed load at the requested service voltage (277/480V or 120/208V). National Grid must extend multiple 23kV cables to a customer owned vault with National grid owned Network Transformers and Network Protectors (Spot Network). Customers have an accelerated timeline and expected date of power delivery for the requested load of 4.7MW. To meet customers expected in-service date national Grid must proactively engineer and design a service arrangement as well as procure long lead material items, sometimes ahead of funding approval, design completion, and resource coordination.

Project Scope:

With an anticipated load of 4.7MW this customer is looking at a minimum of Six (6) Network transformers/protectors if served at 120/208V and three (3) if served at 277/480V with a minimum of

three (3) 23kV cables extend to the parcel and throughout the site, approximately 100 ft per cable for 300 total feet of cable to be pulled.

Long Lead-Time Materials:

Six (6) 1000kVA 23kV>208V Network transformers. (8-12 months)
Six (6) 3500A Network protectors. (8-12 months)

Customer Benefit:

This project will enable 4.7 MVA of additional capacity, which will offer a reduction of C02 reduction by 2050, compared to fossil-fuel based heating. This will look to support new customer building heating electrification loading by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By installing two (2) new 23kV cables we are supplying the customer load requirements with mandatory redundancy on the 23kV system. The installation at this point is a sole source for the Customer at [redacted] Buffalo, New York. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

Alternatives: Customer takes primary service at 23kV and is responsible for their own transformation.

NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As the project is customer driven and construction is to directly service customer interconnection, deferral is infeasible and therefore NWA is not to be considered.

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	CXXXXXX - North Aud	Version 1

Supplemental Information

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Phase 1 Project: ☐Yes ☑ No

Disadvantaged Community Impact: ☐Yes ☑ No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
No ☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

Insert relevant narrative here

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands) Sub T

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Sub-Transmission	CapEx	N/A	0	0	357.00	0	0	357.00
	OpEx	0	0	0	42.00	0	0	42.00
	Removal	0	0	0	21.00	0	0	21.00
	Total	N/A	0	0	420.00	0	0	420.00

Total Project Cost Breakdown: ($ Thousands) Distribution

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Distribution	CapEx	N/A	0	765.00	0	0	0	765.00
	OpEx	0	0	90.00	0	0	0	90.00
	Removal	0	0	45.00	0	0	0	45.00
	Total	N/A	0	900.00	0	0	0	900.00

Estimate Grade: 4.0

Begin Preliminary Engineering: 4/1/2025

Final Design Complete: 1/1/2026

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	CXXXXXX - North Aud	Version 1

Construction Start:	2/1/2026
In Service Date:	3/31/2027

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	Version 1

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable): Dist. and Sub-T Funding Numbers expected

Description:

Associated Distribution and Sub-Transmission equipment work for connecting new service to the Multiple Occupancy Building at [redacted]. The customer is building two (2) large multiple occupancy buildings and four (4) townhomes, utilizing electric heating, and installing EV chargers to align with the current electrification goals of New York State. The shift to electrification has increased the anticipated connected and diversified load submitted by the customer to follow the current NESC requirements. To accommodate the increased load, a 23kV Sub T solution is required for this customer.

Project Justification:

Customer requests 2.32 MW new business service, pending service arrangement; currently assumed at 208V. The proposed load is greater than 1 MW due to the additional electric heat and EV charging load at the premise: it is unable to be served from the surrounding 4.16kV feeders as a result. To provide the customer with the proposed load at the requested service voltage, National Grid must extend two (2) 23kV cables to the customer's property. Customer has an accelerated timeline and expected date of power delivery for the requested load of 2.32 MW. To meet customers expected in-service date, National Grid must proactively engineer and design a service arrangement as well as procure long lead material items, sometimes ahead of funding approval, design completion, and resource coordination.

Project Scope:

Install:

<u>Sub-Transmission Work:</u>

- **25kV 1/0 Cu Cable** from MH 242 to customer site (~2100 feet total), extending cables 14K and 12K.
    - Engineering study required to determine if existing infrastructure (PVC conduit,

manholes, etc.) can support cable extension or needs to be rebuilt
    - Engineering study required to determine if cables can support customer load once service arrangement and load are determined
- **Six (6) 5-inch PVC conduit** from MH 242 to customer site (~1050 feet total). 4 conduits needed for customer use (2 active use, 2 spare), 2 for future use.

Distribution Work:

- **Three (3) padmount transformers:** Two (2) 23kV-208/120V 750 kVA, One (1) 23kV-208/120V 1000 kVA.
- **Two (2) 35kV padmount switchgear.**
    - Required equipment based off of 208V service assumption
    - Customer will install 2 switchgear manholes, 2 switchgear pads, 3 transformer pads, and all secondary cable

Long Lead-Time Materials

- Padmount switchgears (12 months, not ordered), padmount transformers (12 months, not ordered),

Customer Benefit:

This project will enable 2.32 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support community housing electric heating by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By installing two (2) new 23kV cables we are supplying the customer load requirements with mandatory redundancy on the 23kV system. The installation at this point is a sole source for the Customer at [redacted], Buffalo, NY. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

Due to the load at the site exceeding 1MW, it is unable to be serviced from the surrounding distribution system. The only alternative to feed the site is to extend the transmission system into the area to service the customer. This option faces significant challenges due to the necessary infrastructure upgrades, right-of-way acquisition, regulatory approval, and environmental concerns it would take to extend the current 115kV lines which span outside of the city of Buffalo's boundary. The lengthy timeframe and project complexity this pose does not align with the customer's urgent power delivery expectations.

NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As the project is customer driven and construction is to directly service customer interconnection, deferral is infeasible and therefore NWA is not to be considered.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	Version 1

Supplemental Information

Sanction Paper Number: None

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Phase 1 Project: ☐Yes ☑ No

Disadvantaged Community Impact: ☐Yes ☑No

Article 7 Project: ☐Yes ☐No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☐	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

None

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Distribution	CapEx	0	0	425.00	0	0	0	425.00
	OpEx	0	0	50.00	0	0	0	50.00
	Removal	0	0	25.00	0	0	0	25.00
	Total	0	0	500.00	0	0	0	500.00

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Sub-Transmission	CapEx	0	0	0	1,252.90	0	0	1,252.90
	OpEx	0	0	0	147.40	0	0	147.40
	Removal	0	0	0	73.70	0	0	73.70
	Total	0	0	0	1,474.00	0	0	1,474.00

Estimate Grade: 4.0

Begin Preliminary Engineering: 4/2025

Final Design Complete: 1/2026

Construction Start: 2/2026

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	Version 1

In Service Date:	3/2027

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable): Dist. and Sub-T Funding Numbers expected

Description:

Associated Distribution and Sub-Transmission equipment work for connecting new service to the Multiple Occupancy Building at [redacted] The customer is building one (1) large multiple occupancy building and five (5) townhomes, utilizing electric heating and installing EV chargers to align with the current electrification goals of New York State. The shift to electrification has increased the anticipated connected and diversified load submitted by the customer to follow the current NESC requirements. To accommodate the increased load, a 23kV Sub T solution is required for this customer.

Project Justification:

Customer requests 1.361 MW new business service, pending service arrangement; currently assumed at 208V. The proposed load is greater than 1 MW due to the additional electric heat and EV charging load at the premise: it is unable to be served from the surrounding 4.16kV feeders as a result. To provide the customer with the proposed load at the requested service voltage, National Grid must extend two (2) 23kV cables to the customer's property. The customer has an accelerated timeline and expected date of power delivery for the requested load of 1.361 MW. To meet customers expected in-service date, National Grid must proactively engineer and design a service arrangement as well as procure long lead material items, sometimes ahead of funding approval, design completion, and resource coordination.

Project Scope:

Install:

<u>Sub-Transmission Work:</u>

- **25kV 1/0 Cu Cable** from MH 976 to customer site (~200 feet total), extending cables 18E and 27E.
    - Engineering study required to determine if existing infrastructure (PVC conduit, manholes, etc.) can support cable extension or needs to be rebuilt

- Engineering study required to determine if cables can support customer load once service arrangement and load are determined

Distribution Work:

- **Two (2) 23kV-208/120V 750 kVA padmount transformers**
- **One (1) 35kV padmount switchgear.**
  - Required equipment based off of 208V service assumption
  - Customer will install 1 switchgear manhole, 1 switchgear pad, 2 transformer pads, and all secondary cable

Long Lead-Time Materials:

- Padmount switchgear (12 months, not ordered), padmount transformers (12 months, not ordered)

Customer Benefit:

This project will enable 1.36 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support new building heat electrification by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By installing two (2) new 23kV cables we are supplying the customer load requirements with mandatory redundancy on the 23kV system. The installation at this point is the sole source for the [redacted] at [redacted], Buffalo, NY. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

Due to the load at the site exceeding 1MW, it is unable to be serviced from the existing surrounding distribution system, unless it is converted to 13.2kV. The only other alternative to feed the site is to extend the transmission system into the area to service the customer. Both options face significant challenges due to the necessary infrastructure upgrades, right-of-way acquisition, regulatory approval, and environmental concerns it would take to either convert the existing 4.16kV system to 13.2kV, or to extend the current 115kV lines which span outside of the city of Buffalo's boundary. The lengthy timeframe and project complexity both alternatives pose do not align with the customer's urgent power delivery expectations.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As the project is customer driven and construction is to directly service customer interconnection, deferral is infeasible and therefore NWA is not to be considered.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	

Supplemental Information

Sanction Paper Number: None

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Phase 1 Project: ☐Yes ☑ No

Disadvantaged Community Impact: ☐Yes ☑No

Article 7 Project: ☐Yes ☐No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

None

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Distribution	CapEx	0	0	255.00	0	0	0	255.00
	OpEx	0	0	30.00	0	0	0	30.00
	Removal	0	0	15.00	0	0	0	15.00
	Total	0	0	300.00	0	0	0	300.00

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Sub-Transmission	CapEx	0	0	0	119.00	0	0	119.00
	OpEx	0	0	0	14.00	0	0	14.00
	Removal	0	0	0	7.00	0	0	7.00
	Total	0	0	0	140.00	0	0	140.00

Estimate Grade: 4.0

Begin Preliminary Engineering: 4/1/2025

Final Design Complete: 1/1/2026

Construction Start: 2/1/2026

In Service Date: 3/31/2027

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable): Dist. and Sub-T Funding Numbers expected

Description:

Associated Distribution and Sub-Transmission equipment work for connecting new service to the Multiple Occupancy Building at [redacted]. The customer is building one large multiple occupancy building, utilizing electric heating, and installing EV chargers to align with the current electrification goals of New York State. The shift to electrification has increased the anticipated connected and diversified load submitted by the customer to follow the current NESC requirements. To accommodate the increased load, a 23kV Sub T solution is required for this customer.

Project Justification:

The interconnection requires 5.0 MW as a new business service. The proposed load is greater than 1 MW due to the additional electric heat and EV charging load at the premise: it is unable to be served from the surrounding 4.16kV feeders as a result. To provide the customer with the proposed load at the requested service voltage, National Grid must extend two (2) 23kV cables to the customer's property. The customer has an accelerated timeline and expected date of power delivery for the assumed requested load of 5.0 MW. To meet customers expected in-service date, National Grid must proactively engineer and design a service arrangement as well as procure long lead material items, sometimes ahead of funding approval, design completion, and resource coordination.

Project Scope:

Install:

Sub-Transmission Work:

- **25kV 1/0 Cu Cable** from MH 1662 to customer site (~1,570 feet total), extending cables 15H and 12H.
    - Engineering study required to determine if existing infrastructure (PVC conduit, manholes, etc.) can support cable extension or needs to be rebuilt

- Engineering study required to determine if cables can support customer load once service arrangement and load are determined

Distribution Work:

- **Five (5) 23kV-208/120V 1000 kVA padmount transformers**
- **Three (3) 35kV padmount switchgear.**
  - Required equipment based off of 5.0 MVA load and 208V service assumption
  - Customer will install 3 switchgear manholes, 3 switchgear pads, 5 transformer pads, and all secondary cable

Long Lead-Time Materials:

- Padmount switchgears (12 months, not ordered), padmount transformers (12 months, not ordered)

Customer Benefit:

This project will enable at least 1 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support community housing heating electrification within a disadvantaged community by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By installing two (2) new 23kV cables we are supplying the customer load requirements with mandatory redundancy on the 23kV system. The installation at this point is a sole source for [redacted] at [redacted], Buffalo, NY. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

Due to the load at the site exceeding 1 MW, it is unable to be serviced from the surrounding distribution system. The only alternative to feed the site is to extend the transmission system into the area to service the customer. This option faces significant challenges due to the necessary infrastructure upgrades, right-of-way acquisition, regulatory approval, and environmental concerns it would take to extend the current 115kV lines which span outside of the city of Buffalo's boundary. The lengthy timeframe and project complexity this pose does not align with the customer's urgent power delivery expectations.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As the project is customer driven and construction is to directly service customer interconnection, deferral is infeasible and therefore NWA is not to be considered.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	

Supplemental Information

Sanction Paper Number: None

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Phase 1 Project: ☐Yes ☑ No

Disadvantaged Community Impact: ☑Yes ☐No

Article 7 Project: ☐Yes ☐No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

None

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Distribution	CapEx	0	0	595.00	0	0	0	595.00
	OpEx	0	0	70.00	0	0	0	70.00
	Removal	0	0	35.00	0	0	0	35.00
	Total	0	0	700.00	0	0	0	700.00

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Sub-Transmission	CapEx	0	0	0	1,878.50	0	0	1,878.50
	OpEx	0	0	0	221.00	0	0	221.00
	Removal	0	0	0	110.50	0	0	110.50
	Total	0	0	0	2,210.00	0	0	2,210.00

Estimate Grade: 4.0

Begin Preliminary Engineering: 4/1/2025

Final Design Complete: 1/1/2026

Construction Start: 2/1/2026

In Service Date: 3/31/2027

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable): Dist. and Sub-T Funding Numbers expected

Description:

Associated Distribution and Sub-Transmission equipment work for connecting new service to the Multiple Occupancy Building at [redacted]. The customer is building five (5) multiple occupancy buildings, utilizing electric heating, and installing EV chargers to align with the current electrification goals of New York State. The shift to electrification has increased the anticipated connected and diversified load submitted by the customer to follow the current NESC requirements. To accommodate the increased load, a 23kV Sub T solution is required for this customer.

Project Justification:

The interconnection requires 5.0 MW as a new business service. The proposed load is greater than 1 MW due to the additional electric heat and EV charging load at the premise: it is unable to be served from the surrounding 4.16kV feeders as a result. To provide the customer with the proposed load at the requested service voltage, National Grid must extend two (2) 23kV cables to the customer's property. Customer has an accelerated timeline and expected date of power delivery for the assumed requested load of 5.0 MW. To meet customers expected in-service date, National Grid must proactively engineer and design a service arrangement as well as procure long lead material items, sometimes ahead of funding approval, design completion, and resource coordination.

Project Scope:

Install:

Sub-Transmission Work:

- **25kV 1/0 Cu Cable** from MH 1764 to customer site (~2400 feet total), extending cables 6K and 2K.
    - Engineering study required to determine if existing infrastructure (PVC conduit, manholes, etc.) can support cable extension or needs to be rebuilt
    - Engineering study required to determine if cables can support customer load once

service arrangement and load are determined

Distribution Work:

- **Five (5) 23kV-208/120V 1000 kVA padmount transformers**
- **Three (3) 35kV padmount switchgear.**
  - Required equipment based off of 5.0 MVA load and 208V service assumption
  - Customer will install 3 switchgear manholes, 3 switchgear pads, 5 transformer pads, and all secondary cable

Long Lead-Time Materials:

- Padmount switchgears (12 months, not ordered), padmount transformers (12 months, not ordered)

Customer Benefit:

This project will enable 5 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support community housing heating electrification and within a disadvantaged community by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By installing two (2) new 23kV cables we are supplying the customer load requirements with mandatory redundancy on the 23kV system. The installation at this point is the sole source for [redacted], NY. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

Due to the load at the site exceeding 1MW, it is unable to be serviced from the surrounding distribution system. The only alternative to feed the site is to extend the transmission system into the area to service the customer. This option faces significant challenges due to the necessary infrastructure upgrades, right-of-way acquisition, regulatory approval, and environmental concerns it would take to extend the current 115kV lines which span outside of the city of Buffalo's boundary. The lengthy timeframe and project complexity this pose does not align with the customer's urgent power delivery expectations.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As the project is customer driven and construction is to directly service customer interconnection, deferral is infeasible and therefore NWA is not to be considered.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	

Supplemental Information

Sanction Paper Number: None

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Phase 1 Project: ☐Yes ☑ No

Disadvantaged Community Impact: ☑Yes ☐No

Article 7 Project: ☐Yes ☐No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

None

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Distribution	CapEx	0	0	595.00	0	0	0	595.00
	OpEx	0	0	70.00	0	0	0	70.00
	Removal	0	0	35.00	0	0	0	35.00
	Total	0	0	700.00	0	0	0	700.00

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Sub-Transmission	CapEx	0	0	0	1,436.50	0	0	1,436.50
	OpEx	0	0	0	169.00	0	0	169.00
	Removal	0	0	0	84.50	0	0	84.50
	Total	0	0	0	1,690.00	0	0	1,690.00

Estimate Grade: 4.0

Begin Preliminary Engineering: 4/1/2025

Final Design Complete: 1/1/2026

Construction Start: 2/1/2026

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	

In Service Date:	3/31/2027

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable): Dist. and Sub-T Funding Numbers expected

Description:

Associated Distribution and Sub-Transmission equipment work for connecting new service to the Multiple Occupancy Building at 1707 Hertel Ave. The customer is building one large multiple occupancy building, utilizing electric heating and installing EV chargers to align with the current electrification goals of New York State. The shift to electrification has increased the anticipated connected and diversified load submitted by the customer to follow the current NESC requirements. To accommodate the increased load, a 23kV Sub T solution is required for this customer.

Project Justification:

The interconnection requires 5.0 MW for a new business service. The proposed load is greater than 1 MW due to the additional electric heat and EV charging load at the premise: it is unable to be served from the surrounding 4.16kV feeders as a result. To provide the customer with the proposed load at the requested service voltage, National Grid must extend two (2) 23kV cables to the customer's property. Customer has an accelerated timeline and expected date of power delivery for the assumed requested load of 5.0 MW. To meet customers expected in-service date, National Grid must proactively engineer and design a service arrangement as well as procure long lead material items, sometimes ahead of funding approval, design completion, and resource coordination.

Project Scope:

Install:

Sub-Transmission Work:

- **25kV 1/0 Cu Cable** from MH 1705 to customer site (~200 feet total), extending cables 11K and 15K.
    - Engineering study required to determine if existing infrastructure (PVC conduit, manholes, etc.) can support cable extension or needs to be rebuilt

- Engineering study required to determine if cables can support customer load once service arrangement and load are determined

Distribution Work:

- **Five (5) 23kV-208/120V 1000 kVA padmount transformers**
- **Three (3) 35kV padmount switchgear.**
  - Required equipment based off of 5.0 MVA load and 208V service assumption
  - Customer will install 3 switchgear manholes, 3 switchgear pads, 5 transformer pads, and all secondary cable

Long Lead-Time Materials

- Padmount switchgears (12 months, not ordered), padmount transformers (12 months, not ordered)

Customer Benefit:

This project will enable at least 1 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support development of buildings utilizing electric heating by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By installing two (2) new 23kV cables we are supplying the customer load requirements with mandatory redundancy on the 23kV system. The installation at this point is a sole source for [redacted] Buffalo, NY. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

Due to the load at the site exceeding 1MW, it is unable to be serviced from the surrounding distribution system. The only alternative to feed the site is to extend the transmission system into the area to service the customer. This option faces significant challenges due to the necessary infrastructure upgrades, right-of-way acquisition, regulatory approval, and environmental concerns it would take to extend the current 115kV lines which span outside of the city of Buffalo's boundary. The lengthy timeframe and project complexity this pose does not align with the customer's urgent power delivery expectations.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As the project is customer driven and construction is to directly service customer interconnection, deferral is infeasible and therefore NWA is not to be considered.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	

Supplemental Information

Sanction Paper Number: None

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Phase 1 Project: ☐Yes ☑ No

Disadvantaged Community Impact: ☐Yes ☑No

Article 7 Project: ☐Yes ☐No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

None

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Distribution	CapEx	0	0	595.00	0	0	0	595.00
	OpEx	0	0	70.00	0	0	0	70.00
	Removal	0	0	35.00	0	0	0	35.00
	Total	0	0	700.00	0	0	0	700.00

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Sub-Transmission	CapEx	0	0	0	119.00	0	0	119.00
	OpEx	0	0	0	14.00	0	0	14.00
	Removal	0	0	0	7.00	0	0	7.00
	Total	0	0	0	140.00	0	0	140.00

Estimate Grade: 4.0

Begin Preliminary Engineering: 4/1/2025

Final Design Complete: 1/1/2026

Construction Start: 2/1/2026

In Service Date: 3/31/2027

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable): Dist. and Sub-T Funding Numbers expected

Description:

Associated Distribution and Sub-Transmission equipment work for connecting new service to the Multiple Occupancy Building at [redacted]. The customer is building a large multiple occupancy building, utilizing electric heating and installing EV chargers to align with the current electrification goals of New York State. The shift to electrification has increased the anticipated connected and diversified load submitted by the customer to follow the current NESC requirements. To accommodate the increased load, a 23kV Sub T solution is required for this customer.

Project Justification:

Customer requests 2.57 MW new business service, pending service arrangement; currently assumed at 208V. The proposed load is greater than 1 MW due to the additional electric heat and EV charging load at the premise: it is unable to be served from the surrounding 4.16kV feeders as a result. To provide the customer with the proposed load at the requested service voltage, National Grid must extend two (2) 23kV cables to the customer's property. The customer has an accelerated timeline and expected date of power delivery for the assumed requested load of 2.57 MW. To meet customers expected in-service date, the Company must proactively engineer and design a service arrangement as well as procure long lead material items, sometimes ahead of funding approval, design completion, and resource coordination.

Project Scope:

Install:

<u>Sub-Transmission Work:</u>

- **25kV 1/0 Cu Cable** from MH 1626 to customer site (~3,600 feet total), extending cables 4K and 5K.
  - Engineering study required to determine if existing infrastructure (PVC conduit,

manholes, etc.) can support cable extension or needs to be rebuilt
    - Engineering study required to determine if cables can support customer load once service arrangement and load are determined

Distribution Work:

- **Three (3) padmount transformers:** One (1) 23kV-208/120V 750 kVA, Two (2) 23kV-208/120V 1000 kVA.
- **Two (2) 35kV padmount switchgear.**
    - Required equipment based off of 208V service assumption
    - Customer will install 2 switchgear manholes, 2 switchgear pads, 3 transformer pads, and all secondary cable

Long Lead-Time Materials:

- Padmount switchgears (12 months, not ordered), padmount transformers (12 months, not ordered)

Customer Benefit:

This project will enable at least 1 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support community housing heating electrification by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By installing two (2) new 23kV cables we are supplying the customer load requirements with mandatory redundancy on the 23kV system. The installation at this point is a sole source for [redacted], Buffalo, NY. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

Due to the load at the site exceeding 1 MW, it is unable to be serviced from the surrounding distribution system. The only alternative to feed the site is to extend the transmission system into the area to service the customer. This option faces significant challenges due to the necessary infrastructure upgrades, right-of-way acquisition, regulatory approval, and environmental concerns it would take to extend the current 115kV lines which span outside of the city of Buffalo's boundary. The lengthy timeframe and project complexity this poses does not align with the customer's urgent power delivery expectations.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As the project is customer driven and construction is to directly service customer interconnection, deferral is infeasible and therefore NWA is not to be considered.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	

Supplemental Information

Sanction Paper Number: None

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Phase 1 Project: ☐Yes ☑ No

Disadvantaged Community Impact: ☐Yes ☑No

Article 7 Project: ☐Yes ☐No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

None

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Distribution	CapEx	0	0	595.00	0	0	0	595.00
	OpEx	0	0	70.00	0	0	0	70.00
	Removal	0	0	35.00	0	0	0	35.00
	Total	0	0	700.00	0	0	0	700.00

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Sub-Transmission	CapEx	0	0	0	2,150.50	0	0	2,150.50
	OpEx	0	0	0	253.00	0	0	253.00
	Removal	0	0	0	126.50	0	0	126.50
	Total	0	0	0	2,530.00	0	0	2,530.00

Estimate Grade: 4.0

Begin Preliminary Engineering: 4/1/2025

Final Design Complete: 1/1/2026

Construction Start: 2/1/2026

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	

In Service Date:	3/31/2027

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable): Dist. and Sub-T Funding Numbers expected

Description:

Associated Distribution and Sub-Transmission equipment work for connecting new service to the Multiple Occupancy Building at [redacted]. The customer is building large multiple occupancy buildings, utilizing electric heating, and installing EV chargers to align with the current electrification goals of New York State. The shift to electrification has increased the anticipated connected and diversified load submitted by the customer to follow the current NESC requirements. To accommodate the increased load, a 23kV Sub T solution is required for this customer.

Project Justification:

Customers have an accelerated timeline and expected date of power delivery for the requested load of 5MW. To meet customers expected in-service date National Grid must proactively engineer and design a service arrangement as well as procure long lead material items, sometimes ahead of funding approval, design completion, and resource coordination. Customers have an accelerated timeline and expected date of power delivery for the requested load of 5MW. The in-service date is dependent on procurement of long lead material items, sometimes ahead of funding approval, design completion, and resource coordination..

Project Scope:

Install:

Sub-Transmission Work:

- **25kV 1/0 Cu Cable** from MH 925 to customer site (~1700 feet) extending cable 2K, and from MH 630 to customer site (~650 feet) extending cable 5K (~2350 feet total).
    - Engineering study required to determine if existing infrastructure (PVC conduit, manholes, etc.) can support cable extension or needs to be rebuilt

- Engineering study required to determine if cables can support customer load once service arrangement and load are determined
- **Six (6) 5-inch PVC conduit** from MH 630 to customer site (~650 feet total). 4 conduits needed for customer use (2 active use, 2 spare), 2 for future use.

Distribution Work:

- **Five (5) 23kV-208/120V 1000 kVA padmount transformers**
- **Three (3) 35kV padmount switchgear.**
  - Required equipment based off of 5.0 MVA load and 208V service assumption
  - Customer will install 3 switchgear manholes, 3 switchgear pads, 5 transformer pads, and all secondary cable

Long Lead-Time Materials:

- Padmount switchgears (12 months, not ordered), padmount transformers (12 months, not ordered)

Customer Benefit:

This project will enable 1.13 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support new business heating electrification by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By installing two (2) new 23kV cables we are supplying the customer load requirements with mandatory redundancy on the 23kV system. The installation at this point is the sole source for [redacted], NY. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

Due to the load at the site exceeding 1MW, it is unable to be serviced from the surrounding distribution system. The only alternative to feed the site is to extend the transmission system into the area to service the customer. This option faces significant challenges due to the necessary infrastructure upgrades, right-of-way acquisition, regulatory approval, and environmental concerns it would take to extend the current 115kV lines which span outside of the city of Buffalo's boundary. The lengthy timeframe and project complexity this poses does not align with the customer's urgent power delivery expectations.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As the project is customer driven and construction is to directly service customer interconnection, deferral is infeasible and therefore NWA is not to be considered.

Supplemental Information

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet** CXXXXXX [redacted]	

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Phase 1 Project: ☐Yes ☑ No

Disadvantaged Community Impact: ☐Yes ☑No

Article 7 Project: ☐Yes ☐No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

None

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Distribution	CapEx	N/A	0	352.75	0	0	0	352.75
	OpEx	0	0	41.50	0	0	0	41.50
	Removal	0	0	20.75	0	0	0	20.75
	Total	N/A	0	415.00	0	0	0	415.00

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
Sub-Transmission	CapEx	N/A	0	0	1,589.50	0	0	1,589.50
	OpEx	0	0	0	187.00	0	0	187.00
	Removal	0	0	0	93.50	0	0	93.50
	Total	N/A	0	0	1,870.00	0	0	1,870.00

Estimate Grade: 4.0

Begin Preliminary Engineering: 4/1/2025

Final Design Complete: 1/1/2026

Construction Start: 2/1/2026

In Service Date: 3/31/2027

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	CXXXXXX [redacted]	

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C096246, C096247 [redacted]	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☐Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable): C096247, C096246

Description:

Associated work for connecting new service to the apartment property at [redacted]. The customer is building one large multiple occupancy building, utilizing electric heating and installing EV chargers to align with the current electrification goals of New York State. The shift to electrification has increased the anticipated connected and diversified load submitted by the customer to follow the current NESC requirements. To accommodate the increased load, a 23kV Sub T solution is required for this customer.

Project Justification:

Customer requests 2.7 MW new business service at two secondary voltages: 208V & 480V. The proposed load is greater than 1 MW due to the additional electric heat and EV charging load at the premise: it is unable to be served from the surrounding 4.16kV feeders as a result. To provide the customer with the proposed load at the requested service voltage, National Grid must extend two (2) 23kV cables to the customer's property. The customer has an accelerated timeline and expected date of power delivery for the requested load of 2.7 MW. To meet customers expected in-service date, National Grid must proactively engineer and design a service arrangement as well as procure long lead material items, sometimes ahead of funding approval, design completion, and resource coordination.

Project Scope:

C096246:

- **Six (6) 4-inch PVC conduit** from MH 138 to MH 112 (~275 feet total). 4 conduits needed for customer use (2 active use, 2 spare), 2 for future use.
    - MH 138 and MH 112 (along with associated ducts and conduits to be installed) are both present under sidewalk, off-road.
- **Four (4) 4-inch PVC conduit** from MH 112 to customer property line (~225 feet total). 4 conduits

needed for customer use (2 active use, 2 spare).

- **25kV 1/0 Cu Cable** from MH 138 to customer site (~1000 feet total), extending cables 16H and 18H.

C096247:

- **Three (3) padmount transformers:** Two (2) 23kV-208/120V 1000 kVA, One (1) 23kV-480/277V 1500kVA.
- **Two (2) 35kV padmount switchgear.**

Customer will install 2 switchgear manholes, 2 switchgear pads, 3 transformer pads, and all secondary cable

Long Lead-Time Materials:
Padmount transformers (12 months, not ordered), padmount switchgear (12 months, not ordered)

Customer Benefit:

This project will enable 2.57 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating and transportation. This will look to support new building development electric heating and EV interconnections by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By installing two (2) new 23kV cables we are supplying the customer load requirements with mandatory redundancy on the 23kV system. The installation at this point is a sole source for the Customer at [redacted], NY. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

Due to the load at the site exceeding 1 MW, it is unable to be serviced from the surrounding distribution system. The only alternative to feed the site is to extend the transmission system into the area to service the customer. This option faces significant challenges due to the necessary infrastructure upgrades, right-of-way acquisition, regulatory approval, and environmental concerns it would take to extend the current 115kV lines which span outside of the city of Buffalo's boundary. The lengthy timeframe and project complexity this pose does not align with the customer's urgent power delivery expectations.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As the project is customer driven and construction is to directly service customer interconnection, deferral is not feasible, and NWA will not be considered.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C096246, C096247 [redacted]	

Supplemental Information

Sanction Paper Number: None

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Project: ☐Yes ☑ No

Disadvantaged Community Impact: ☐Yes ☑No

Article 7 Project: ☐Yes ☐No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

None

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C096247	CapEx	0.00	0.00	352.75	0.00	0.00	0.00	352.75
	OpEx	0.00	0.00	41.50	0.00	0.00	0.00	41.50
	Removal	0.00	0.00	20.75	0.00	0.00	0.00	20.75
	Total	0.00	0.00	415.00	0.00	0.00	0.00	415.00

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C096246	CapEx	0.00	0.00	1830.00	0.00	0.00	0.00	1,830.00
	OpEx	0.00	0.00	24.20	0.00	0.00	0.00	24.20
	Removal	0.00	0.00	12.10	0.00	0.00	0.00	12.10
	Total	0.00	0.00	1866.30	0.00	0.00	0.00	1,866.30

Estimate Grade: 4.0

Begin Preliminary Engineering: 4/1/2025

Final Design Complete: 1/1/2026

Construction Start: 2/1/2026

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C096246, C096247 [redacted]	

In Service Date:	3/31/2027

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C095804 [redacted]	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☐Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): [redacted] **– Phase 1**

Associated Funding Numbers (if applicable): C095804, C095803

Description:

The project is supplying new Customer load with a request of ~2.6MVA for phase 1 of construction for a full build out of 7.8MVA after all three phases are constructed. For Phase 1 the customer is building three multiple occupancy buildings utilizing Electric heating and a parking garage with Electric Vehicle charging to align with the current electrification goals of New York State. The shift to electrification has increased the anticipated connected and diversified load submitted by the customer to follow the current NESC requirements. To accommodate the increased load a 23kV Sub T solution is required for this customer.

Project Justification:

This is a customer connection project where a proposed load is greater than 1MW total for all connecting properties, due to the electric heating load and EV charging load, which cannot be served from the surrounding 4.160kV overhead feeders or from the Low Voltage AC (General Network is not currently located in this area and does not have the capacity to supply this load). To provide the customer with the proposed load at the requested service voltage (208V). National Grid must extend two (2) new 23kV cables to customer property for phase 1 and an additional 23kV cable for all three phases. Customers have an accelerated timeline and expected date of power delivery for the requested load of 1.8MW. To meet customers expected in-service date National Grid must proactively engineer and design a service arrangement as well as procure long lead material items, sometimes ahead of funding approval, design completion, and resource coordination.

Project Scope:

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C095804 [redacted]	

C095804
Two (2) 750kVA, 23kV > 208V, Padmount Transformers
Two (2) 1000kVA, 23kV > 208V, Padmount Transformers
Two (2) 23kV, 4-way switchgear
C095803
Two (2) 23kV cables:
Install approximately 5,000' of new Conduit
Install approximately 5,000' of new Cable

Long Lead-Time Materials
Two (2) 750kVA, 23kV > 208V, Padmount Transformers (12-18 months, ordered)
Two (2) 1000kVA, 23kV > 208V, Padmount Transformers (12-18 months, ordered)
Two (2) 23kV, 4-way switchgear (12-18 months, Non-standard Switchgear required, ordered)

Customer Benefits:

This project will enable 2.47 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support community housing heating electrification by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By installing two (2) new 23kV cables they are supplying the customer load requirements with mandatory redundancy on the 23kV system. The installation at this point is the sole source for the Customer at [redacted] Buffalo, New York. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

Alternative 1: Supply customer with 23kV cable primary service and have customer procure their own transformers and switchgear.
Alternative 2: Have the customer build multiple vaults on property and extend multiple 23kV cables to serve them with multiple Spot Network or Radial Distribution Vaults.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As the project is customer driven and construction is to directly service customer interconnection, deferral is not feasible, and NWA will not be considered.

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C095804 [redacted]	

Supplemental Information

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Phase 1 Project: ☐Yes ☑ No

Disadvantaged Community Impact: ☑ Yes ☐ No

This project is funded by [redacted] and will be providing renovated affordable housing for disadvantaged community in the downtown Buffalo area.

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
No ☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

Insert relevant narrative here

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands) Sub T

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C095803	CapEx	0	48.80	1,990.00	0	0	0	2,038.80
	OpEx	0	0	62.00	0	0	0	62.00
	Removal	0	0	31.00	0	0	0	31.00
	Total	0	48.80	2,083.00	0	0	0	2,131.80

Total Project Cost Breakdown: ($ Thousands) Distribution

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C095804	CapEx	0	0	578.00	0	0	0	578.00
	OpEx	0	0	68.00	0	0	0	68.00
	Removal	0	0	34.00	0	0	0	34.00
	Total	0	0	680.00	0	0	0	680.00

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C095804 [redacted]	

Estimate Grade:	N/A
Begin Preliminary Engineering:	1/24
Final Design Complete:	1/25
Construction Start:	6/25
In Service Date:	3/26

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C094748 Cables 4K and 5K - [redacted]	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☐Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): Cables 4K and 5K - [redacted]

Associated Funding Numbers (if applicable): C094749, C094748

Description:

Reconstruction of pre-existing hospital at [redacted] to serve 80 apartment units and 1 house meter. The building is designed to be 100% electric with a total diversified load of 1130kW. The main service will be located on the ground floor and a transformer vault will be located in the basement.

Project Justification:

This is a customer connection project with a proposed load greater than 1MW total for all connecting properties which cannot be served from the 4.16 kV overhead feeders. Even with an exception because of how close the proposed load is to 1 MW there is no available capacity on the nearest 4.16 kV feeders as this is a heavily loaded area. To provide the customer with the proposed load at the requested service voltage (208V). National Grid must extend two (2) new 23kV cables to customer property. The customer has an accelerated timeline and expected date of power delivery for the requested load of 1.1MW. To meet customers expected in-service date National Grid must proactively engineer and design a service arrangement as well as procure long lead material items, sometimes ahead of funding approval, design completion, and resource coordination.

Project Scope:

C094748

Install new 4-way concrete duct bank to customer property, approximately 20' in distance.
Install new two (2) 23kV 1/0 CU cable (4K and 5K), approximately ~500' of cable total.

C094749

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C094748 Cables 4K and 5K - [redacted]	

Two (2) 23kV to 208V, 750kVA Transformers with one (1) 25kV, 4-way switchgear in a customer vault.

Long Lead-Time Materials
Two (2) 23kV -> 208V, 750kVA Subway Transformers (12-18 Months, Ordered)
One (1) 25kV, 4-way switchgear (12-18 Months, Ordered)

Customer Benefit:

This project will enable 1.13 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support community housing heating electrification by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By installing two (2) new 23kV cables we are supplying the customer load requirements with mandatory redundancy on the 23kV system. The installation at this point is a sole source for the Customer at [redacted] Buffalo, New York. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

Alternative 1: Extend 4.160kV Feeders with available capacity.
Alternative 2: Rebuild nearest Buffalo Indoor station to increase capacity on existing feeders in area.
Alternative 3: Provide primary service to existing power station owned by previous landowner.
Alternative 3: Install Padmount transformers and switchgear.

NWA Analysis:

Non-Wires Alternatives will be considered for any projects that may be considered within the Company's Planning Criteria screening process. Based on the current justifications, this project is not to be considered for NWA based on its project type and scope of work for a direct customer interconnection.

Supplemental Information

Sanction Paper Number:	N/A
Transferred from Cases 24-E-0322:	☐ Yes ☑No
CLCPA Phase 1 Project:	☐Yes ☑ No
Disadvantaged Community Impact: No	

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C094748 Cables 4K and 5K - [redacted]	

Article 7 Project: ☐Yes ☑ No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

N/A

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands) Sub T

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C094748	CapEx	-20.99	0.00	0.00	980.90	0.00	0.00	959.91
	OpEx	0.00	0.00	0.00	115.40	0.00	0.00	115.40
	Removal	0.00	0.00	0.00	57.70	0.00	0.00	57.70
	Total	-20.99	0.00	0.00	1154.00	0.00	0.00	1133.01

Total Project Cost Breakdown: ($ Thousands) Distribution

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C094749	CapEx	7.56	0.00	352.75	0.00	0.00	0.00	360.31
	OpEx	0.00	0.00	41.50	0.00	0.00	0.00	41.50
	Removal	0.00	0.00	20.75	0.00	0.00	0.00	20.75
	Total	7.56	0.00	415.00	0.00	0.00	0.00	422.56

Estimate Grade: N/A

Begin Preliminary Engineering: 1/24

Final Design Complete: N/A

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C094748 Cables 4K and 5K - [redacted]	

Construction Start: 4/25
In Service Date: 3/27

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C092982 Cables 10H & 12H ([redacted])	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☐Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): Cables 10H & 12H ([redacted])

Associated Funding Numbers (if applicable): C092646, C092982, C092126

Description:

A new customer is connecting three multiple occupancy buildings with an anticipated total diversified load of 1.8MW load to be served from the 23kV system. The customer buildings will be utilizing electric heating and electric vehicle charging to align with the current electrification goals of New York State. The shift to electrification has increased the anticipated connected and diversified load submitted by the customer to follow the current NESC requirements. To accommodate the increased load a 23kV Sub T solution is required for this customer.

Project Justification:

This is a customer connection project with a proposed load greater than 1MW total for all connecting properties, due to the additional electric heat and EV charging load at the premise, which cannot be served from the surrounding 4.16 kV overhead feeders. To provide the customer with the estimated/proposed load at the requested service voltage (120/208V), National Grid must extend two (2) new 23kV cables from Station 24A (10H and 12H) to customer property. The scope requires new duct/conduit installment along Delaware Ave Due to space constraints in urban setting, lack of available capacity on nearby feeders, and distance of 13.2kV feeders away from site connecting the customer via overhead solution is not a viable option requiring Sub T. Customers has an accelerated timeline and expected date of power delivery for the requested load of 1.8MW. To meet customers expected in-service date national Grid must proactively engineer and design a service arrangement

as well as procure long lead material items, sometimes ahead of funding approval, design completion, and resource coordination.

Project Scope:

C092646

-Install new 500 KCMIL CU cable (approximately 2,600') from Station 24A to the corner of Kenmore Ave and Delaware Ave through duct bank system on Kenmore Ave

-Install cable from Corner of Kenmore Ave and Delaware Ave to Customer Property (approximate 1,100' of new cable for each cable)

Install five (5) new manholes and 8-12 new conduits on Delaware Ave (approximately 1100')

Install 500 KCMIL CU from new manhole located outside of customer property to new switchgear manhole installed on property ([redacted]) (approximately 800')

Install 1/0 CU cable from first switchgear to second switchgear and transformers.

Make connections to switchgear (approximately 100' to first switchgear and approximately 500' to second switchgear)

C092982

Install three (3) new 23kV to 208V transformers (Building A: 750kVA, Building B: 1000kVA, Building C: 750kVA)

Install Two (2) 35kV switchgear

Long Lead-Time Materials:

Padmount Transformers (Two 750kVA, One 1000kVA) (12-18 Months, Ordered)

Install Two (2) 35kV Padmount switchgear (12-18 Months, Ordered)

10,000' of 25kV Compact 500 KCMIL CU cable

Customer Benefit:

This project will enable 1.83 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support community housing electric heating by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By installing two (2) new 23kV cables we are supplying the customer load requirements with mandatory redundancy on the 23kV system. The installation at this point is the sole source for [redacted] Buffalo, NY. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

Alternatives of this service arrangement include extending 13.2kV over Two (2) miles into Buffalo or reinforcing the existing 4,160kV and allowing each building to have its own service below 1MW (multiple services to a premise).

DER/NWA Analysis:

Non-Wires Alternatives will be considered for any projects that may be considered within the Company's Planning Criteria screening process. Based on the current justifications and cost of project

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C092982 Cables 10H & 12H ([redacted])	

is less than $1M, this project is not to be considered for NWA per the Company's Planning Criteria. Therefore, this is no alternative for consideration.

Supplemental Information

Sanction Paper Number: USSC-23-196

Transferred from Cases 24-E-0322: ☐ Yes ☑No

CLCPA Phase 1 Project: ☐Yes ☑ No

Disadvantaged Community: ☐Yes ☑ No

Article 7 Project: ☐Yes ☐No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
No ☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands) Distribution

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C092982	CapEx	0.00	373.92	0.00	0.00	0.00	0.00	373.92
	OpEx	0.00	43.99	0.00	0.00	0.00	0.00	43.99
	Removal	0.00	22.00	0.00	0.00	0.00	0.00	22.00
	Total	0.00	439.91	0.00	0.00	0.00	0.00	439.91

Total Project Cost Breakdown: ($ Thousands) Sub T

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C092646	CapEx	642.56	3600.00	0.00	0.00	0.00	0.00	4242.56
	OpEx	0.00	450.00	0.00	0.00	0.00	0.00	450.00
	Removal	0.00	190.00	0.00	0.00	0.00	0.00	190.00

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C092982 Cables 10H & 12H ([redacted])	

	Total	642.56	4240.00	0.00	0.00	0.00	0.00	4882.56

Estimate Grade: N/A

Begin Preliminary Engineering: 4/23

Final Design Complete: 10/23

Construction Start: 4/24

In Service Date: 12/24

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C092111 Cables 14 and 15K ([redacted])	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑ Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): Cables 14 and 15K ([redacted])

Associated Funding Numbers (if applicable): C091654

Description:

A new customer is connecting three multiple occupancy buildings with an anticipated total diversified load of 2MW load to be served from the 23kV system. The customer buildings will be utilizing electric heating and electric vehicle charging to align with the current electrification goals of New York State. The shift to electrification has increased the anticipated connected and diversified load submitted by the customer to follow the current NESC requirements. To accommodate the increased load a 23kV Sub T solution is required for this customer.

Project Justification:

This is a customer connection project with a proposed load greater than 1MW (2 MW requested) for all connecting properties, due to the additional electric heat and EV charging load at the premise, which cannot be served from the surrounding 4.16 kV overhead feeders. To provide the customer with the estimated/proposed load at the requested service voltage (120/208V), National Grid must extend two (2) new 23kV cables (14K and 15K) to customer property utilizing existing conduit on Amherst St. This was the selected option due to space constraints in urban setting, lack of available capacity on nearby feeders, and distance of 13.2kV feeders away from site connecting the customer via overhead solution is not a viable option requiring Sub T. Customers has an accelerated timeline and expected date of power delivery for the requested load of 1.8MW. To meet customers expected in-service date national Grid must proactively engineer and design a service arrangement as well as

procure long lead material items, sometimes ahead of funding approval, design completion, and resource coordination.

Project Scope:

C092111
-Install new 500 KCMIL CU cable (approximately 6,400', 3,200' feet each) on Amherst Street through existing duct bank system from Beard Ave to Main St.
- Install 1/0 CU cable from switchgear to transformers.

C091654
Install Two (2) new 23kV to 208V transformers (Building A: 1000kVA, Building B: 1000kVA)
Install One (1) 35kV switchgear

Long Lead-Time Materials:

Padmount Transformers (Two 1000kVA) (12-18 Months, Ordered)
Install One (1) 35kV Padmount switchgear (12-18 Months, Ordered)
6,400' of 25kV Compact 500 KCMIL CU cable

Customer Benefit:

This project will enable 2 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support community housing electric heating by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By installing two (2) new 23kV cables we are supplying the customer load requirements with mandatory redundancy on the 23kV system. The installation at this point is the sole source for [redacted] Buffalo, NY. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

Alternatives of this service arrangement include extending 13.2kV over Two (2) miles into Buffalo or reinforcing the existing 4,160kV and allowing each building to have its own service below 1MW (multiple services to a premise).

DER/NWA Analysis:

Non-Wires Alternatives will be considered for any projects that may be considered within the Company's Planning Criteria screening process. Based on the current justifications and cost of project is less than $1M, this project is not to be considered for NWA per the Company's Planning Criteria. Therefore, this is no alternative for consideration.

Supplemental Information

Sanction Paper Number: USSC-23-196

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C092111 Cables 14 and 15K ([redacted])	

Transferred from Cases 24-E-0322: ☐ Yes ☑No

CLCPA Phase 1 Project: ☐Yes ☑ No

Disadvantaged Community: ☐Yes ☑ No

Article 7 Project: ☐Yes ☐No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
No ☑	☐	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands) Sub T

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C092111	CapEx	1.56	1676.96	0.00	0.00	0.00	0.00	1678.52
	OpEx	0.00	2.00	0.00	0.00	0.00	0.00	2.00
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	1.56	1678.96	0.00	0.00	0.00	0.00	1680.52

Total Project Cost Breakdown: ($ Thousands) Distribution

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C091654	CapEx	0.00	24.43	0.00	0.00	0.00	0.00	24.43
	OpEx	0.00	2.00	0.00	0.00	0.00	0.00	2.00
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	0.00	26.43	0.00	0.00	0.00	0.00	26.43

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C092111 Cables 14 and 15K [redacted])	

Estimate Grade: N/A
Begin Preliminary Engineering: N/A
Final Design Complete: N/A
Construction Start: 2/24
In Service Date: 6/24

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C090952 - Cables 4K and 5K – [redacted]	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☐Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): Cables 4K and 5K – [redacted]

Associated Funding Numbers (if applicable): C092963, C090952

Description:

Customer request of ~1.8MW to be served at 208V from NG owned transformers with 23kV primary cables extended to customer site. The customer is building three multiple occupancy buildings utilizing electric heating to align with the current electrification goals of New York State. The shift to electrification has increased the anticipated connected and diversified load submitted by the customer to follow the current NESC requirements. To accommodate the increased load a 23kV Sub T solution is required for this customer.

Project Justification:

This is a customer connection project with a proposed load greater than 1MW total for all connecting properties, due to the additional electrical heating load at the premise, which cannot be served from the surrounding 4.160kV overhead feeders. To provide the customer with the proposed load at the requested service voltage (208V). National Grid must extend two (2) new 23kV cables to customer property. Customers have an accelerated timeline and expected date of power delivery for the requested load of 1.8MW. To meet customers expected in-service date National Grid must proactively engineer and design a service arrangement as well as procure long lead material items, in order to meet the service request date.

Project Scope:

C092963:
Install new 350 CU cable from [redacted] to customer service gear on property.
Install duct bank system on Balcom Street up to customer property.

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C090952 - Cables 4K and 5K – [redacted]	

Cable Length Distances:
Approximately 500' for 4K and approximately 500' for 5K which results in 1000' total.
Approximately 350' of new conduit/duct with one (1) new manhole.

C090952:

Install two (2) 1000kVA 23kV-208V Padmount transformers and install one (1) 35kV Padmount Switchgear

Long Lead-Time Materials:

Two (2) 1000kVA 23kV-208V Padmount transformers. (12-18 Months, Ordered)
One (1) 35kV Padmount Switchgear (12 Months, Ordered)

Customer Benefit:

This project will enable 1.678 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support community housing and a disadvantaged community by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By installing two (2) new 23kV cables the Company will be supplying the customer load requirements with mandatory redundancy on the 23kV system. The installation at this point is a sole source for the Customer at [redacted] Buffalo, New York. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

N/A - The proposed load is too high for 4.16kV and there is no 13.2kV within miles of the site.

DER/NWA Analysis:

Non-Wires Alternatives will be considered for any projects that may be considered within the Company's Planning Criteria screening process. Based on the current justifications, this project is not to be considered for NWA based on its project type. Therefore, this is no other alternative for consideration.

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C090952 - Cables 4K and 5K – [redacted]	

Supplemental Information

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Phase 1 Project: ☐Yes ☑ No

Disadvantaged Community: ☑Yes ☐No

Building new affordable housing complexes in disadvantaged communities.

Article 7 Project: ☐Yes ☐No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
No ☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Greenhouse Gas Emissions/CLCPA Impact:

N/A

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands) Sub T

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C092963	CapEx	16.28	0.03	169.60	0.00	0.00	0.00	185.91
	OpEx	0.00	0.00	19.96	0.00	0.00	0.00	19.96
	Removal	0.00	0.00	9.98	0.00	0.00	0.00	9.98
	Total	16.28	0.03	199.54	0.00	0.00	0.00	215.85

Total Project Cost Breakdown: ($ Thousands) Distribution

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C090952	CapEx	-15.78	0.03	138.05	0.00	0.00	0.00	122.30
	OpEx	0.00	0.00	16.24	0.00	0.00	0.00	16.24
	Removal	0.00	0.00	8.12	0.00	0.00	0.00	8.12
	Total	-15.78	0.03	162.41	0.00	0.00	0.00	146.66

nationalgrid	**Significant Sub-Transmission Capital Investment Plan Projects and Programs**	
	C090952 - Cables 4K and 5K – [redacted]	

Estimate Grade: N/A
Begin Preliminary Engineering: 3/23
Final Design Complete: 10/23
Construction Start: 3/25
In Service Date: 8/25

Project Data Sheets

Building Electrification

Customer-Driven Distribution Projects

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	Station 3012 Rebuild	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☑Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable):

C074906 - Station 3012 Sub-T

C074911 - Station 3012 D-line

C085610 - Station 3012 D-Line, Part 2

Description:

Rebuild a retired 23kV/4.16kV station to 23kV/13.12kV. This will be bringing 13.2kV into an area that has previously been 4.16kV allowing for additional capacity and resiliency. Said capacity will be crucial in supplying new commercial/ residential services with all electric heat/appliances like [redacted] that arise in this part of Buffalo.

Project Justification:

This project is needed to ensure enough system capacity is available for both forecasted and specific load requests. This project is necessary for the forecasted load in this area of Buffalo and imperative for [redacted], a [redacted] project less than a mile away from the location of this new substation that looks to interconnect with electric heating in its housing units. To ensure capacity for [redacted] during contingency, as well as the remaining customers present in the surrounding area, the construction of this station is a crucial factor in aiding projected load growth and contingency violations.

Project Scope:

C074909 – Upgrade the existing station to 23/13.2kV with two transformers and the associated breakers and buses.
C074906 – Rebuild the existing 23kV taps with upgraded conductor and duct work
C074911 – Part 1 of rebuilding existing feeders from 4.16kV to 13.2kV
C085610 – Part 2 of rebuilding existing feeders from 4.16kV to 13.2kV

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	Station 3012 Rebuild	

Long Lead-Time Materials:

Two (2) station transformers (7.5/ 9.375 MVA 23 kV/ 13.2 kV) - (~3 years) – Ordered

Two (2) station switchgear - (100 weeks) – Ordered

Identified Adjacent Projects Required for Completion to Allow Electrification:

C094790 – Perry Homes Service Extension

Customer Benefit:

This project will enable 5 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating This will look to support community housing and a disadvantaged community by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. This project will not only support loading for incremental, short-term loading requirements, but the solution developed will look to meet forecasted loading assumptions to allow less barrier to entry for future interconnections and electrification. This will also be bringing 13.2kV into an area that has previously been 4.16kV allowing for additional capacity and resiliency.

Alternatives:

Alternative 1: Rebuild the existing station to 4.16kV. This option would not support the customer load growth in the area.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. This project's suitability is being considered and analysis is still ongoing.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	Station 3012 Rebuild	

Supplemental Information

Sanction Paper Number: USSC-17-001 v2

Transferred from Cases 24-E-0322: ☑Yes ☐No

CLCPA Project: ☐Yes ☑No

Disadvantaged Community: ☑Yes ☐No

Article 7 Project: ☐Yes ☑No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

System Capacity upgrades directly increase the hosting capacity of the local EPS (electric power system) by allowing for a higher reverse power flow and more renewable generation load to interconnect, enabling PV and ESS to interconnect at higher volumes with a lower marginal interconnection cost.

Funding and Schedule Information

C074909 - Station 3012 Substation

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C074909	CapEx	7579.11	3637.83	9877.21	3000.00	0.00	0.00	24094.15
	OpEx	0.00	1.04	0.00	0.00	0.00	0.00	1.04
	Removal	0.00	9.53	0.00	0.00	0.00	0.00	9.53
	Total	7579.11	3648.40	9877.21	3000.00	0.00	0.00	24104.72

C085610 - Station 3012 D-Line, Part 2

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C085610	CapEx	1618.91	3561.40	1298.25	0.00	0.00	0.00	6478.56
	OpEx	0.00	26.73	0.00	0.00	0.00	0.00	26.73
	Removal	0.00	108.86	0.00	0.00	0.00	0.00	108.86
	Total	1618.91	3696.99	1298.25	0.00	0.00	0.00	6614.15

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	Station 3012 Rebuild	

Estimate Grade: 4.4A Final Eng
Begin Preliminary Engineering: 11/2020
Final Design Complete: 07/2024
Construction Start: 10/2024
In Service Date: 07/2026

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C094790 [redacted] Service Extension	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

sProgram Name (if applicable): N/A

Associated Funding Numbers (if applicable): C094790 – [redacted] Service Extension

Description:

This project is to build the 13.2 kV extension to the customer, [redacted], who are upgrading their service from less than 1,000 kVA to approximately 4,000 kVA. The existing dilapidated buildings at this location are getting demolished, and an entirely new all-electric housing and commercial complex is to be built in their place. Each new apartment/commercial building will be equipped with electric heating and appliances. This requires a full-service upgrade and according to ESB 751, an interconnection at 23kV. The customer is insisting on multiple 120/208V services, so National Grid is providing a 13.2kV/120V option.

Project Justification:

This project is required to serve the proposed customer's load at their requirements (120/208V service to approximately 27 buildings on their property). Customer has an accelerated timeline and expected date of power delivery for the requested load of ~3.7 MW. To meet the customer's expected in-service date, National Grid must proactively engineer and design a service arrangement, procure material items, sometimes ahead of funding approval, design completion, and resource coordination.

Project Scope:

Project Scope involves 10 pad mounted transformers and their associated equipment, one (1) ~2,250 feet extension from the Ohio/ Childs St. F215451, one (1) 3,360 ft. extension from the current Larkvinville F273852 (future 3012 feeder), ~1,500 feet of OH through the customer's property for one feeder, and ~1,300 feet of OH through the customer's property for another feeder.

Long Lead-Time Materials:

15 kV Padmount Switchgear

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C094790 [redacted] Service Extension	

Identified Adjacent Projects Required for Completion to Allow Electrification:
Station 3012 Substation (C074909), Station 3012 Sub-T (C074906), Station 3012 D-line (C074911), Station 3012 D-Line, Part 2 (C085610)
Customer Benefits:
This project will enable 3.7 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support community housing heating electrification within a disadvantaged community by enabling new capacity and electrification. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. By running two (2) 13.2 kV feeders through the [redacted] complex, we are supplying the customer load requirements and allowing for redundancy through field ties in the event of a contingency on either feeder. There are also cost savings present with this 13.2 kV option as opposed to the customer taking a 23 kV primary service. Without this project being completed, the customer will not be able to service their load request.
Alternatives:
Alternative 1: Extend 23 kV to the customer site and enforce the customer to take a primary service. Alternative 2: Extend 115 kV further into the City of Buffalo.
DER/NWA Analysis:
The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As the project is customer driven and the construction is to service direct or update the current service, deferral is not feasible for this location and NWA is not to be considered.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C094790 [redacted] Service Extension	

Supplemental Information

Sanction Paper Number:

Transferred from Cases 24-E-0322: ☐ Yes ☑ No

CLCPA Project: ☐Yes ☑No

Disadvantaged Community: ☑Yes ☐No

Article 7 Project: ☐Yes ☑No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☐	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C094790	CapEx	-168.38	1665.71	1300.00	0.00	0.00	0.00	2797.33
	OpEx	0.00	8.80	0.00	0.00	0.00	0.00	8.80
	Removal	0.00	0.07	0.00	0.07	0.00	0.00	0.14
	Total	-168.38	1674.58	1300.00	0.07	0.00	0.00	2806.27

Estimate Grade: 4.4A Final Eng

Begin Preliminary Engineering: 01/19/2024

Final Design Complete: 06/28/2024

Construction Start: 10/30/2024

In Service Date: 07/08/2025

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093668 – Hancock 2 DLine Upgrade	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable): C093670, C093668

Description:

Upgrade Hancock #2 Electric Service Station 138 for [redacted] expansion for additional system capacity.

Project Justification:

[redacted] is expanding their load, due to system limits, an upgrade for increased system capacity is required. This is due to electrification of load at the campus and electric vehicle charging. This will double the load at the [redacted] site by 2035. For the loss of one of the feeders to the [redacted] site, the current load is at 100% of the feeders' rating. Additional load demand and electrification of vehicle fleets on campus will exceed current system capabilities. This work is necessary to serve the additional [redacted] campus load.

Project Scope:

Distribution Line (C093668):
Install a second 34.5/13.2kV 5MVA pad in parallel with the existing pad. Also replace the existing regulators with 333kVA regulators.

Sub-Transmission (C093670):
Install 34.5kV fuses, riser, and cable to new pad.

Long Lead-Time Materials:
34.5/13.2kV 5MVA pad mount transformer.

Customer Benefit:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093668 – Hancock 2 DLine Upgrade	

This project will enable 5 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heat and transportation. This will look to support [redacted] loading by enabling new capacity and electrification. In addition, the urgency of these projects will look reduce time for interconnection by prioritizing construction. This project will provide additional system capacity to support electrification efforts and load demand at the [redacted]. Without this project being completed, the customer will not be able to service their load request.
Alternatives:
N/A
DER/NWA Analysis:
The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practically be addressed with an NWA. This is a system capacity driven project and is able to be considered for NWA, and analysis is currently ongoing.

Supplemental Information

Sanction Paper Number: N/A
Transferred from Cases 24-E-0322: ☑ Yes ☐No
CLCPA Project: ☐Yes ☑ No
Disadvantaged Community: ☐Yes ☑ No
Article 7 Project: ☐Yes ☑ No
Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093668 – Hancock 2 DLine Upgrade	

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C093668	CapEx	0.00	0.00	400.00	1800.00	100.00	0.00	2300.00
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Removal	0.00	0.00	0.00	200.00	0.00	0.00	200.00
	Total	0.00	0.00	400.00	2000.00	100.00	0.00	2500.00

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C093670	CapEx	0.00	0.00	150.00	150.00	0.00	0.00	300.00
	OpEx	0.00	0.00	0.00	10.00	0.00	0.00	10.00
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	0.00	0.00	150.00	160.00	0.00	0.00	310.00

Estimate Grade:

Begin Preliminary Engineering: 04/01/2025

Final Design Complete: 05/27/2025

Construction Start: 04/03/2026

In Service Date: 11/18/2026

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093669 – Sand 2 DLine Upgrade	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable): C093671, C093669

Description:

Upgrade Sand Road #2 Electric Service Station 141 for [redacted] expansion for additional system capacity required for electrification.

Project Justification:

[redacted] is expanding their load, due to system limits, an upgrade for increased system capacity is required. This is due to electrification of load at the campus and electric vehicle charging. This will double the load at the [redacted] site by 2035. For the loss of one of the feeders to the [redacted] site, the current load is at 100% of the feeders' rating. Additional load demand and electrification of vehicle fleets on campus will exceed current system capabilities. This work is necessary to serve the additional [redacted] campus load.

Project Scope:

Distribution Line (C093669):
Install a second 34.5/13.2kV 5MVA pad in parallel with the existing pad. Also replace the existing regulators with 333kVA regulator

Sub-Transmission Line (C093671):
Install 34.5kV fuses, riser, and cable to new pad.

Long Lead-Time Materials:
34.5/13.2kV 5MVA pad mount transformer.

Customer Benefit:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093669 – Sand 2 DLine Upgrade	

This project will enable 5 MW of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heat and transportation. This will look to support [redacted] loading by enabling new capacity and electrification. In addition, the urgency of these projects will look reduce time for interconnection by prioritizing construction. This project will provide additional system capacity to support electrification efforts and load demand at [redacted]. Without this project being completed, the customer will not be able to service their load request.

Alternatives:

N/A

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practically be addressed with an NWA. This is a system capacity driven project and is able to be considered for NWA, and analysis is currently ongoing.

Supplemental Information

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☑ Yes ☐No

CLCPA Project: ☐Yes ☑ No

Disadvantaged Community: ☐Yes ☑ No

Article 7 Project: ☐Yes ☑ No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093669 – Sand 2 DLine Upgrade	

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C093669	CapEx	0.00	0.00	400.00	1800.00	100.00	0.00	2300.00
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Removal	0.00	0.00	0.00	200.00	0.00	0.00	200.00
	Total	0.00	0.00	400.00	2000.00	100.00	0.00	2500.00

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C093671	CapEx	0.00	0.00	150.00	150.00	0.00	0.00	300.00
	OpEx	0.00	0.00	0.00	10.00	0.00	0.00	10.00
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	0.00	0.00	150.00	160.00	0.00	0.00	310.00

Estimate Grade: N/A

Begin Preliminary Engineering: 04/01/2025

Final Design Complete: 05/27/2025

Construction Start: 04/03/2026

In Service Date: 11/18/2026

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093808 - Central Utica Boutique Sub, D-Line	

Project/ Program Information

Investment Type: ☑Project ☐ Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☑	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable): C093809, C093808

Description:

Project to address capacity and asset condition concerns at Pleasant/Conklin substations. Install new 10MVA 46/13.2kV boutique substation in proximity of existing Pleasant or Conklin substations and convert ~10miles of d-line to 13.2kV with ties to adjacent 13.2kV feeders. Forecasted load with recent customer requests for electric heat multiple occupancy buildings have caused thermal violations.

Project Justification:

There are asset condition, age of equipment, and system capacity concerns due to the forecasted load exceeding 95% of summer normal capacity in 2030 for Pleasant Substation. This new boutique station will retire aged assets while increasing system capacity. The load of the Pleasant and Conkling stations has increased more expeditiously than predicted in the forecast due to recent multiple occupancy building requests inclusive of electric heat. The new load requests coupled with the forecast have driven the project to be needed earlier.

Project Scope:

Distribution Line Scope (C093808):
Install new 46/13.2kV 10MVA pad mounted transformer. Install getaway conduit and 1000Cu cables to 4 position switchgear, 3 feeder risers, 3 reclosers and (3) 3-333kVA regulators

Sub-T Scope (C093809):
New 46kV tap to load break switch fuses riser pole cable and conduit to new boutique station transformer pad.

Long Lead-Time Materials:
46/13.2kV 10MVA pad mounted transformer

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093808 - Central Utica Boutique Sub, D-Line	

Customer Benefit:
This project will enable 10 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support community housing by enabling new capacity and electrification. In addition, the urgency of these projects will look reduce time for interconnection by prioritizing construction. Increase in system capacity and reliability with new station assets and an increase in customer safety with the 13.2kV conversion.
Alternatives:
N/A
DER/NWA Analysis:
The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practically be addressed with an NWA. This is a multi-value distribution project, which comprises of both an asset condition and system capacity requirements. Due to asset condition concerns, deferral is not feasible, and NWA is not to be considered for this project.

Supplemental Information

Sanction Paper Number:
Transferred from Cases 24-E-0322: ☑ Yes ☐No
CLCPA Project: ☐Yes ☑ No
Disadvantaged Community: ☑ Yes ☐ No
MVD projects have the potential to positively impact Disadvantaged Communities by improving electric infrastructure and increasing hosting capacity, enabling the increased deployment of renewable distributed energy resources. In delivering such projects, the Company will take steps to mitigate potential adverse impacts on customers and members of the public, including avoiding disproportionately impacting Disadvantaged Communities.
Article 7 Project: ☐Yes ☑ No
Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:
MVD projects replace infrastructure where needed, enabling clean energy generation by increasing hosting capacity and directly supporting CLCPA emissions reduction targets.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C093808 - Central Utica Boutique Sub, D-Line	

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C093808	CapEx	0.00	0.00	137.00	525.00	2092.00	134.00	2888.00
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Removal	0.00	0.00	0.00	0.00	0.00	263.00	263.00
	Total	0.00	0.00	137.00	525.00	2092.00	397.00	3151.00

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C093809	CapEx	0.00	0.00	300.00	0.00	0.00	0.00	300.00
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	0.00	0.00	300.00	0.00	0.00	0.00	300.00

Estimate Grade: $300,000

Begin Preliminary Engineering: 07/2025

Final Design Complete: 07/2025

Construction Start: 04/2026

In Service Date: 09/2028

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C09XXX – [redacted]	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☑Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☑	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): 0

Associated Funding Numbers (if applicable): N/A

Description:

[redacted] is re-developing all of their properties. In total there will 11 phases with approximately 1400 units and a total projected load of 15-20MW (all electric loads). The current [redacted] load is ~2MW. Phases 1 & 2 are planned for 2026 completion. No schedule has been released for the remaining 9 phases, however the [redacted] and the [redacted] were awarded a $50 million grant under the Federal Choice Neighborhoods Implementation Grant.

Project Justification:

The 5 feeders that are in the area have a total combined capacity of ~10MVA. This is 5-10MW short of what will be required to serve the electrified load. The housing authorities plan for low income housing with electrified heat has an aggressive schedule with large demand. This project will be required to support the Customers' full load demand.

Project Scope:

Install ~5,000’ of conduit from Temple substation to the center of the redevelopment. Bring out two (2) new feeders from spare positions at Temple (~10,000’ of 1000 CU).

Long Lead-Time Materials:

1000CU cable

Customer Benefit:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C09XXX – [redacted]	

This project will enable 20 MVA of additional capacity, which will offer a reduction of C02 production, compared to fossil-fuel based heating. This will look to support community housing by enabling new capacity and electrification. In addition, the urgency of these projects will look reduce time for interconnection by prioritizing construction. This will benefit the Customer through the ability to serve this re-developed all electric load.
Alternatives:
Build a new substation on [redacted] property.
DER/NWA Analysis:
Non-Wires Alternatives will be considered for any projects that may be considered within the Company's Planning Criteria screening process. Based on the current justifications, this project is not to be considered for NWA based on its project type. Therefore, this is no other alternative for consideration.

Supplemental Information

Sanction Paper Number:
Transferred from Cases 24-E-0322: ☐ Yes ☑ No
CLCPA Project: ☐Yes ☑ No
Disadvantaged Community: ☑ Yes ☐No
Article 7 Project: ☐Yes ☑ No
Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C015754	CapEx	0.00	100.00	340.00	3220.00	6840.00	2000.00	12500.00

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C09XXX – [redacted]	

	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	0.00	100.00	340.00	3220.00	6840.00	2000.00	12500.00

Estimate Grade:

Begin Preliminary Engineering: 11/2024

Final Design Complete: 4/2025

Construction Start: 4/2026

In Service Date: 12/2028

Project Data Sheets

Building Electrification

Forecast-Driven Distribution Projects

nationalgrid	**ENGINEERING DOCUMENT**	
	Project Development Sheet	
	C080474 **Seventh Ave Transformer**	

Seventh Ave 13.2kV Transformer

Investment Type: ☑Project ☐ Program

Type of Spend: ☑ Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): D/SUB T_ Load Relief

Associated Funding Numbers (if applicable):

C080475: Seventh Ave South Feeder Conversion

C080476: Seventh Ave North Feeder Conversion

Description:

This suite of projects aims to replace the existing 5/6.25 MVA, 34.5 kV / 4.16 kV power transformer within the Seventh Avenue substation in the City of Troy with a 12/16/20 MVA, 34.5 kV / 13.2 kV power transformer. The replacement of this transformer will also upgrade the distribution voltage in the area from 4.16 kV to 13.2 kV. This upgrade will allow for the conversion of the existing distribution out of the Seventh Avenue substation to 13.2 kV, ultimately increasing the available capacity in the area for electrification loads where historically there was none.

Project Justification:

nationalgrid	**ENGINEERING DOCUMENT**	
	Project Development Sheet	
	C080474 **Seventh Ave Transformer**	

The City of Troy is powered by antiquated infrastructure, with every substation serving Customers operating at 4.16 kV. The City of Troy has also seen significant load growth; growth of which the 4.16 kV cannot handle when compared to the Company's current standard of 13.2 kV. Adding to the significant load growth, thus requiring significant upgrades, is an increased installation of EV chargers, rising residential loading, new commercial businesses, and the electrification of city buses.

As the City of Troy experiences rapid growth, upgrading Seventh Avenue substation to 13.2 kV is essential to support the increasing demand for electrification, including electric heat and electric vehicle (EV) chargers. With more residents and businesses transitioning to electric technologies, Seventh Avenue substation, and its associated distribution, risks becoming overloaded, leading to inefficiencies, higher maintenance costs, and a higher risk for power outages.

Several of these buildings are becoming apartment complexes which come with significant EV charging, some as high as 1.5 MW; almost five (5) times the loading of existing apartment complexes. Additionally, as the City of Troy looks to reduce its gas footprint, the utilization of electric heating is becoming more and more apparent. In addition, electrification of the nearby city bus depot will bring electrical loads beyond anything the City of Troy has seen.

The inability to serve new customers from Seventh Avenue greatly impacts the customer by substantially increasing their interconnection time. Any new customer will need to wait for a conversion from 4.16 kV to 13.2 kV prior to interconnection; situation dependent, this can take years to complete.

nationalgrid	**ENGINEERING DOCUMENT**	
	Project Development Sheet	
	C080474 **Seventh Ave Transformer**	

Project Scope:

This suite of projects will replace the existing 5/6.25 MVA, 34.5 kV / 4.16 kV substation power transformer with a new 12/16/20 MVA, 34.5 kV / 13.2 kV substation power transformer. This new transformer will convert the distribution voltage from 4.16 kV to 13.2 kV resulting in the need to convert the existing four (4) feeders out of the Seventh Avenue substation from 4.16 kV to 13.2 kV as well to enable more capacity in the area.

Long Lead-Time Materials:

12/16/20 MVA, 34.5 kV / 13.2 kV transformer

Customer Benefit:

By investing in these upgrades, customers can foster sustainable development, meet the evolving needs of its growing population, and enhance economic growth. A reliable and efficient grid attracts businesses and residents focused on sustainability, contributing to economic development by positioning the city as a forward-thinking, green-friendly community. This project will also increase reliability, ensuring uninterrupted power supply as more residents and businesses rely on electrified systems like electric heat and EV chargers. This project will also offer a right-sizing approach by installing a new transformer with a nameplate rating of 20 MVA to handle increased load growth. This increased capacity will allow further electrification and reduction of CO_2 output by 2050. This additional capacity will allow National Grid to meet the continued load growth seen in the City of Troy and will benefit both existing and new customers. As existing residents and businesses increasingly transition to electric technologies, National Grid will be able to easily accommodate, with minimal to no delays, as is typical at 13.2 kV.

Alternatives:

N/A

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practically be addressed with an NWA. As this project has System Capacity as the main driver, NWA will be considered, and analysis is currently ongoing.

nationalgrid	ENGINEERING DOCUMENT	
	Project Development Sheet	
	C080474 Seventh Ave Transformer	

Supplemental Information

Sanction Paper Number: N/A

Transferred from Cases 24-E-0322: ☑Yes ☐No

CLCPA Project: ☐Yes ☑ No

Disadvantaged Community: ☑ Yes ☐No

Article 7 Project: ☐Yes ☑No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	Total
C080474	CapEx	0.00	0.00	175.00	465.87	400.00	1597.74	1064.52	47.00	3750.13
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Removal	0.00	0.00	0.00	0.00	0.00	117.17	35.48	0.00	152.65
	Total	0.00	0.00	175.00	465.87	400.00	1714.91	1100.00	47.00	3902.78

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	FY30	Total
C080475	CapEx	0.00	0.00	224.40	349.10	765.80	761.65	25.94	2126.89
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Removal	0.00	0.00	0.00	0.00	12.50	12.58	0.00	25.08
	Total	0.00	0.00	224.40	349.10	778.30	774.23	25.94	2151.97

nationalgrid	**ENGINEERING DOCUMENT**	
	Project Development Sheet	
	C080474 **Seventh Ave Transformer**	

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	FY30	Total
C080476	CapEx	0.00	0.00	265.87	290.87	1548.03	1571.39	19.94	3696.10
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Removal	0.00	0.00	0.00	0.00	25.50	0.00	0.00	25.50
	Total	0.00	0.00	265.87	290.87	1573.53	1571.39	19.94	3721.60

Estimate Grade: Conceptual

Begin Preliminary Engineering: April 2025

Final Design Complete: May 2028

Construction Start: September 2028

In Service Date: February 2030

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C083916 Elsmere Station Rebuild	

Investment Type: ☑Project ☐ Program

Type of Spend: ☑ Distribution ☑ Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☑	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): D/SUBT_Load Relief

Associated Funding Numbers (if applicable):

C083916 - Elsmere Substation Rebuild

C083917 - Delmar 34.5kV Reconfiguration

C083920 - Elsmere - Feeder Getaways

C083926 - Delmar Feeders Rebuild and Convert

Description:

This suite of projects aims to address two substations in the Albany area. The Delmar substation has significant asset condition concerns with most equipment having a rating of 5 out of 5 meaning near term replacement is required. Additionally, a new 34.5kV/13.2kV Elsmere substation rebuild and increase of the existing transformer to a 20MVA unit will be connected to Delmar-Elsmere tap. The majority of the 4.8kV in Delmar and Bethlehem will be replaced with 13.2kV under the distribution line project to match the bank replacement at Elsmere. This 20MVA bank will allow for the retirement of both Juniper and Quail Hollow Substations managing the risk of Juniper and Quail Hollow stations by consolidation to one new Elsmere Station.

Project Justification:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C083916 Elsmere Station Rebuild	

The primary driver for the proposed Elsmere substation is the asset condition of the Delmar Transformer at ACR of 5 on 1-5 scale. In addition, load relief is a concern for both normal and contingency operation and project solution is to be built to service load forecasted over the lifetime of the new asset to be installed and constructed. Stations such as Voorheesville still see load concerns with Vista Tech Park continuing to expand and this station would be at 98% loaded in 2035. This project will add the capacity necessary to provide service to the Delmar/Bethlehem area with reliability metrics exceeding planning criteria limits in 2035 at New Krumkill, Voorheesville and Delmar Stations putting customer load at risk. Therefore, Delmar and Elsmere Stations will be rebuilt and right sized to meet this additional load capacity caused by forecasting of specific building electrifications and EV loading concerns, such as those mentioned from Vista Tech Park. These rebuilds will support in both normal and contingency scenarios for the wider Delmar and Bethlehem areas.

Project Scope:

The 20MVA bank at Elsmere will be the 13.2kV secondary bank replacement for Delmar TB1 and TB2 Elsmere TB1 4.16kV banks. The Elsmere 20MVA bank will also pick up Juniper 13.2kV load. The 34.5kV Delmar-Bethlehem #6 and Delmar-Patroon #3 Sub-T will be demolished past the 34.5kV tap to

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C083916 Elsmere Station Rebuild	

Elsmere. This Sub-T is along a NY State managed bike path. There are associated 34.5kV line capacitors outside of Delmar Station that will be moved to new locations both outside and inside of Elsmere for capacitive support on the 34.5kV system. Two Elsmere getaway will be upsized but be located where the existing underground getaways are currently located. One getaway will be new for a third feeder and will allow full utilization of the new 20MVA bank at Elsmere. The demolition of the Delmar and Juniper stations will follow the increase in size and voltage of the new Elsmere station bank. The Quail Hollow station will be retired by load transfer to Bethlehem distribution feeders. These Bethlehem distribution feeders were built to pick up Elsmere and Delmar feeders on platform mounted ratios during construction and conversion of Delmar and Elsmere feeders. Upon completion of the Delmar and Elsmere conversion work, the Bethlehem feeders will pick up Quail Hollow distribution and allow for retirement of Quail Hollow Substation.

Long Lead-Time Materials:

20MVA transformer bank
Substation metal clad switchgear

Customer Benefit:

The increase in 20MVA bank at Elsmere with 34.5kV breaker, bus, disconnects, and 34.5kV cap banks is an increase from the previous station bank size. The conversion from 4.8kV to 13.2kV for the Delmar, Elsmere, Quail Hollow feeders allow greater than 10MW load and generation to be added to the distribution feeders. With the addition of a 20MVA transformer at Elsmere Station 7.19MW of capacity is added. With the conversion to 13.2kV the remaining three feeders have 15MW of increased hosting capacity for DER and loading. The Sub-T reconfiguration adds full redundancy at Elsmere for Elsmere to be fed from either the 4 or 6 lines for increased the capacity by 30MW from both directions of the 34.5kV. All increases in additional capacity are to be used for the projected load increases in this area including the EV and all electric URD load including phase 4 and phase 5 of The Spinney at Van Dyke all electric URD being built in future years. The build out of additional distribution feeders to facilitate the use of additional capacity at the associated station rebuild that eliminates the forecasted normal overload on the transformers at the station and provide additional capacity for customer load. Additional reliability and resiliency benefits customers by creating more flexible feeder ties resulting in quicker restoration capabilities.

Alternatives:

The Alternative to this suite of projects is the construction of a new greenfield substation in the town of Bethlehem. This proposed substation was denied by the town due to concerns with proximity of the station the school. As such, this alternative is not a viable option.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need

can practically be addressed with an NWA. This is a multi-value distribution project that addresses asset condition and system capacity needs. Components of this project pertaining to System Capacity will be considered for NWA, and analysis is currently ongoing.

Supplemental Information

Sanction Paper Number: **USSC-23-265**

Transferred from Cases 24-E-0322: ☑ Yes ☐No

CLCPA Project: ☐Yes ☑ No

Disadvantaged Community: ☐Yes ☑ No

Article 7 Project: ☐Yes ☑ No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C083916	CapEx	1501.29	2103.13	6555.23	2741.90	120.00	0.00	13021.55
	OpEx	0.00	15.12	0.00	0.00	0.00	0.00	15.12
	Removal	0.00	127.74	0.00	0.00	0.00	0.00	127.74
	Total	1501.29	2245.99	6555.23	2741.90	120.00	0.00	13164.41

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C083917	CapEx	10.38	21.55	411.39	369.29	25.98	12.42	851.01

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C083916 Elsmere Station Rebuild	

	OpEx	0.00	0.00	0.00	8.31	9.94	0.00	18.25
	Removal	0.00	0.00	0.00	51.93	462.21	0.00	514.14
	Total	10.38	21.55	411.39	429.53	498.13	12.42	1383.40

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C083920	CapEx	24.31	19.17	492.76	729.31	19.94	0.00	1285.49
	OpEx	0.00	0.00	0.00	1.33	0.00	0.00	1.33
	Removal	0.00	0.00	0.00	9.99	0.00	0.00	9.99
	Total	24.31	19.17	492.76	740.63	19.94	0.00	1296.81

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	FY30	Total
C083926	CapEx	181.78	48.49	1433.37	2321.09	2716.85	1452.09	189.38	8343.05
	OpEx	0.00	4.68	170.45	277.42	316.78	163.28	21.34	953.95
	Removal	0.00	9.37	340.89	554.83	633.56	326.56	42.69	1907.90
	Total	181.78	62.54	1944.71	3153.34	3667.19	1941.93	253.41	11204.90

Estimate Grade: Project

Begin Preliminary Engineering: 08/2023

Final Design Complete: 02/2026

Construction Start: 11/2024

In Service Date: 5/2028

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C086902 Cobleskill Substation 4.8 to 13.2kV Conversion	

Project/ Program Information

Investment Type: ☑Project ☐ Program

Type of Spend: ☑ Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☑	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☐	☐	

Program Name (if applicable): MVD_AC_System_Capacity

Associated Funding Numbers (if applicable):

C086902: Cobleskill Station 4.8 to 13.2 kV Conversion

C091671: Cobleskill D-Line 4.8 to 13.2 kV Conversion

Description:

These projects serve to install one (1) 69 kV circuit switcher, one (1) low side bank breaker, and three (3) 15kV feeder breakers at Cobleskill substation and convert distribution in the town of Cobleskill from 4.8 to 13.2 kV. This conversion is needed to energize the already installed 69/13.2kV 10/12.5 MVA station transformer and to increase feeder tie capability between Cobleskill and Grand Street. Upon conversion to 13.2kV, the feeders will be reconfigured to balance loads and to help alleviate immediate loading concerns at Grand Street substation, maximizing use of the additional capacity available at Cobleskill substation after the new transformer is energized. After the conversion is complete, the 4.8 kV equipment remaining at Cobleskill shall be retired.

Project Justification:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C086902 Cobleskill Substation 4.8 to 13.2kV Conversion	

These projects will alleviate forecasted overloading concerns caused by heat pump and EV electrification on the Cobleskill substation transformer and feeders by increasing system capacity through the conversion to 13.2 kV and by upsizing the substation transformer. Since the failure of Cobleskill TB2 in July 2019, the Cobleskill 14 feeder has been tied to Cobleskill 12, thus leaving all Cobleskill feeders fed from TB1 and significantly increasing the load on Cobleskill 12. TB2 was replaced under damage failure with a new 69/13.2kV distribution transformer with sufficient capacity but cannot be energized before the Cobleskill feeders are also converted to 13.2kV.
Along with addressing loading concerns, many existing asset condition concerns at Cobleskill substation will be resolved through the retirement of the dated 4.8 kV station equipment. Completing the conversion will also allow for multiple feeder ties to the Grand St 51, improving system reliability on both feeders in contingency scenarios by removing Cobleskill from being a 4.8 kV island.

Cobleskill TB1 is loaded past 80% of the rated amount today and is expected to overload by 2030 with the forecasted load reaching 8.3 MW, with heat pump and electric vehicle usage making up 1.8 MW. The Cobleskill 12 feeder getaway is also nearly overloaded today as a result of the Cobleskill 14 being tied to Cobleskill 12 after the TB2 damage failure in 2019. Therefore, the conversion is required to begin as soon as possible to alleviate immediate loading concerns, create 13.2kV feeder ties that will reduce the customer outages associated with conversion work, and proactively prepare for forecasted electrification demand.

Project Scope:

The substation scope is to install a 69 kV circuit switcher and a 2000 Amp 15 kV low side station bank breaker, relocate two (2) 15kV feeder breakers, and purchase one (1) new 1,200 Amp 15 kV feeder breaker. This project will alleviate all asset condition concerns within the Cobleskill station yard and retire all remaining 4.8 kV equipment.

The distribution line scope is to convert the Cobleskill feeders to 13.2kV. The Cobleskill 11 and 13 feeders will be converted in their entirety to 13.2kV and identified as Cobleskill 53 and 52 following the conversion. The Cobleskill 12 feeder will be identified as Cobleskill 51 and converted up to the planned ratio transformer installations on Elm Street, North Grand Street, Lamont District Road, Barnerville Road, and Grovenors Corners Road. All existing feeder getaways will be retired, and two (2) new underground getaways and one (1) overhead getaway will be installed. Sectionalizing devices will be installed on all feeders to maximize use of feeder ties. Upon conversion to 13.2kV, the feeders will be reconfigured such that distribution on Barnerville Road will be transferred to the future Cobleskill 53, and Grand St 51 on State Route 7 will be tied to the future Cobleskill 52.

Long Lead-Time Materials:

69kV circuit switcher, 15kV circuit breaker, 15kV disconnect switches, voltage transformers, insulators, low power voltage cables.

Customer Benefit:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C086902 Cobleskill Substation 4.8 to 13.2kV Conversion	

The Cobleskill area is a combination of residential and commercial load with a forecasted 8.3 MW increase in electric vehicle and heat pump usage making up 25% of total forecasted load by 2035 and an additional forecasted increase of 10 MW from 2035 to 2050, ultimately making up 43% of the total forecasted load at Cobleskill substation. Upgrading the substation and feeders to 13.2kV and increasing the transformer size provides additional capacity to support this anticipated increased demand. At this time, the Company is already generally seeing increased adoption of electric school bus fleets, supporting the expectation that there will other commercial customers that will be looking to go through similar electrification efforts within the next few years.

This project will also significantly improve reliability on the Cobleskill and Grand St feeders through the removal of Cobleskill being a 4.8 kV island. Additionally, system capacity will increase on Cobleskill facilitating all forecasted load growth and EV school bus fleet requests in the future.

Alternatives:

Due to the 10/12.5 MVA 69/13.2 kV station bank already being installed, no alternatives exist for energizing the bank as high side fusing is not appropriate protection for the transformer.

The proposed solution of rebuilding Cobleskill at 13.2kV is the most appropriate solution to resolve loading, asset condition, and reliability concerns in the area in a timely and effective manner, as it utilizes substation equipment that has already been purchased and requires minimal new build or line extensions.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practically be addressed with an NWA. Multi-Value Distribution projects are driven by Asset Condition needs while also proactively addressing system capacity / hosting capacity constraints in support of state and federal clean energy goals, therefore this project does not meet the NWA suitability criteria.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C086902 Cobleskill Substation 4.8 to 13.2kV Conversion	

Supplemental Information

Sanction Paper Number: USSC-24-090 FY25PD

Transferred from Cases 24-E-0322: ☑ Yes ☐No

CLCPA Project: ☐Yes ☑ No

Disadvantaged Community: ☐Yes ☑ No

Article 7 Project: ☐Yes ☑ No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C086902	CapEx	121.01	209.60	766.76	1246.17	526.53	0.00	2870.07
	OpEx	0.00	0.00	0.00	0.00	0.51	0.00	0.51
	Removal	0.00	0.00	0.00	0.00	24.77	0.00	24.77
	Total	121.01	209.60	766.76	1246.17	551.81	0.00	2895.35

Project Number	Spend	Prior Year	FY25	FY26	FY27	FY28	FY29	Total
C091671	CapEx	16.09	191.83	1071.56	875.14	505.81	0.00	2660.43
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	16.09	191.83	1071.56	875.14	505.81	0.00	2660.43

Estimate Grade: Conceptual

Begin Preliminary Engineering: February 2024

Final Design Complete: August 2026

Construction Start: October 2026

In Service Date: December 2027

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C086902 Cobleskill Substation 4.8 to 13.2kV Conversion	

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C046536 Delameter Substation Rebuild	

Project/ Program Information

Investment Type: ☑Project Program

Type of Spend: ☑ Distribution ☐Sub-Transmission ☐Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☑	☐	

Program Name (if applicable): N/A

Associated Funding Numbers (if applicable):

C047877 - Delameter F9356-express & rebuild

C047885 - Delameter new F9355 - express.

Description:

Delameter station is a 115/13.2kV single 15/20/25MVA transformer station that currently is loaded at 76% of its normal rating and is set to be overloaded during contingency loading scenarios. This project proposes installing a second bank with a 24/32/40 MVA transformer and installation of an 8-position metal clad. The existing transformer will remain but upgraded soon under C095706. The dual bank station will allow more capacity for the growing need of electrification related to EV charging and electric heat pumps. In addition, this project is to be planned to support additional load expected under forecasting scenarios, beyond the specific customer loads during normal and contingency scenarios. The Delameter station rebuild will also provide capacity to school districts in the area requiring large loads for Electric School Bus charging.

Project Justification:

The existing station transformer is currently under asset condition concerns. The station has only one tie to an adjacent 13.2kV station. Delameter Station TB1 services over 9,000 customers with some near the shores of Lake Erie. Due to a growing need for EV Charging related to school districts and NYSTA, the project looks to be right sized to support forecasted loading beyond the specific customer requests and asset condition concerns. This need will only grow with the demand of residential electric heat and EV charging soon. Lakeshore Central Schools requires 814kW load for EV School Bus chargers.

Project Scope:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C046536 Delameter Substation Rebuild	

C046536:
Install a new 20/26/40 MVA TB2 transformer. Install an 8-position metal clad. The new bank 2 switchgear size will include 2 bank breakers, 1 bus tie breaker, 8 feeder breakers. This would be preparing the station for the TB1 upgrade. Move the circuit switchers from the transmission line side of the 115 bus to the bank side of the bus (provides additional flexibility and matches up to how most 2 bank 115/13kv stations are arranged). Eliminate the old gear and feed the existing bank 1 into the new gear.

C047877:
This project describes the scope associated with the distribution line work for the new 9356 feeder out of Delameter station TB2 for the express circuit underbuild and the rebuild of Versialles Rd.
C047885:
This project describes the work associated with the new feeder 9355 out of Delameter Station TB2.

Long Lead-Time Materials:
The 24/32/40 MVA transformer for TB2 has been ordered; delivery planned for July 2026.
Estimated lead time for other major material is about 3 years.

Customer Benefit:

With the added new TB2 @ 40MVA; there will be some load taken from TB1 feeders, F5351 and F5352. That alleviated load would be about ~2 MVA. Thus, the increased capacity of the new 40 MVA Transformer would be about ~38 MVA of added capacity. The additional capacity will offer a reduction of C02, compared to fossil-fuel based transportation. This will look to support customer charging and additional loading expected from residential electric heating. In addition, the urgency of these projects will look to reduce time for interconnection by prioritizing construction. This project will not only support loading for incremental, short-term loading requirements, but the solution developed will look to meet forecasted loading assumptions to allow less barrier to entry for future interconnections and electrification. The project will allow for additional capacity for both load and generation customers while improving reliability and resiliency with the addition of a second transformer.

Alternatives:

Upgrade the current transformer to allow for future load growth to increase system capacity and reliability within the area.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practically be addressed with an NWA. NWA analysis for this project is still ongoing and will be evaluated further upon increased development of project scope.

Supplemental Information

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C046536 Delameter Substation Rebuild	

Sanction Paper Number:	USSC-13-271
Transferred from Cases 24-E-0322:	☑ Yes ☐ No
CLCPA Project:	☐Yes ☑ No
Disadvantaged Community:	☑Yes ☐No

Distribution reliability projects improve the system's ability to avoid an outage and reduce outage times when they occur, including in Disadvantaged Communities. In delivering such projects, the Company will take steps to mitigate potential adverse impacts on customers and members of the public, including avoiding disproportionately impacting Disadvantaged Communities.

Article 7 Project: ☐Yes ☑ No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Reliability upgrades improve the system's ability to avoid a contingency (hardening, flood mitigation), reduce the exposure to contingency (fusing), and/or improve post contingency system capacity (MWh violation upgrades). These benefits create opportunities for DER (such as PV and ESS) to export power, thereby improving their financial viability. Further, improved reliability mitigates the need for load customers to operate fossil-based backup generation.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C046536 Delameter Substation Rebuild	

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

C046536 - Delameter Substation Rebuild

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	FY30	Total
C046536	CapEx	1186.27	1028.99	548.80	7372.96	7639.29	1060.64	0	18836.95
	OpEx	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00
	Removal	0.00	0.00	0.00	106.59	0.00	0.00	0	106.59
	Total	1186.27	1028.99	548.80	7479.55	7639.29	1060.64	0	18943.54

C047877 - Delameter F9356-express& rebuild

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	FY30	Total
C047877	CapEx	105.88	0.00	19.92	79.60	2160.00	431.12	35.75	2832.27
	OpEx	0.00	0.00	0.00	0.00	23.38	0.00	0.00	23.38
	Removal	0.00	0.00	0.00	0.00	27.89	0.00	0.00	27.89
	Total	105.88	0.00	19.92	79.60	2211.27	431.12	35.75	2883.54

C047885 - Delameter new F9355 - express.

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	FY30	Total
C047885	CapEx	5.94	0.00	10.89	6.98	21.88	1730.58	2.50	1778.77
	OpEx	0.00	0.00	0.00	0.00	99.96	0.00	0.00	99.96
	Removal	0.00	0.03	0.00	0.00	299.89	0.00	0.00	299.92
	Total	5.94	0.03	10.89	6.98	421.73	1730.58	2.50	2178.65

Estimate Grade: 4.3 Development & Sanction

Begin Preliminary Engineering: 09/2024

Final Design Complete: 05/2026

Construction Start: 07/2026

In Service Date: 08/2028

Project Data Sheets

Building Electrification

Forecast-Driven Transmission Projects

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C081799 Pack-Gardenville T-Line Reconfig	

Project/ Program Information

Investment Type: ☑Project Program

Type of Spend: ☐Distribution ☐Sub-Transmission ☑Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☑	☐	☐	

Program Name (if applicable): T_TO Led System Studies

Associated Funding Numbers (if applicable):

C079506 - Packard-Gardenville Station Upgrades
C085043 - Ludwig-Gardenville 704 – 34.5kV Relocation

Description:

Reconfigure 115kV lines between Niagara, Packard, Gardenville and Erie St to improve performance of the 115kV system. Relocate the 34.5kV Ludwig-Gardenville 704 to a new alignment in the corridor.

Project Justification:

Overloads on the 115kV transmission system under various scenarios even with the NextEra 345kV Dysinger-Stolle Line and Phase Angle Regulating (PAR) Transformer in service. These issues persist and are made worse by the New York State Clean Energy goals and increased electrification of load, per NYISO forecasting models used to design and size this solution. The overloads seen on the 115kV transmission system have been present since the installation of the NextEra 345kV Dysinger-Stolle Line and PAR. Not only are these overloads already existing, but the addition of the electrification load in the Western NY area will increase the intensity of the overloads.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C081799 Pack-Gardenville T-Line Reconfig	

Project Scope:

Project C081799: Reconfigure Line 180 Niagara-Gardenville via Grand Island to take the former Line 181 path from the Packard area to Gardenville. Install a series reactor and bypass breaker in Packard-Gardenville 182 at Packard Station. Reactors will be installed on Line 181 and reconfigured to Packard-Gardenville. Approximately 1 mile of 115kV double circuit will be built for lines 181/182, bus approximately 27 miles of the existing 181/105 & 181/92 to create the new Line 180, reconnect lines in the vicinity of Packard Station and Urban Switch Structure to make (new) Line 180 thru from Niagara to Gardenville and Line 922 connect Gardenville to Erie St.

Project C079506: At Packard, Change CT taps to give 3200A SSTE Rating, change relay settings, replace jumpers with 2-1272 kcmil Aluminum.

Project C085043: Relocate 34.5kV Ludwig-Gardenville 704 to a new alignment in the existing corridor to provide space for the new 115kV Packard-Gardenville Lines 181/182 alignment and the bussed Niagara-Gardenville 180. Reuse the 115kV tower positions occupied by the 34.5kV circuit at 115kV once again.

Long Lead-Time Materials:

Estimated lead time for materials within 3 years

Identified Adjacent Projects Required for Completion to Allow Electrification:

C079506 - Packard-Gardenville Station Upgrades
C085043 - Ludwig-Gardenville 704 – 34.5kV Relocation

Customer Benefits:

The reconfiguration planned in this project will upgrade the transmission system thermal ratings to support more capacity on the Western NY transmission system. Thus, eliminating a bottleneck for the increase of electrification of load and increase in renewable generation added to the system. These projects maintain transmission system reliability in the Frontier Region by eliminating circuit overloads and providing capacity for load growth.

Alternatives:

Reconductor/rebuild from Packard to Long Road including an approximately 2-mile river crossing for approximately $30M.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As this project has System Capacity as the main driver, NWA will be considered, and analysis is currently ongoing.

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C081799 Pack-Gardenville T-Line Reconfig	

Supplemental Information

Sanction Paper Number: USSC-23-208 FY24

Transferred from Cases 24-E-0322: ☑ Yes ☐No

CLCPA Project: ☐Yes ☑No

Disadvantaged Community: ☑Yes ☐No

Article 7 Project: ☐Yes ☑No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	Renewable Energy	Environmental Sustainability	Green Buildings
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

System Capacity upgrades directly increase the hosting capacity of the local EPS (electric power system) by allowing for a higher reverse power flow and more renewable generation load to interconnect, enabling PV and ESS to interconnect at higher volumes with a lower marginal interconnection cost.

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Pack-Gardenville T-Line Reconfig - Tran Line

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C081799	CapEx	1910.61	250.96	738.95	426.98	426.98	9549.00	13303.48
	OpEx	0.00	0.00	8.00	8.00	8.00	176.00	200.00
	Removal	0.00	0.00	28.00	28.00	28.00	616.00	700.00
	Total	1910.61	250.96	774.95	462.98	462.98	10341.00	14203.48

Packard-Gardenville Station Upgrades - Tran Sub

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C079506	CapEx	0.00	159.74	397.98	198.88	198.44	1391.12	2346.16
	OpEx	0.00	0.00	4.00	2.00	2.00	14.22	22.22
	Removal	0.00	0.00	20.00	10.00	10.00	71.10	111.10

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C081799 Pack-Gardenville T-Line Reconfig	

	Total	0.00	159.74	421.98	210.88	210.44	1476.44	2479.48

Ludwig-Gardenville 704 34.5kV reloc - Sub-T Line

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C085043	CapEx	0.00	0.00	38.00	224.00	1390.00	2394.00	4046.00
	OpEx	0.00	0.00	0.00	54.00	12.00	4.00	70.00
	Removal	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	0.00	0.00	38.00	278.00	1402.00	2398.00	4116.00

Estimate Grade: Planning

Begin Preliminary Engineering: 05/2024

Final Design Complete: 12/2026

Construction Start: 09/2027

In Service Date: 08/2028

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C088133 State Campus- Menands #15 UG Replacement	

Project/ Program Information

Investment Type: ☑Project ☐Program

Type of Spend: ☐Distribution ☐Sub-Transmission ☑Transmission

Spending Rationale:

Asset Condition	Communications/ Control Systems	Customer Requests/ Public Requirements	Damage/ Failure
☐	☐	☐	☐
Multi-Value Distribution	Multi-Value Transmission	Non-Infrastructure	DER Electric System Access
☐	☐	☐	☐
System Capacity & Performance	Reliability	Resiliency	
☐	☑	☐	

Program Name (if applicable): T_Performance

Associated Funding Numbers (if applicable):

Description:

Replace 0.23-mile parallel underground sections of the State Campus- Woodlawn #12 circuit and the State Campus- Menands - Patroon #15 circuit with larger conductor and new terminations.

Project Justification:

These two 115 kV circuits (#12 and #15) are two of the three circuits that together feed several distribution customers and the SUNY Albany / SUNY Nanotech Complex. This project will Improve reliability for these customers by replacing the terminations at each end of the cables (1990's G&W terminations prone to early failure) and provide both circuits with required capacity increases as these cables are the limiting element on #15 and will soon be the limiting element on #12. Without this upgrade, the #15 circuit becomes overloaded in contingency studies, reflecting load growth due to active projects to expand two of the distribution load stations supplied by these circuits. Though the #12 circuit does not yet show overloading in studies, it is prudent to replace the short length of conductor while mobilized to reconductor the parallel #15 circuit, especially given that the #12 circuit terminations must be replaced (outage required), and given further anticipated area load growth due to EV charging, electrification of heat, and Campus expansion, all of which will likely drive the #12 circuit to contingency overload situations if the conductor is not upgraded. This project also allows for the expansion of the McKnowville and New Krumkill substation expansions to support load growth in the area and address capacity issues at other Albany area distribution substations.

Project Scope:

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C088133 State Campus- Menands #15 UG Replacement	

Replace approximately 0.23 miles of underground cable on State Campus- Woodlawn #12 and State Campus- Menands - Patroon #15 circuits (0.46 total circuit miles) with 5000 MCM Cu underground cable. Install new duct bank and manhole system due to the required size of cable. Install new terminations at both ends of the lines.

Long Lead-Time Materials:

Estimated lead time for materials within 3 years

Identified Adjacent Projects Required for Completion to Allow Electrification:

N/A

Customer Benefit:

This project enhances reliability by avoiding unplanned long-term outages by replacing failure-prone cable terminations, and avoids load-shedding outages by increasing the capacity of transmission lines that will otherwise experience overloading. In addition this project provides the provides the necessary capacity for McKnowsville and New Krumkill substations to expand to address asset condition issues at other substations.

Alternatives:

These circuits are critical to serving the City of Albany area and there is not a viable overhead route across Central Ave in Albany. Any other means of adding capacity and reliability to the stations fed by these circuits would be far more costly and environmentally and socially disruptive. Therefore, no other alternatives are being considered.

DER/NWA Analysis:

The Company's Non-Wires Alternative (NWA) Suitability Criteria considers the driver/spending rationale, timeframe, and potential costs to address a system need in determining whether that need can practicably be addressed with an NWA. As this project has reliability as the main driver, NWA will be considered, and analysis is currently ongoing.

Supplemental Information

Sanction Paper Number:	N/A
Transferred from Cases 24-E-0322:	☑ Yes ☐No
CLCPA Project:	☐Yes ☑No
Disadvantaged Community:	☑Yes ☐No

nationalgrid	**ENGINEERING DOCUMENT** **Project Development Sheet**	
	C088133 State Campus- Menands #15 UG Replacement	

Article 7 Project: ☐Yes ☑No

Green Financing Eligibility:

Not Green	Pending Committee Review	Clean Transportation	Energy Efficiency
☑	☐	☐	☐
Pollution Prevention & Control	**Renewable Energy**	**Environmental Sustainability**	**Green Buildings**
☐	☐	☐	☐

Reduce Greenhouse Gas Emissions:

Reliability upgrades improve the system's ability to avoid a contingency (hardening, flood mitigation), reduce the exposure to contingency (fusing), and/or improve post contingency system capacity (MWh violation upgrades). These benefits create opportunities for DER (such as PV and ESS) to export power, thereby improving their financial viability. Further, improved reliability mitigates the need for load customers to operate fossil-based backup generation.

Funding and Schedule Information

Total Project Cost Breakdown: ($ Thousands)

Project Number	Spend	Prior Years	FY25	FY26	FY27	FY28	FY29	Total
C088133	CapEx	0.00	0.00	1500.00	7500.00	7500.00	1000.00	17500.00
	OpEx	0.00	0.00	250.00	1125.00	1125.00	0.00	2500.00
	Removal	0.00	0.00	125.00	565.00	565.00	0.00	1255.00
	Total	0.00	0.00	1875.00	9190.00	9190.00	1000.00	21255.00

Estimate Grade: 4.1 Need Identification

Begin Preliminary Engineering: 05/2025

Final Design Complete: 04/2026

Construction Start: 05/2026

In Service Date: 10/2027