

**STATE OF NEW YORK
PUBLIC SERVICE COMMISSION**

Case 09-E-0310 - In the Matter of the American Recovery and Reinvestment Act
of 2009 – Utility Filings for New York Economic Stimulus

**PETITION OF CONSOLIDATED EDISON COMPANY OF NEW YORK, INC. AND
ORANGE AND ROCKLAND UTILITIES, INC. FOR APPROVAL OF AND
SUPPLEMENTARY FUNDING FOR SMART GRID PROJECTS**

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Dated: April 17, 2009

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Attachment 1 Con Edison and Orange and Rockland Smart Grid Projects

Attachment 2 Supplemental Plan of Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc. for AMI Pilot Projects, filed April 14, 2009 in Case 09-M-0074

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I. INTRODUCTION

The American Recovery and Reinvestment Act of 2009 (the “Recovery Act”) was signed into law by President Obama on February 17, 2009. It is an unprecedented effort to create and retain millions of jobs, while addressing fundamental energy issues that our country must confront in the 21st Century as we move toward a clean energy economy. Among the energy-related areas addressed by the Recovery Act are Electricity Delivery and Energy Reliability (“EDER”) projects. Under the rubric of EDER, an appropriation has been made for Smart Grid projects. As described in the Notice of Intent for the Smart Grid Investment Grant Program (issued by the U.S. Department of Energy (the “DOE”) on April 16, 2009) (the “Smart Grid NOI”), the purpose of EDER Smart Grid funding is to “stimulate the rapid deployment and integration of advanced digital technology ... to modernize the nation’s electric delivery network for enhanced operational intelligence and connectivity.” Smart Grid projects are eligible for funding of no more than one-half of eligible costs. Recovery Act, §405(2). Therefore, funding for the remaining costs must be sought elsewhere.

Consolidated Edison Company of New York, Inc. (“Con Edison”) and Orange and Rockland Utilities, Inc. (“O&R”) (collectively, the “Companies”) plan to request federal funding

for a number of energy-related projects, including projects related to developing the Smart Grid, that will position the Companies at the forefront of transforming the energy industry to meet the Recovery Act's goals.¹ The Companies estimate that the total cost of these projects is between \$318 and \$328 million, and the portion not funded by Recovery Act funds or any other funds, and therefore requiring ratepayer support, is estimated to be between \$149 and \$154 million. The Companies estimate that between 258 and 296 jobs will be created. The Companies request that the Public Service Commission (the "Commission") approve these programs and ratepayer funding for these remaining costs.

The Recovery Act funds are intended for projects for which grants will "have a significant effect in encouraging and facilitating the development of a smart grid." Recovery Act, §405(8). In the Companies' service territories, these funds will make possible projects that prepare the Companies' energy infrastructure for the future, both by deploying new technologies on a larger scale than would otherwise be possible and by accelerating the commencement of work, permitting it to be completed sooner than would have been possible absent the Recovery Act funds. These projects will result in incremental job creation and provide benefits to our customers.

In a letter dated April 3, 2009, Michael Corso, Director of Industry and Government Relations for the New York State Department of Public Service, requested the Companies to "file their plans with the Secretary of the Commission as soon as practicable due to the added advantage applicants may have by securing non-federal funding sources." Mr. Corso's letter went on to say, "This filing should include a list of all projects under consideration that require funding by ratepayers." This filing provides details related primarily to Smart Grid projects, in

¹ Proposals may be made by the Companies directly or together with other parties. In any case, project cost estimates in this document represent the Companies' expected share of project costs.

recognition that the Recovery Act appropriated funds for the Smart Grid Investment Matching Grant Program enacted under the Energy Independence and Security Act of 2007 (the “2007 Energy Act”), Title XIII, §1306, which requires that grantees have a source of funds for the balance of the costs of any project for which a grant is awarded. Recovery Act, §405(2). This filing sets forth projects that are anticipated to be submitted for competitive grants in the “Smart Grid” category, and as such the Companies request recovery of all remaining project costs from their customers.

It is not clear at this time if all or only a portion of the EDER funding will be granted for the Smart Grid category, or if separate funding will be made available for projects in other areas, with different requirements and the potential for full funding. According to the Recovery Act, other areas indicated for EDER funding include “activities to modernize the electric grid, to include demand responsive equipment, enhance security and reliability of the energy infrastructure, energy storage research, development, demonstration and deployment, and facilitate recovery from disruptions in the energy supply.”

The Companies are also considering seeking funding under the Recovery Act for projects related to renewable energy, increasing energy efficiency, accelerating the adoption of electric vehicles, and investments in natural gas infrastructure that would improve electric system reliability. Funds could be available under the EDER program or other programs authorized by the Recovery Act. Summary descriptions of these projects are included in this filing for informational purposes. As these other projects could be eligible for full funding under the Recovery Act, Commission approval of these other projects is not requested at this time.² If the

² In the case of Con Edison’s proposed solar energy pilot project, a filing was made on February 27, 2009 in Matter 09-00273.

DOE or other agencies define the funding criteria to limit the extent of grants for these projects, the Companies may request ratepayer funding for the balance of project costs.

II. THE COMPANIES' RECOVERY ACT SMART GRID PROPOSALS

Congress has appropriated \$4.5 billion for EDER activities to modernize the electric grid, including the demonstration and deployment of Smart Grid programs authorized under Title XIII of the 2007 Energy Act. As modified by the Recovery Act, the 2007 Energy Act provides that qualifying Smart Grid proposals can be funded for up to 50 percent of eligible costs.

The Companies' Smart Grid initiative reflects the unique characteristics of the New York metropolitan region's underground and overhead systems and lays the foundation for deployment of the Smart Grid. The Companies' Smart Grid proposals will seek funding for a comprehensive portfolio of projects that will further advance or accelerate Smart Grid functionalities beyond what is currently contemplated by the Companies. In Attachment 1, the Companies have classified projects as "new projects" or "advancement/expansion of ongoing projects." In general, all new projects are being proposed as pilots and will be deployed on a limited scale within specific areas of Con Edison's service territory.³ The existing projects that are being expanded or advanced are being implemented across Con Edison's entire service territory. Upon successful completion of the pilot projects, the Companies may propose to the Commission to expand the adoption of the technology on a wider basis. For the majority of new projects that are being proposed as pilots, the goal is to quantify the anticipated benefits at the end of the testing period. For existing projects that are being expanded or advanced, the Companies will quantify the benefits with DOE on an ongoing basis.

³ The exception is the Advanced Metering Infrastructure pilot project to be conducted in the service territory of Orange and Rockland.

The Companies’ portfolio of Smart Grid projects includes advanced metering infrastructure (“AMI”) projects, distribution automation projects, a superconducting transmission demonstration, grid simulation and optimization technology projects, an initiative to enhance the integration of energy storage and distributed generation, a project to demonstrate systems interoperability, and a number of projects that enable emerging customer technologies. Table 1 lists the projects being considered and is followed by a summary description for each project. For those projects that are selected for funding under the Recovery Act, the Companies propose a methodology for recovering the portion of project costs that is not funded by the Recovery Act. The cost recovery methodology is set forth after the project summaries. Attachment 1 to this filing contains project-specific details, including a project milestone schedule, detailed cost estimates, estimated numbers of jobs created, and a statement showing how each project meets anticipated federal and state criteria for Smart Grid projects, as well as a table listing the projects in order of priority.⁴

Table 1. Summary of Stimulus Projects That Would Require Ratepayer Support

Project Description	Purpose, Rationale or Justification	Priority Scale: 1 (High) to 5 (Low)	Estimated Jobs Created	Estimated Total Costs (Millions)	Estimated Ratepayer Support (Millions)
Grid Simulation and Optimization					
Secondary Visualization - development and operation of distributed secondary network load flow models	Improves secondary modeling and load flows to better target grid reinforcement in the networks, minimizing secondary cable failures during peak loading conditions and network outages due to secondary events in the summer	2	8 - 10	\$8.0	\$4.0
Model Validation - near real-time load profiles for customer locations validates model load flows from secondary models, provided by installation of new remote devices at strategic customer locations.	Improves the accuracy of the calculated coincident demand for peak summer days.	4	3 - 5	\$6.0	\$3.0

⁴ Job creation estimates in some instances were based on a detailed scope of work analysis and standard productivity factors for employees and contractor resources, and in other instances were developed based on the same assumptions as those used by the City of New York which relies on the New York City Bureau of Economic Analysis, RIMS II Multipliers for New York City, 2006. When job creation estimates are based on detailed scope of work analysis, the jobs are referred to in this document as “direct jobs.”

Project Description	Purpose, Rationale or Justification	Priority Scale: 1 (High) to 5 (Low)	Estimated Jobs Created	Estimated Total Costs (Millions)	Estimated Ratepayer Support (Millions)
Distribution Simulator - help Control Center Operators develop, maintain, and sharpen their situational awareness skills.	State of the art training tool for the operators for system contingency planning will help to improve emergency response.	3	3 – 5	\$5.0	\$2.5
AMI					
AMI Pilot Projects – Evaluate in actual field conditions technologies from different vendors of AMI equipment and communications and/or home area network providers. Demand Response and Energy Efficiency programs in the pilot will be used to evaluate the responses of mass market customers to price-sensitive rates and their acceptance of AMI technologies.	The AMI project will enhance communication between the utility and its customers	1	4 – 6	\$40.0-\$50.0	\$20.0-\$25.0
Distribution Automation					
Distribution System Switching (Underground Sectionalizing Switches) Install primary underground sectionalizing switches on targeted network feeders, replacing old motor operated three phase SF6(sulfur hexafluoride) gas insulated switches.	Create a smart distribution grid by enabling rapid isolation of faulted segments of primary feeders and re-energizing the non-faulted portion of the feeder.	1	14 - 16	\$40.0	\$20.0
Distribution System Switching (Overhead Sectionalizing Switches) - Install a combination of automatic and manual sectionalizing overhead switches, to improve the reliability of the Company's overhead distribution systems	Advances distribution automation and enhance system reliability by creating a more adaptive, integrated/flexible, interactive and optimized grid.	1	9 - 11	\$26.0	\$13.0
Intelligent Underground Automatic Loop - demonstration of an underground automatic loop design in a large distribution network using remotely controlled and automated switches to reduce the risk of a large network outage and improve reliability.	Reduces the size of a large network and thereby reduces risk of major network outage, also improving the reliability of the grid.	4	18 - 20	\$64.0	\$32.0
Remote Monitoring System (RMS) - Install RMS transmitters on network transformer vault locations throughout all service territories to allow operators and engineers to dynamically monitor transformer tank pressure, oil temperature and the oil level.	Enhances reliability of the Remote Monitoring System and enables rapid operator response to changes in system conditions.	1	16 - 18	\$48.0	\$24.0
High Tension Monitoring- Upgrade existing meters associated with High Tension feeders on the system, with an RF communication module.	Enables improved system planning thereby improving the reliability and operation of the distribution grid. Supports remote metering of HT customers and critical load data during contingency situations.	1	1 - 2	\$2.0	\$1.0
PMU Technology Deployment					
Phasors in the Bulk Power System - Deployment of a significant number of Phasors within a multiple service area, offering precise measurements of the electricity grid.	Improve ability to assess condition of the bulk power system on a real-time basis.	1	1	\$5.0	\$2.5

Project Description	Purpose, Rationale or Justification	Priority Scale: 1 (High) to 5 (Low)	Estimated Jobs Created	Estimated Total Costs (Millions)	Estimated Ratepayer Support (Millions)
Distributed Generation					
Network Protector Automation –smart communication between the network protectors and distributed generation such that the NWP would not operate when sensing backfeed from exporting customer owned DG.	Allows Con Edison to accommodate large deployment of Solar Distributed Generation into our networks	2	1- 2	\$3.0	\$1.5
Systems Interoperability					
Command and Control – in partnership with Boeing, Columbia University and The Prosser Group, design and deploy intelligent network centric command and control system-of-systems (C2SOS) in conjunction with demand management, distributed generation and energy efficiency projects.	Real-time situational awareness and transparency via an Integrated System Model of the electric transmission grid enables targeted management and intervention to resolve issues as they arise. Accommodates effective, plug-and-play compatibility amongst new, green technologies that have the potential to disrupt grid function.	1	90 - 100	\$20.0	\$10.0
Energy Storage					
Grid Support – Facilitate the integration of renewable resources by developing storage capabilities. Demonstration of customer on-site energy storage and other distributed energy resources (DER).	Demonstrates the capability of Con Ed to control and dispatch disparate customer energy storage and other DER assets to the grid for load leveling / peak shaving	1	8 - 10	\$2.0	\$1.0
Enabling Customer Technologies					
Home Area Networks (HAN) - Identifies customer acceptance of HAN technologies as well as their response to electric pricing signals, energy usage reports and incentives to reduce energy.	Two-way communication between the AMI meter and appliances/ thermostats allows utility to give customer real-time price signals and usage reports.	1	12 - 14	\$3.0	\$1.5
Direct Load Control and Demand Response Monitoring – expands an existing program for load control to room air conditioning units and enhances demand response monitoring capabilities.	Test the ability to manage electric demand in the residential market by allowing the utility to control room air conditioners, especially during peak load conditions or system emergencies, and improve quality and reliability of demand response programs through the monitoring enhancement.	1	–44-48	\$6.0	\$3.0
Superconductor Technology					
Hydra - Secure Super Grids – jointly with the US Department of Homeland Security and American Superconductor, enhance the security of the nation’s critical infrastructure using fault current limiting superconducting electric transmission materials.	Connect neighboring substation facilities in densely populated areas allowing for asset sharing, more reliable electric distribution and enhanced power supply capabilities in areas of critical infrastructure.	1	26 - 28	\$40.0	\$10.0
Grand Total			258-296	\$318.0 - \$328.0	\$149.0 - \$154.0

A. Project Summaries

i. Grid Simulation and Optimization

Con Edison proposes to accelerate the implementation of a secondary visualization modeling project to enable grid simulation and optimization. These new system models are being developed to enhance information regarding energy flows between substation and customers to improve operational performance and contingency planning. Con Edison is embarking on a program to install micro-transmitters at strategic customer service points to verify the load flow calculations from the models. As part of this project, Con Edison also plans to create a new state of the art distribution simulator to enable enhanced training for control center operators.

The estimated cost of the grid simulation and optimization projects is \$19 million; it is expected to result in the creation of 14 to 20 direct jobs in the Con Edison service territory. Con Edison estimates that \$9.5 million must be recovered from ratepayers. Additional project details are available in Attachment 1 “Con Edison and O&R Smart Grid Projects,” Secondary Visualization, Model Validation and Distribution Simulator.

ii. The AMI Pilot Projects

The Companies filed with the Commission on April 14, 2009 (“April 14 filing”), in Case 09-M-0074, a plan for AMI pilot projects to be conducted in four areas in the Con Edison and O&R service territories. In two areas, the AMI pilot project will endeavor to rely on a communications infrastructure being established for a Smart Grid demonstration. In the other areas, the Companies will seek to develop a robust communications infrastructure that takes into account the topographies of the Companies’ service territories, meter locations and meter density and that would be usable for Smart Grid functions in the future. The Companies will test the ability of this communications infrastructure to collect data from meters located on upper floors

of high-rise apartment buildings, in single-family homes, and installed below grade and the use of secure protocols over cellular, fiber optic, microwave and other communications media. The AMI pilot will also test the system's ability to provide secure and reliable system wide communication for outage management and distribution automation. When fully integrated, the additional data available through AMI will provide the Companies' engineers and operators with vital information facilitating their ability to monitor adverse and unstable conditions, enable distribution grid optimization and increase operational flexibility in the grid. The plan also includes the testing of in-home devices, home area networks and time-sensitive rates in connection with energy efficiency and demand response ("DR") programs within the group of customers receiving AMI meters.

The estimated cost of the AMI pilot projects is in the range of \$40 million to \$50 million. The AMI pilot is expected to result in the creation of four to six jobs. The Companies estimate that \$20 million to \$25 million must be recovered from ratepayers. Additional details are available in the Companies' April 14 filing.

iii. Distribution Automation

The Companies' Distribution Automation project for the Smart Grid strategy enables central supervision of distribution assets with secure, area-wide solutions. The Distribution Automation project is comprised of multiple inter-related efforts which use advanced digital technology and additional system functionality to add Smart Grid capabilities to the distribution system. The combined estimated cost of the Distribution Automation projects is \$180 million; it is expected to result in the creation of between 58 and 67 direct jobs in the Con Edison service territory. Con Edison estimates that \$90 million must be recovered from ratepayers. Details on each of the components of this project are available in Attachment 1, Distribution System

Switching (Underground), Distribution System Switching (Overhead), Intelligent Underground Automatic Loop, Remote Monitoring System and High Tension Monitoring.

1. Distribution System Switching

In distribution system switching, Con Edison is proposing to install automated sectionalizing switches with Supervisory Control and Data Acquisition (“SCADA”) control that will enable the distribution system to be re-configured as required by emergency conditions and to provide additional operational flexibility. These switches will improve overall service reliability.

The estimated cost of installing these underground and overhead sectionalizing switches is \$66 million (\$40 million for underground switches and \$26 million for overhead switches); it is expected to result in the creation of between 23 and 27 direct jobs. Con Edison estimates that \$33 million must be recovered from ratepayers. Additional project details are available in Attachment 1.

2. Intelligent Underground Automatic Loop Distribution System

Con Edison is proposing to design, test and install an underground automatic loop distribution system to improve the reliability and reduce the risk of large network outages by installing additional SCADA control and intelligence. This design will increase operational flexibility, and provide additional connectivity to existing feeders supplying radial and network load.

The estimated cost of installing this system is \$64 million; it is expected to result in the creation of between 18 and 20 jobs. Con Edison estimates that \$32 million must be recovered from ratepayers. Additional project details are available in Attachment 1.

3. Remote Monitoring System

The Companies recognize the importance of real time monitoring of grid metrics such as loading and voltage. Con Edison has one of the United States' largest underground remote monitoring systems (RMS) installed on all its distribution network transformers. Con Edison is upgrading its network transformer RMS technology by installing new third-generation transmitters, which are more reliable and permit the simultaneous installation of new pressure, temperature and oil sensors. In addition to increasing the remote monitoring capabilities, these sensors will provide additional pressure, temperature and oil data to enable condition-based monitoring and safe operation of transformers.

The estimated cost of accelerating the RMS technology upgrades is \$48 million; it is expected to result in the creation or preservation of between 16 and 18 direct jobs. Con Edison estimates that \$24 million must be recovered from ratepayers. Additional project details are available in Attachment 1.

4. High Tension Remote Monitoring

Con Edison is proposing to accelerate the installation of remote monitoring equipment at its high tension customer locations (for customers supplied at higher voltages from the primary distribution system). This project will provide Con Edison with previously unknown information regarding the load and power quality at these customers' service points. The data gathered from these devices will be used for system planning purposes as well as enabling real time system monitoring.

The estimated cost of installing the remote monitoring equipment is \$2 million; it is expected to result in the creation of one or two direct jobs. Con Edison estimates that \$1

million must be recovered from ratepayers. Additional project details are available in Attachment 1.

iv. Phasors in the Bulk Power System

The Company proposes to install additional phasors in the bulk power system within a service area region to enable phase angle monitoring. This will benefit the Company as well other utilities and enhance reliability of the grid. Phasors enhance system recovery efforts, and the DOE, now under its North American Synchro-Phasor Initiative, is encouraging the deployment and networking of high resolution synchro-phasors to assess response and performance under various grid events and transients. The benefit will be the ability to make effective use of the information for alerts of developing conditions in adjacent service areas. This project will implement increased use of phasors to improve the performance of Energy Management System state estimators in the first phase and develop and deploy multiple operator decision making tools in the second phase.

The phasor project would be executed jointly with LIPA, NYPA, the NYISO and PJM to coordinate a collective effort utilizing synchro-phasor technology for implementation and applications and would result in increased phasor penetration at each utility and the ability to connect to each utility's state estimator to improve resolution and performance of individual state estimators.

The Companies estimate that the phasor project will have a total cost of \$5 million and create one direct job. Con Edison estimates that \$2.5 million must be recovered from ratepayers. Additional project details are available in Attachment 1.

v. Distributed Generation – Network Protector Automation

In order to enhance opportunities for and benefits from distributed generation, Con Edison proposes to install equipment to enhance its capabilities in remote operation and control

of transformer network protectors to accommodate the potential reverse power flow in the grid due to distributed generation.

The estimated cost of installing these network protectors is \$3 million; it is expected to result in the creation of one or two direct jobs. Con Edison estimates that \$1.5 million must be recovered from ratepayers. Additional project details are available in Attachment 1.

vi. Systems Interoperability – Command and Control

Con Edison is proposing a project to demonstrate the capability of technology to allow the Company to dispatch distributed energy resources (such as customer on-site energy storage) and demand resources to support the distribution system. Regarding green energy, the Company has undertaken the C2 (Command Control Systems 2) project with other utilities which will facilitate the seamless integration and dispatching of renewable and distributed resources.

Con Edison is participating in this project as a member of a consortium of utilities. The estimated cost of the C2 project for Con Edison is \$20 million; it is projected to result in the creation of between 90 and 100 jobs. Con Edison estimates that \$10 million must be recovered from ratepayers. Project details contain confidential commercial and critical infrastructure information and are, therefore, not included in Attachment 1 but filed with the Records Access Officer.

vii. Energy Storage – Grid Support

Ease of integrating energy storage devices linked to photovoltaic cells and other intermittent resource technologies is a key capability offered by the Smart Grid. Con Edison proposes a pilot program to use a battery storage system in conjunction with photovoltaic cells to optimize the capabilities for customer energy demand and control.

The estimated cost of this demonstration project is \$2 million; it is projected to result in the creation of between 8 and 10 jobs. Con Edison estimates that \$1 million must be recovered

from ratepayers. Additional project details are available in Attachment 1.

viii. Enabling Customer Technologies

Con Edison is proposing a number of projects that will facilitate customer interaction and response to grid needs by increasing the timeliness and quality of information provided to the customer. These projects would leverage improved customer knowledge and new technology to reduce peak usage.

1) Home Area Network

Con Edison proposes to expand projects that develop the home area network (“HAN”) beyond its AMI pilot projects. Through the use of stimulus funding, Con Edison would expand field testing of In-Home Display devices and Home Area Networks to evaluate customer acceptance of the technologies as well as customer behavior in regards to electric pricing signals, energy usage reports and incentives to reduce energy. The HAN project will allow for two-way communication with the customer, providing the customer with price signals and usage reports, and will also allow for communication directly with the customer’s major electrical appliances.

The estimated cost of the HAN projects is \$3 million; it is projected to result in the creation of between 12 and 14 jobs. Con Edison estimates that \$1.5 million must be recovered from ratepayers. Additional project details are available in Attachment 1.

2) Direct Load Control and Demand Response Monitoring Expansion

Con Edison is proposing to incrementally expand its direct load control program to include through-the-wall and window air conditioning units in its existing Direct Load Control program and also to enhance its capability to measure and verify the response.

The verification and measurement of demand response is attained by establishing a large scale baseline study across end uses and rate classes and the use of billing interval

metering. Monitoring of DR programs, including near-real-time aggregation of DR loads, and validation of program effectiveness over multiple summers will help assess performance information and achievements. Additionally, developing software to aggregate data and providing this information to both the utility and certain DR participants will become critical to system reliability and program success as DR programs become a more integral component of the electric system.

The estimated cost of the direct load control and demand response monitoring expansion is \$6 million, \$3 million for the expansion of the direct load control program and \$3 million for the monitoring and software systems for enhanced demand response monitoring. These expenditures are expected to result in the creation of between 44 and 48 jobs. Con Edison estimates that \$3.0 million must be recovered from ratepayers.

Additional project details are available in Attachment 1.

ix. Superconductor Technology - “Hydra” Secure Super Grids

Con Edison, the United States Department of Homeland Security (“DHS”) and American Superconductor (“AMSC”) plan to request incremental funding of a research, development and implementation effort known as “Hydra.” The goal of Hydra is to develop electric transmission and distribution technology (using superconducting materials) that will enhance the resiliency and security of the nation’s critical infrastructure (such as in New York City’s Financial District) by networking critical substations together at the distribution level. The parties have developed an Inherently Fault Current Limiting (IFCL) High Temperature Superconductor (HTS) cable. The cable itself will be able to carry up to 10 times more electricity than a copper cable of the same diameter, enabling substation interconnections in severely congested locations where that would otherwise be impractical. This will be the first utility installation of a cable with the unique ability to suppress fault currents.

The fault suppressing capability of the Hydra cable protects grid assets and allows for increased interconnectivity on the system, allowing a system operator to redirect power flow in contingency and emergency scenarios. Fault current limiting cables will permit otherwise unfeasible high-voltage interconnections, and, when used in conjunction with distributed generation projects, will enable local power generation within the distribution grid.

Due to changes in load growth projections on the Con Edison system, it is proposed that the Hydra demonstration be moved to an alternate site in the Company's service territory, resulting in increased project costs estimated at \$40 million. Con Edison and American Superconductor will jointly request funding from Recovery Act funds, which may be under Smart Grid or some other qualifying category. Con Edison and American Superconductor will share the any unfunded costs. Based on current estimates under the Smart Grid category, Con Edison may be required to fund approximately \$10 million from ratepayers with American Superconductor covering the remainder of the cost share. Con Edison estimates that this project will create a total of between 26 and 28 jobs. Additional details are available in Attachment 1.

B. Program Costs

The Companies estimate that the total project cost for all the Smart Grid initiatives will be between \$318 million and \$328 million. As a result of Recovery Act funding, and secondary funding when available, the Companies estimate that the costs for the Smart Grid projects that must be recovered from ratepayers is between \$149 million and \$154 million.

III. The Companies' Other Possible EDER Projects

The Companies have evaluated the universe of their activities that could be expanded to meet the energy-related objectives of the Recovery Act, and the Companies intend to propose projects for Recovery Act funding under EDER or under other funding opportunities, including the projects summarized below.

A. Project Summaries

i. Renewable Energy

Con Edison's solar energy program for the Recovery Act will install 35 MW of additional solar energy resources in the Con Edison service area, 23 MW more than contained in the proposal currently pending before the Commission in Matter 09-00273. The main goal of this initiative is to provide an increased understanding of how solar energy can provide clean, distributed renewable supply to Con Edison's electric system. While the Company believes that this program can qualify for Recovery Act funding in a category that allows for grants to cover fully the program's costs, when the rules are promulgated this project could be within the Smart Grid category and therefore require partial ratepayer support. At this time, this project is not in the category for which matching funds support is requested, but the filing may be so amended in the future should that category be more appropriate.

Con Edison's off-shore wind project study is being conducted in partnership with the Long Island Power Authority ("LIPA"). The study will investigate the feasibility of a possible LIPA/Con Edison Offshore Wind Farm, which would likely be designed for 350 MW of generation, with the possibility for expansion to 700 MW in its first phase, giving it the potential to be the largest offshore wind proposal in the country. The study will rely on data collected by a new deep-water meteorological weather station, which will be equipped to collect important weather data, such as wind speed and direction, temperature and wave height, needed for the siting, design and engineering of the wind farm. Con Edison and LIPA are considering proposing the wind study and the related deep-water weather station for Recovery Act funding.

ii. Energy Efficiency

In the area of energy efficiency Con Edison plans to propose a number of projects intended to achieve both energy and capacity savings while testing and verifying customer behavior. These programs include:

- Targeted replacement of inefficient refrigerators in a portion of the rent control and rent stabilized market segment coupled with recycling of the refrigerators removed.
- Demonstration of integrating existing building energy management systems (including customer load management, focusing on high intensity energy end uses like data centers), and efficiency efforts. This project's goals would include reducing operating and capital expenses and providing customer value in improved building efficiency. The integration will be designed to enhance grid reliability through increased resource diversity and to determine how an optimized network of distributed resources can be integrated into resource and grid planning.

iii. Electrification of the Transportation Sector

The Companies, potentially in partnership with other utilities in New York State and NYSERDA, have created a project to develop a utility hybrid vehicle that will offer all the benefits of hybrid vehicles and will power ancillary equipment using electric power rather than using a gasoline or diesel engine. These vehicles have the potential to significantly reduce vehicle idling, emissions, and noise at job-sites while reducing fuel consumption. In addition, a comprehensive program could include demonstration of electric vehicle charging infrastructure. This project would encourage standardization for charging stations across the State, permit interoperability of charging stations with the grid, and reduce vehicle emissions.

iv. Transmission Assessment

The New York Strategic Transmission Assessment and Reliability Study (“STARS”) Working Group, which includes all the New York transmission-owning utilities (“NYTOs”) including the Companies, is performing an analysis of the New York State electric transmission system for a ten-year period starting in the year 2018. This analysis could lead to planned transmission investments to be made by individual NYTOs over the next 20 years as upgrades are considered in a coordinated manner in response to reliability, economic considerations, and political and regulatory initiatives, including but not limited to the required integration of renewables in support of the Renewable Portfolio Standard and integration of cost-effective new technologies that support increased situational awareness through Smart Grid applications. The Companies, along with the other NYTOs, are considering submitting an application for Recovery Act funding of the STARS effort.

v. Gas Infrastructure

Con Edison will reinforce and enlarge the capacity of its gas distribution and transmission system in New York City, which will benefit electric generation by increasing the already high reliability of the gas system that supplies natural gas to local power plants. This enhancement will allow for increases in the use of clean natural gas in power generation (displacing the use of liquid fuels with less desirable environmental characteristics) as well as potentially expanding the penetration of distributed generation.

vi. Capacitor Banks

The Companies are proposing to install, in coordination with the NYISO and other transmission owners in New York State, capacitor banks that will improve VARs and optimize and increase the efficiency of distribution systems. The Companies would also upgrade certain meters to enhance the accuracy of wholesale power measurement.

IV. PROPOSED COST RECOVERY

The Companies will seek Recovery Act funding for the projects described above and do not currently intend to proceed with the projects as described absent such funding. In accordance with the Recovery Act, certain projects will qualify for full funding, whereas others, such as the Companies' Smart Grid projects, will be eligible for grants for up to 50 percent of their cost.

Except where noted, the Companies do not know of any additional non-ratepayer, non-federal sources of funding available for their Smart Grid projects. The Companies propose to recover from ratepayers remaining costs associated with projects that are not fully funded by the Recovery Act. To accomplish this, the Companies are seeking the Commission's authorization of surcharge mechanisms to recover costs not funded and to recover carrying charges on costs incurred prior to the receipt of funds that were approved by the DOE. Upon Commission approval of the cost recovery mechanisms, the Companies will make the appropriate compliance tariff filings to enable the Companies, upon receiving a grant of federal funding, to begin the recovery of (i) expenditures not funded by the Recovery Act and (ii) carrying charges associated with expenditures for which federal funding has been granted but not yet received. The Companies will commence the implementation of the projects only after Federal funding has been approved by the DOE. If the Commission desires the Companies to undertake any projects without federal funding or before federal funding is granted, the surcharge mechanisms would enable the Companies to recover from ratepayers all of the costs associated with these projects (subject to later crediting customers with any federal funds received).

As the costs are being incurred on projects that have been approved for partial or full Federal funding, the Companies propose to begin recovery of the carrying costs on such expenditures from ratepayers prior to receipt of Federal funds for capital and O&M costs to be federally funded and on capital costs to be funded by ratepayers. Cost recovery would also

include all O&M expenses to be funded by ratepayers incurred in the implementation of the projects.

These capital carrying costs and O&M costs would be recovered from all electric customers⁵ on a monthly basis for all projects granted Federal funds. For projects that receive partial or full Federal funding, prior to the projects being placed in service, the carrying cost will be equal to each company's currently authorized pre-tax rate of return for each service. After the projects are placed in service, the carrying cost will also include an allowance for depreciation. For projects receiving partial Federal funding, the surcharge will continue until such time as base rates are adjusted to include recovery of project costs that were not funded by Federal grants. For projects fully funded by Federal grants, the surcharge will continue until all expenditures incurred have been fully reimbursed by Federal funds. Funding received will be applied against unrecovered costs as it is received. As portions of the federal funding exceed the Companies' unrecovered costs, the amounts above this level will be utilized to offset any remaining costs to be incurred and the remainder will be credited to ratepayers.

V. THE RECOVERY ACT PROCESS AND SUPPLEMENTAL DOCUMENT FILINGS

Because many important details related to the release of the Recovery Act funds and the rules and regulations regarding those funds have not been released, it is likely that new information will require reappraisal of the information in this document. The Companies therefore anticipate filling supplemental documents with the Commission to conform to rules of the Recovery Act as more information becomes known. The Companies are reviewing the Smart Grid NOI and will supplement this filing as appropriate.

VI. CONCLUSION

For the reasons stated, the Companies request that the Commission approve the Smart Grid projects and authorize the recovery through surcharge mechanisms of the balance of all costs for Smart Grid projects described herein and awarded funding by the DOE.

Dated: New York, NY
April 17, 2009

Respectfully submitted,

/s/Sara Schoenwetter

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⁵ Cost recovery for the AMI Pilot Projects is addressed in the AMI filing and would be applicable to both electric and gas customers.