STATE OF NEW YORK

7480

2017-2018 Regular Sessions

IN ASSEMBLY

April 26, 2017

Introduced by M. of A. CAHILL -- read once and referred to the Committee on Energy

AN ACT to amend the energy law, the public service law, the public authorities law and the rural electric cooperative law, in relation to establishing the "New York grid modernization act"

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Short title. This act shall be known and may be cited as the "New York grid modernization act".

§ 2. Legislative findings and purpose. The legislature finds that the widely acknowledged bottlenecks in the state's aging infrastructure have resulted in high delivery costs for the downstate region and struggling power plants upstate. This outdated transmission system is leading to unnecessary congestion costs. Additionally, increasingly frequent traumatic weather events have highlighted the unreliability and uncertainty of our current system. Investments to modernize the state's infrastructure are needed to reach our energy goals as society's growing reliance on electricity along with advancements in smart grid technology have made the old model obsolete.

The legislature further finds and recognizes that as the available resources and technologies evolve, the design of the smart grid must be capable of adapting to shifting conditions and priorities to meet utility and customer needs. In the short term, utilities should pursue established and reliable technologies that can provide a relatively certain return on investment.

In the longer term, federal investment has provided for smart grid projects nationwide, which will generate a significant base of knowledge that will help identify technologies that are most effective.

The legislature also finds that half of the current workforce involved in the production and delivery of our electricity will be retired or no longer in that workforce by 2017. Workforce recruitment campaigns developed by utilities, in conjunction with training facilities that provide certification for skilled positions and offer tuition assistance, will

EXPLANATION--Matter in *italics* (underscored) is new; matter in brackets [-] is old law to be omitted.

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attract knowledgeable workers who will be instrumental in the implementation of a modernized electric grid.

§ 3. Section 6-102 of the energy law is amended by adding a new subdivision 7 to read as follows:

7. The board shall take an active role in advising the public service commission in the development of, and any subsequent revisions to, the grid modernization order required pursuant to section sixty-six-o of the public service law.

§ 4. The public service law is amended by adding a new section 66-o to read as follows:

§ 66-o. Establishment of grid modernization program. 1. Definitions. As used in this section: (a) "Electric transmission and distribution company" or "transmission and distribution company" shall be known as an investor-owned utility having annual revenues in excess of two hundred million dollars that transmits and distributes electricity within this state or a municipality that distributes electricity and receives less than its entire electric supply from the power authority of the state of New York and is subject to the jurisdiction of the commission with respect to the regulation of the price of electricity.

(b) "Full load municipal electric customer", shall be known as a municipality that distributes electricity and receives its entire electric supply from the power authority of the state of New York;

(c) "Cooperative" shall have the same meaning as such term is defined in paragraph (a) of section two of the rural electric cooperative law.

(d) "New York transmission and distribution coordinating council" or "transmission council" shall be known as a consortium which shall be formed pursuant to this act for the purpose of identifying areas of electrical congestion within New York's high voltage transmission system comprising:

(i) Consolidated Edison, Orange and Rockland Utilities, Central Hudson Gas and Electric, Niagara Mohawk d/b/a National Grid, New York State Electric and Gas and Rochester Gas and Electric;

(ii) Public power authorities; and

(iii) the New York state energy research and development authority;

(e) "New York's high voltage transmission system" or "high voltage transmission system" shall mean electric transmission lines as such term is referred to in paragraph (a) of subdivision two of section one hundred twenty of the public service law, provided that electric transmission lines shall also include electric transmission lines located wholly underground in a city in excess of one hundred twenty-five thousand persons or a primary transmission line approved by the federal energy regulatory commission in connection with a hydro-electric facility and other equipment necessary for electric transmission.

(f) "Public power authorities" shall be known as the power authority of the state of New York and the Long Island power authority.

(g) "Smart grid" shall be known as investments and policies that together promote one or more of the following goals:

(i) Increased use of digital information and controls technology to improve reliability, security and efficiency of the electric grid;

(ii) Dynamic optimization of grid operations and resources, with full cyber security;

(iii) Deployment and integration of distributed resources and generation, including renewable resources;

(iv) Development and incorporation of demand-response, demand-side resources, and energy efficiency resources;

(v) Deployment of "smart" technologies, real-time, automated, interactive technologies that optimize the physical operation of appliances and consumer devices for metering, communications concerning grid operations and status, and distribution automation.

(vi) Integration of "smart" appliances and consumer devices;

(vii) Deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, thermal-storage air conditioning and renewable energy generation;

(viii) Provision to consumers of timely information and control options;

(ix) Development of open access standards for communication and interoperability of appliances and equipment connected to the electric grid, including the infrastructure serving the grid;

(x) Identification and lowering of unreasonable or unnecessary barriers to adoption of Smart Grid technologies, practices, services, and business models that support energy efficiency, demand-response, and distributed generation; and

(xi) Advanced metering infrastructure.

(h) "Advanced metering infrastructure" or "AMI" shall be known as the communications hardware and software and associated system software that is designed to create a network between advanced meters and electric transmission and distribution company systems and allow for collection and distribution of information to customers and other authorized parties in addition to providing information to transmission and distribution companies.

(i) "Smart grid advisory council" means the group of stakeholders formed pursuant to paragraph (a) of subdivision two of this section for purposes of advising and working with the public service commission to determine the feasibility of the development and implementation of a Smart Grid Advanced Metering Infrastructure Deployment Plan.

(j) "Workforce development" shall mean training initiatives and curriculum sponsored by transmission and distribution companies and public power authorities that will ensure sufficient staffing to implement the grid modernization programs. Such workforce development programs shall be undertaken through partnerships with state universities, community colleges, boards of cooperative education and other entities accredited by the American National Standards Institute for the purposes of implementing grid modernization programs.

2. Smart grid advisory council. (a) Within one hundred eighty days of the effective date of this section the smart grid advisory council ("council") shall be established. The council shall be composed of seven voting members, with each member possessing either technical, business or consumer expertise in smart grid technology. Five members shall be appointed by the governor, one member shall be appointed by the temporary president of the senate and one member shall be appointed by the speaker of the assembly. The governor shall appoint the chairperson of the New York state energy research and development authority to serve as chairperson of the council. Members of the council, except those that are employees or officers of the state, its authorities or agencies, shall not receive a salary or other compensation, but shall be allowed the necessary and actual expenses incurred in the performance of duties under this section. Any reasonable costs associated with functioning of the council shall be borne by the New York state energy research and development authority.

(b) Within six months of the establishment of the council, the smart grid advisory council shall submit a report to the commission on the feasibility of establishing a statewide smart grid system. Such report shall analyze the potential for the statewide development of a smart grid system that would:

(i) utilize digital information technology and communications networks to gather and submit information on electricity usage, real time wholesale and retail electric prices, voltage level, and disruptions on local electric distribution networks;

(ii) allow for the integration of AMI to measure and transmit data on consumer electric usage;

(iii) incorporate consumer products, including household appliances and electric plug-in vehicles;

(iv) promote the use of distributed generation, including renewable technologies; and

(v) protect the privacy of consumers and consumer usage data.

3. New York transmission and distribution coordinating council. Within one hundred eighty days of the effective date of this section the New York transmission and distribution coordinating council shall be created. Any reasonable costs associated with the functioning of the committee shall be borne by the New York state energy research and development authority. Within one hundred eighty days of the creation of such council, the council shall submit to the commission a report identifying areas of concern within the state's high voltage transmission system. Such report shall:

(a) locate and identify and propose upgrades or replacement of high voltage transmission lines and/or components of the high voltage transmission system that are in service as of the effective date of this section;

(b) Identify equipment upgrades or installations that are necessary to relieve areas of congestion within the high voltage transmission network; and

(c) Provide a cost analysis of proposed high voltage transmission line component upgrades or replacement over a ten-year period, which such cost analysis shall include:

(i) a proposal for the cost sharing of proposed transmission upgrades or replacement projects that directly or indirectly benefit customers in the respective service territories of two or more electric transmission and distribution companies;

(ii) strategies for attracting private investment for proposed transmission upgrades or replacement projects identified in the report;

(iii) an analysis of the financial and other impacts of proposed transmission upgrades or replacement projects on electric ratepayers; and

(iv) any other information, studies, maps or analyses the transmission council deems necessary.

4. Commission review of smart grid advisory council report. (a) The commission, thirty days upon receiving the "smart grid advisory council" report pursuant to subdivision two of this section, shall determine the reasonableness, efficacy and expense of the development of a ten year statewide smart grid deployment by transmission and distribution companies and public power authorities. In making its determination the commission shall consider whether smart grid deployment would serve the public interest, with consideration of the impact on the safety and reliability of local distribution networks, the retail cost of electricity to residential, commercial and industrial customers and the security and privacy of customer energy usage information and data.

(b) If the commission determines that smart grid deployment meets the public interest it shall require, in its grid modernization order, made pursuant to subdivision five of this section that transmission and distribution companies invest in smart grid deployment.

(c) If the commission determines that smart grid deployment would not meet the public interest for reasons specified in paragraph (a) of this subdivision it shall provide a statement in its grid modernization order, made pursuant to subdivision five of this section detailing the reasons that smart grid deployment would not serve the public interest.

5. Commission grid modernization order. No later than two years following the effective date of this section, the commission, after consultation with the state energy planning board, established pursuant to article six of the energy law, the New York transmission and distribution coordinating council and the smart grid advisory council, shall approve an order approving a ten year grid modernization program to be undertaken by transmission and distribution companies.

(a) The order establishing the program shall include high voltage transmission system improvements, which shall include, where applicable, but not be limited to, the replacement or upgrade of transmission facilities or transmission lines, which, due to their years in service or limited transfer capacity have created or have the potential to create within ten years of the effective date of this section a significant electric system reliability problem, or as determined by the commission have contributed to a significant increase in the wholesale cost of electricity. The commission shall not approve any proposal to invest in new transmission facilities that would require the acquisition of substantial new rights of way. Any high voltage transmission system improvements ordered by the commission shall:

(i) encourage the interconnection of existing and proposed electric generating facilities, with an emphasis on renewable energy technologies, including but not limited to solar and wind;

(ii) allow for the economic and cost-effective transmission of electricity from existing and proposed electric generating facilities located in New York to energy intensive regions located within the electric transmission system operated by the bulk system operator serving the state's electric system;

(iii) be sited only on existing transmission rights of way, provided further that the acquisition of additional lands parallel to such rights of way be minimal;

(iv) be designed to reduce susceptibility to power outages caused by events such as storm-related damage including, but not limited to, high winds, thunderstorms and ice storms; and

(v) meet any other standards for economy and reliability established by the commission in developing its grid modernization program.

(b) The order establishing the program shall also include distribution system improvements such as but not be limited to underground residential distribution cable injection and replacement, mainline cable system refurbishment and replacement, wood utility pole inspection, treatment and replacement, the replacement or relocation or underground conversion of certain circuits or other similar measures to minimize outages caused by damage to infrastructure and equipment that have been identified as susceptible to damage from events such as storm-related damage, including, but not limited to, high winds, thunderstorms and ice storms. Distribution system improvements made pursuant to this order shall:

(i) be designed to reduce the susceptibility to electrical outages including those caused by events such as storms;

(ii) where possible and practicable, be designed and located in a manner that will reduce the reliance on utility right of way maintenance practices including tree and brush cutting; and

(iii) where possible and practicable allow for and encourage the integration of AMI if the commission finds that it would be in the public interest.

(c) The order establishing the program shall also include energy low-income assistance and energy usage education, which shall include but not be limited to:

(i) residential and non-residential and small business utility ratepayer hardship programs;

(ii) grants and other payment concessions to disabled veterans, defined as a veteran who has received a compensation rating from the United States department of veterans affairs or from the United States department of defense because of a service-connected disability incurred in the line of duty in the active military, naval or air services who demonstrate a hardship, a disabled veteran who became severely and permanently disabled as a result of injury or illness suffered or incurred during military training in preparation for duty in a combat theater or combat zone of operations who demonstrate a hardship and members of the armed services or a member of the national guard or reserve as defined in 10 U.S.C. Section 101 (d) (1), or a member of the state organized militia, and is called or ordered to active duty for the state, as defined in subdivision one of section six of the military law and who demonstrates a hardship; and

(iii) budget assistance programs that provide tools and education to the general public with an emphasis on low-income customers and senior citizens to assist them with obtaining information regarding energy usage and effective means of managing energy costs.

(d) Energy low-income assistance and education programs made pursuant to this section shall be designed to reduce or prevent disconnection of utility service to residential and non-residential customers due to any potential increase in monthly utility bills.

(e) If the commission determines that it is in the public interest, the order establishing the program shall also include smart grid deployment. Smart grid infrastructure deployment made pursuant to this order shall:

(i) be designed to allow for electric customers to obtain real-time retail electric pricing data and consumer demand data within their respective company's service territory through the installation of AMI, which may include smart meters or interactive consumer software and communications applications;

(ii) protect customer privacy, including personal financial information and data relating to personal electrical usage;

(iii) allow any customer of an electric transmission and distribution company to, at no penalty, fee or service charge, to decline the permission of his or her respective company to replace a current meter with an AMI device or install any AMI device at his or her property for the measurement of and storage of electric usage data;

(iv) accommodate and encourage the use of smart appliances and plug-in or hybrid electric vehicles; and

(v) include initiatives to educate consumers on the proper usage of technologies with the aim of promoting system-wide reduction of peak energy usage.

(f) The order establishing the program shall also require electric and transmission distribution companies to administer a workforce develop-

ment program designed to ensure that each such company will recruit and maintain adequate certified full-time and part-time employees and contracted workers to carry out the requirements pursuant to paragraphs (a), (b), and (c) of this subdivision. Workforce development program made pursuant to this subdivision shall:

(i) Require each transmission and distribution company with annual gross revenues in excess of two hundred million dollars to maintain, at a minimum, one in-state training facility located within its respective service territory for the purposes of providing full-time and part-time employees and contracted workers any necessary instruction and hands-on training required for smart grid deployment made pursuant to this section;

(ii) Require each transmission and distribution company to create a tuition and financial assistance fund with any monies made available pursuant to paragraph (d) of subdivision six of this section to cover the costs of training prospective full-time and part-time employees through state universities, community colleges, boards of cooperative education and other entities accredited by the American National Standards Institute.

(iii) Require each transmission and distribution company to develop workforce recruitment programs to ensure that each such company maintains sufficient full-time and part-time employees to offset any potential workforce reductions attributed to retirement.

6. Electric transmission and distribution company program plan. No later than one year following the commission's grid modernization order, each electric transmission and distribution company shall file a program plan for the purpose of complying with such order made pursuant to this section.

(a) The commission shall approve each such plan, or may modify it as it deems appropriate, if the commission finds that the plan would result in achievement of the company's obligations, promotes the sustained and orderly development of the statewide electric power grid, and protects ratepayers from significant retail electric rate increases. The commission shall require each electric transmission and distribution company to begin implementation of its grid modernization programs within three hundred sixty-five days of its approval.

(b) The ten year plans submitted by the transmission and distribution companies pursuant to this subdivision shall be designed to include annual investment targets; intervenor funds; rebates for households eligible for energy low-income assistance; consumer education and workforce development; AMI deployment plans for customers with electricity demands less than 300 kilowatt hours; workforce and cyber security systems to protect customer financial information and data relating to personal electrical usage.

(c) The commission shall not approve a rate proposal due to expenditures made in order to comply with this section made by an electric transmission and distribution company if such proposal would increase electric rates for customers above two and one-half percent. In the event that such cap would be exceeded, the commission may, in its discretion order a transmission and distribution company to reduce expenditures in the following reporting year to a level sufficient for achieving grid modernization benchmarks without significant impact to ratepayers.

(d) The commission shall proportionally credit and make available funds for the purposes of creating a fund for tuition and financial assistance as required by subparagraph (ii) of paragraph (f) of subdivi-

sion five of this section from assessments on transmission and distribution companies under direct oversight of the commission collected on or after July first, two thousand eight for the purpose of funding electric utility public benefit programs, including, but not limited to, energy efficiency and energy conservation programs, other energy technology and education programs and any interest earned by the fund.

7. No later than July first, two thousand twenty, and every two years thereafter, the commission shall, after notice and provision for the opportunity for public comment, issue a comprehensive review of the program established pursuant to this section. The commission shall determine, among other matters:

(a) the progress of each transmission and distribution company in meeting its obligations pursuant to this act and progress in meeting the overall annual targets for modernization; and

(b) annual commitments and expenditures. The commission shall evaluate the reasonableness of the any modifications to its grid modernization order.

§ 5. Section 66 of the public service law is amended by adding a new subdivision 29 to read as follows:

29. (a) Each electric and gas corporation with annual gross revenues in excess of two hundred million dollars shall not employ or otherwise contract for the services of a lineworker, utility substation technician, relay technician, engineering technician, alternative fuel technician, meter technician, natural gas technician, gas service technician, corrosion technician, generation instrument and control technician, mechanical technician, electrical technician, auxiliary equipment operator, plant operator, radiation protection technician, unless the person meets one of the following:

(i) has successfully completed an educational program and holds and maintains a certificate administered by an American National Standards Institute (ANSI) accredited Center for Energy Workforce Development (CEWD) Energy Industry Fundamentals Approved Course Provider;

(ii) has completed an appropriate training program in the United States Army, Navy, Air Force, Marine Corps that is comparable to training provided by the entities listed in subparagraph (i) of this paragraph;

(iii) was employed by an electric and gas corporation to perform the duties related to services required of one or more of the positions identified in this paragraph on or in the two years immediately prior to the effective date of this paragraph; or

(iv) is in the service of an agency or department of the federal government, to the extent the person is performing services comparable to the positions listed in this paragraph.

A person may be employed or contracted by an electric or gas corporation to perform the duties related to services required of one or more of the positions identified in this paragraph during the twelve month period immediately following successful completion of an educational program under subparagraph (i) of this paragraph, but may not continue to be employed or contracted with beyond that period without documentation that the employee or contracted worker holds and maintains the certification required in subparagraph (i) of this paragraph.

(b) A person who qualifies to perform the duties related to services required of one or more of the positions identified in paragraph (a) of this subdivision must annually complete at least thirty-five hours of continuing education to remain qualified to be employed or contracted with for such services by an electric and gas corporation. Any expenses

associated with the continuing education requirements of this subparagraph shall be the responsibility of the employer.

§ 6. Section 1005 of the public authorities law is amended by adding a new subdivision 26 to read as follows:

26. Establishment of grid modernization program. 1. Definitions. As used in this section:

(a) "Electric transmission and distribution company" or "transmission and distribution company" shall be known as an investor-owned utility having annual revenues in excess of two hundred million dollars that transmits and distributes electricity within this state or a municipality that distributes electricity and receives less than its entire electric supply from the power authority of the state of New York and is subject to the jurisdiction of the commission with respect to the regulation of the price of electricity.

(b) "Full load municipal electric customer" shall be known as a municipality that distributes electricity and receives its entire electric supply from the power authority of the state of New York.

(c)"Cooperative" shall have the same meaning as such term is defined in paragraph (a) of section two of the rural electric cooperative law.

(d) "Public power authorities" shall be known as the power authority of the state of New York and the Long Island power authority.

(e) "New York transmission and distribution coordinating council" or "transmission council" shall be known as a consortium which shall be formed pursuant to subdivision three of section sixty-six-o of the public service law for the purpose of identifying areas of electrical congestion within New York's high voltage transmission system comprising:

(i) Consolidated Edison, Orange and Rockland Utilities, Central Hudson Gas and Electric, Niagara Mohawk d/b/a National Grid, New York State Electric and Gas and Rochester Gas and Electric;

(ii) Public power authorities; and

(iii) the New York state energy research and development authority.

(f) "New York's high voltage transmission system" or "high voltage transmission system" shall mean electric transmission lines as referred to in paragraph (a) of subdivision two of section one hundred twenty of the public service law, provided that electric transmission lines shall also include electric transmission lines located wholly underground in a city in excess of one hundred twenty-five thousand persons or a primary transmission line approved by the federal energy regulatory commission in connection with a hydro-electric facility and other equipment necessary for electric transmission.

(g) "Smart grid" shall be known as investments and policies that together promote one or more of the following goals:

(i) Increased use of digital information and controls technology to improve reliability, security and efficiency of the electric grid;

(ii) Dynamic optimization of grid operations and resources, with full cyber security;

(iii) Deployment and integration of distributed resources and generation, including renewable resources;

(iv) Development and incorporation of demand-response, demand-side resources, and energy efficiency resources;

(v) Deployment of "smart" technologies, real-time, automated, interactive technologies that optimize the physical operation of appliances and consumer devices for metering, communications concerning grid operations and status, and distribution automation;

(vi) Integration of "smart" appliances and consumer devices;

(vii) Deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, thermal-storage air conditioning and renewable energy generation;

(viii) Provision to consumers of timely information and control options;

(ix) Development of open access standards for communication and interoperability of appliances and equipment connected to the electric grid, including the infrastructure serving the grid;

(x) Identification and lowering of unreasonable or unnecessary barriers to adoption of smart grid technologies, practices, services, and business models that support energy efficiency, demand-response, and distributed generation; and

(xi) Advanced metering infrastructure.

(h) "Advanced metering infrastructure" or "AMI" shall be known as the communications hardware and software and associated system software that is designed to create a network between advanced meters and electric transmission and distribution company systems and allow for collection and distribution of information to customers and other authorized parties in addition to providing information to transmission and distribution companies.

(i) "Smart grid advisory council" means the group of stakeholders formed pursuant to paragraph (a) of subdivision two of section sixty-six-o of the public service law for purposes of advising and working with the public service commission to determine the feasibility of the development and implementation of a smart grid advanced metering infrastructure deployment plan.

(j) "Workforce development" shall mean training initiatives and curriculum sponsored by transmission and distribution companies and public power authorities that will ensure sufficient staffing to implement the grid modernization programs. Such workforce development programs shall be undertaken through partnerships with state universities, community colleges, boards of cooperative education and other entities accredited by the American National Standards Institute for the purposes of implementing grid modernization programs.

(k) "Commission" shall mean the New York Public Service Commission.

2. No later than two years after the effective date of this section, the authority, after consultation with the commission, the New York transmission and distribution coordinating council and the smart grid advisory council, shall approve a ten year grid modernization program. The authority may collaborate with one or more transmission and distribution companies. The program established by the authority shall incorporate, where feasible and practicable, full load municipal electric customers. Such program shall consist of:

(a) High voltage transmission system improvements, including but not limited to the replacement or upgrade of transmission facilities and/or transmission lines, which, due to their years in service or limited transfer capacity have created or are projected to create within ten years of the effective date of this act a significant electric system reliability problem, or as determined by the commission have contributed to a significant increase in the wholesale cost of electricity. The authority shall not develop any plan to invest in new transmission facilities that would require the acquisition of substantial new rights of way. High voltage transmission system improvements made by the authority pursuant to this section shall:

(i) encourage the interconnection of existing and proposed electric generating facilities, with an emphasis on renewable energy technologies, including but not limited to solar and wind;

(ii) allow for the economic and cost-effective transmission of electricity from existing and proposed electric generating facilities located in New York to energy intensive regions located within the electric transmission system operated by the bulk system operator serving the state's electric system;

(iii) be sited only on existing transmission rights of way, provided further that the acquisition of additional lands parallel to such rights of way be minimal;

(iv) be designed to reduce susceptibility to power outages caused by events such as storm-related damage including, but not limited to, high winds, thunderstorms and ice storms; and

(v) meet any other standards for economy and reliability established by the commission in developing its grid modernization program pursuant to subdivision five of section sixty-six-o of the public service law.

(b) Distribution system infrastructure improvements, which shall include, where applicable, but not be limited to underground residential distribution cable injection and replacement, mainline cable system refurbishment and replacement, wood utility pole inspection, the replacement or relocation or underground conversion of certain circuits which have been identified by the commission as susceptible to outages or service disruption by events such as storm-related damage, including, but not limited to, high winds, thunderstorms and ice storms. Distribution system improvements made by the authority pursuant to this act shall:

(i) be designed to reduce the susceptibility to electrical outages including those caused by events such as storms;

(ii) where possible and practicable, be designed and located in a manner that will reduce the reliance on utility right of way maintenance practices including tree and brush cutting; and

(iii) where possible and practicable allow for and encourage the integration of AMI.

(c) Energy low-income assistance and energy usage education, which shall include, where applicable, but not be limited to:

(i) residential and non-residential and small business utility ratepayer hardship programs;

(ii) grants and other payment concessions to disabled veterans, defined as a veteran who has received a compensation rating from the United States department of veterans affairs or from the United States department of defense because of a service-connected disability incurred in the line of duty in the active military, naval or air services who demonstrate a hardship, a disabled veteran who became severely and permanently disabled as a result of injury or illness suffered or incurred during military training in preparation for duty in a combat theater or combat zone of operations who demonstrate a hardship and members of the armed services or a member of the national guard or reserve as defined in 10 U.S.C. Section 101 (d) (1), or a member of the state organized militia, and is called or ordered to active duty for the state, as defined in subdivision one of section six of the military law and who demonstrates a hardship; and

(iii) budget assistance programs that provide tools and education to authority customers with an emphasis on low-income customers and senior citizens to assist them with obtaining information regarding energy usage and effective means of managing energy costs.

(d) Energy low-income assistance and education programs made pursuant to this section shall be designed to reduce or prevent disconnection of utility service to residential and non-residential customers due to any potential increase in monthly utility bills.

(e) Smart grid deployment, if determined feasible and advisable by the trustees, which will provide customers with the technological and educational resources to match personal energy usage to periods of reduced or low electric demand within their respective company's service territory. Smart grid infrastructure deployment made pursuant to this section shall:

(i) be designed to allow for electric customers to obtain real-time retail electric pricing data and consumer demand data within the authority's service territory through the installation of AMI, which may include smart meters or interactive consumer software and communications applications;

(ii) protect customer privacy, including personal financial information and data relating to personal electrical usage;

(iii) allow any customer of the authority, at no penalty, fee or service charge, to decline the permission of the authority to replace a current meter with an AMI device or install any AMI device at his or her property for the measurement of and storage of electric usage data;

(iv) accommodate and encourage the use of smart appliances and plug-in or hybrid electric vehicles; and

(v) include initiatives to educate consumers on the proper usage of technologies with the aim of promoting system-wide reduction of peak energy usage.

(f) The grid modernization program developed by the authority shall ensure that the authority will recruit and maintain adequate certified full-time and part-time employees and contracted workers to carry out the requirements pursuant to paragraphs (a), (b) and (e) of this subdivision. Workforce development programs made pursuant to this subdivision shall:

(i) Require the authority to maintain at a minimum, one instate training facility for the purposes of providing full-time, part-time employees and contracted workers any necessary instruction and hands-on training required for smart grid deployment made pursuant to this section;

(ii) Require the authority to create a tuition and financial assistance fund to cover the costs of training prospective full-time and part-time employees and contracted workers through state universities, community colleges, boards of cooperative education and other entities accredited by the American National Standards Institute;

(iii) Require the authority to develop workforce recruitment programs to ensure that it maintains sufficient full-time and part-time employees to offset any potential workforce reductions attributable to retirement.

3. The grid modernization program shall promote the sustained and orderly development of the statewide electric power grid and protect ratepayers from significant retail electric price increases. The authority's grid modernization program shall:

(a) be designed to include a ten year grid modernization strategy with annual investment targets; rebates for households eligible for energy low-income assistance; consumer education and workforce development plans; advanced meter infrastructure deployment plans for customers with electricity demands less than three hundred kilowatt hours; workforce development, and cyber security systems to protect customer financial information and data relating to personal electrical usage.

(b) The total expenditures undertaken by the authority for capital investments undertaken pursuant to this section shall not increase electric rates for authority customers above two and one-half percent. In the event that such cap would be exceeded, the authority may as deemed feasible and advisable by the trustees, reduce expenditures in the following reporting year to a level sufficient for achieving grid modernization benchmarks without significant impact to ratepayers.

(c) No later than July first, two thousand nineteen, and every two years thereafter, the authority shall submit to the governor, the temporary president of the senate, the speaker of the assembly, the chair of the senate committee on energy and telecommunications and the chair of the assembly committee on energy a comprehensive review of the program established pursuant to this section. The report, among other matters shall contain:

(i) an analysis of the authority's progress meeting obligations pursuant to this act and progress in meeting the overall annual targets for modernization; and

(ii) annual commitments and expenditures.

§ 7. Sections 1020-ii, 1020-jj and 1020-kk of the public authorities law, as renumbered by chapter 388 of the laws of 2011, are renumbered sections 1020-jj, 1020-kk and 1020-ll and a new section 1020-ii is added to read as follows:

§ 1020-ii. Establishment of grid modernization program. 1. Definitions. As used in this section:

(a) "Electric transmission and distribution company" or "transmission and distribution company" shall be known as an investor-owned utility having annual revenues in excess of two hundred million dollars that transmits and distributes electricity within this state or a municipality that distributes electricity and receives less than its entire electric supply from the power authority of the state of New York and is subject to the jurisdiction of the commission with respects to the regulation of the price of electricity.

(b) "Full load municipal electric customer" shall be known as a municipality that distributes electricity and receives its entire electric supply from the power authority of the state of New York.

(c) "Cooperative" shall have the same meaning as such term is defined in subdivision (a) of section two of the rural electric cooperative law.

(d) "Public power authorities" shall be known as the power authority of the state of New York and the Long Island power authority.

(e) "New York transmission and distribution coordinating council" or "transmission council" shall be known as a consortium which shall be formed pursuant to subdivision three of section sixty-six-o of the public service law for the purpose of identifying areas of electrical congestion within New York's high voltage transmission system comprising:

(i) Consolidated Edison, Orange and Rockland Utilities, Central Hudson Gas and Electric, Niagara Mohawk d/b/a National Grid, New York State Electric and Gas and Rochester Gas and Electric;

(ii) Public power authorities; and

(iii) the New York state energy research and development authority.

(f) "New York's high voltage transmission system" or "high voltage transmission system" shall mean electric transmission lines as referred to in paragraph (a) of subdivision two of section one hundred twenty of the public service law, provided that electric transmission lines shall also include electric transmission lines located wholly underground in a city in excess of one hundred twenty-five thousand persons or a primary

transmission line approved by the federal energy regulatory commission in connection with a hydro-electric facility and other equipment necessary for electric transmission.

(g) "Smart grid" shall be known as investments and policies that together promote one or more of the following goals:

(i) Increased use of digital information and controls technology to improve reliability, security and efficiency of the electric grid;

(ii) Dynamic optimization of grid operations and resources, with full cyber security;

(iii) Deployment and integration of distributed resources and generation, including renewable resources;

(iv) Development and incorporation of demand-response, demand-side resources, and energy efficiency resources;

(v) Deployment of "smart" technologies, real-time, automated, interactive technologies that optimize the physical operation of appliances and consumer devices for metering, communications concerning grid operations and status, and distribution automation;

(vi) Integration of "smart" appliances and consumer devices;

(vii) Deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, thermal-storage air conditioning and renewable energy generation;

(viii) Provision to consumers of timely information and control options;

(ix) Development of open access standards for communication and interoperability of appliances and equipment connected to the electric grid, including the infrastructure serving the grid;

(x) Identification and lowering of unreasonable or unnecessary barriers to adoption of smart grid technologies, practices, services, and business models that support energy efficiency, demand-response, and distributed generation; and

(xi) Advanced metering infrastructure.

(h) "Advanced metering infrastructure" or "AMI" shall be known as the communications hardware and software and associated system software that is designed to create a network between advanced meters and electric transmission and distribution company systems and allow for collection and distribution of information to customers and other authorized parties in addition to providing information to transmission and distribution companies.

(i) "Smart grid advisory council" means the group of stakeholders formed pursuant to paragraph (a) of subdivision two of section sixty-six-o of the public service law for purposes of advising and working with the public service commission to determine the feasibility of the development and implementation of a smart grid advanced metering infrastructure deployment plan.

(j) "Workforce development" shall mean training initiatives and curriculum sponsored by transmission and distribution companies and public power authorities that will ensure sufficient staffing to implement the grid modernization programs. Such workforce development programs shall be undertaken through partnerships with state universities, community colleges, boards of cooperative education and other entities accredited by the American National Standards Institute for the purposes of implementing grid modernization programs.

(k) "Commission" shall mean the New York public service commission.

2. No later than two years after the effective date of this section, the authority, after consultation with the commission, the New York

transmission and distribution coordinating council and the smart grid advisory council, shall approve a ten year grid modernization program. The authority may collaborate with one or more transmission and distribution companies. The program established by the authority shall incorporate, where feasible and practicable, full load municipal electric customers. Such program shall consist of:

(a) High voltage transmission system improvements, including but not be limited to the replacement or upgrade of transmission facilities and/or transmission lines, which, due to their years in service or limited transfer capacity have created or are projected to create within ten years of the effective date of this act a significant electric system reliability problem, or as determined by the commission have contributed to a significant increase in the wholesale cost of electricity. The authority shall not develop any plan to invest in new transmission facilities that would require the acquisition of substantial new rights of way. High voltage transmission system improvements made by the authority pursuant to this section shall:

(i) encourage the interconnection of existing and proposed electric generating facilities, with an emphasis on renewable energy technologies, including but not limited to solar and wind;

(ii) allow for the economic and cost-effective transmission of electricity from existing and proposed electric generating facilities located in New York to energy intensive regions located within the electric transmission system operated by the bulk system operator serving the state's electric system;

(iii) be sited only on existing transmission rights of way, provided further that the acquisition of additional lands parallel to such rights of way be minimal;

(iv) be designed to reduce susceptibility to power outages caused by events such as storm-related damage including, but not limited to, high winds, thunderstorms and ice storms; and

(v) meet any other standards for economy and reliability established by the commission in developing its grid modernization program pursuant to subdivision five of section sixty-six-o of the public service law.

(b) Distribution system infrastructure improvements, which shall include, where applicable, but not be limited to underground residential distribution cable injection and replacement, mainline cable system refurbishment and replacement, wood utility pole inspection, the replacement or relocation or underground conversion of certain circuits which have been identified by the commission as susceptible to outages or service disruption by events such as storm-related damage, including, but not limited to, high winds, thunderstorms and ice storms. Distribution system improvements made by the authority pursuant to this section shall:

(i) be designed to reduce the susceptibility to electrical outages including those caused by events such as storms;

(ii) where possible and practicable, be designed and located in a manner that will reduce the reliance on utility right of way maintenance practices including tree and brush cutting; and

(iii) where possible and practicable allow for and encourage the integration of AMI.

(c) Energy low-income assistance and energy usage education, which shall include, where applicable, but not be limited to:

(i) residential and non-residential and small business utility ratepayer hardship programs;

(ii) grants and other payment concessions to disabled veterans, defined as a veteran who has received a compensation rating from the United States department of veterans affairs or from the United States department of defense because of a service-connected disability incurred in the line of duty in the active military, naval or air services who demonstrate a hardship, a disabled veteran who became severely and permanently disabled as a result of injury or illness suffered or incurred during military training in preparation for duty in a combat theater or combat zone of operations who demonstrate a hardship and members of the armed services or a member of the national guard or reserve as defined in 10 U.S.C. Section 101 (d) (1), or a member of the state organized militia, and is called or ordered to active duty for the state, as defined in subdivision one of section six of the military law and who demonstrates a hardship; and

(iii) budget assistance programs that provide tools and education to authority customers with an emphasis on low-income customers and senior citizens to assist them with obtaining information regarding energy usage and effective means of managing energy costs.

(d) Energy low-income assistance and education programs made pursuant to this section shall be designed to reduce or prevent disconnection of utility service to residential and non-residential customers due to any potential increase in monthly utility bills.

(e) Smart grid deployment, if determined feasible and advisable by the trustees, which will provide customers with the technological and educational resources to match personal energy usage to periods of reduced or low electric demand within their respective company's service territory. Smart grid infrastructure deployment made pursuant to this section shall:

(i) be designed to allow for electric customers to obtain real-time retail electric pricing data and consumer demand data within the authority's service territory through the installation of AMI, which may include smart meters or interactive consumer software and communications applications;

(ii) protect customer privacy, including personal financial information and data relating to personal electrical usage;

(iii) allow any customer of the authority, at no penalty, fee or service charge, to decline the permission of the authority to replace a current meter with an AMI device or install any AMI device at his or her property for the measurement of and storage of electric usage data;

(iv) accommodate and encourage the use of smart appliances and plug-in or hybrid electric vehicles; and

(v) include initiatives to educate consumers on the proper usage of technologies with the aim of promoting system-wide reduction of peak energy usage.

(f) The grid modernization program developed by the authority shall ensure that the authority will recruit and maintain adequate certified full-time and part-time employees and contracted workers to carry out the requirements pursuant to paragraphs (a), (b) and (e) of this subdivision. Workforce development programs made pursuant to this subdivision shall:

(i) Require the authority to maintain at a minimum, one instate training facility for the purposes of providing full-time, part-time employees and contracted workers any necessary instruction and hands-on training required for smart grid deployment made pursuant to this section;

(ii) Require the authority to create a tuition and financial assistance fund to cover the costs of training prospective full-time and part-

time employees and contracted workers through state universities, community colleges, boards of cooperative education and other entities accredited by the American National Standards Institute;

(iii) Require the authority to develop workforce recruitment programs to ensure that it maintains sufficient full-time and part-time employees to offset any potential workforce reductions attributable to retirement.

3. The grid modernization program shall promote the sustained and orderly development of the statewide electric power grid and protect ratepayers from significant retail electric price increases. The authority's grid modernization program shall:

(a) be designed to include a ten year grid modernization strategy with annual investment targets; rebates for households eligible for energy low-income assistance; consumer education and workforce development plans; advanced meter infrastructure deployment plans for customers with electricity demands less than three hundred kilowatt hours; workforce development, and cyber security systems to protect customer financial information and data relating to personal electrical usage.

(b) The total expenditures undertaken by the authority for capital investments undertaken pursuant to this section shall not increase electric rates for authority customers above two and one-half percent. In the event that such cap would be exceeded, the authority may as deemed feasible and advisable by the trustees, reduce expenditures in the following reporting year to a level sufficient for achieving grid modernization benchmarks without significant impact to ratepayers.

(c) No later than July first, two thousand nineteen, and every two years thereafter, the authority shall submit to the governor, the temporary president of the senate, the speaker of the assembly, the chair of the senate committee on energy and telecommunications and the chair of the assembly committee on energy a comprehensive review of the program established pursuant to this section. The report, among other matters shall contain:

(i) an analysis of the authority's progress meeting obligations pursuant to this act and progress in meeting the overall annual targets for modernization; and

(ii) annual commitments and expenditures.

§ 8. Article 7 of the rural electric cooperative law is renumbered article 8 and sections 70, 71 and 72 of such law are renumbered sections 80, 81 and 82.

§ 9. The rural electric cooperative law is amended by adding a new article 7 to read as follows:

ARTICLE 7
ESTABLISHMENT OF GRID MODERNIZATION PROGRAM

Section 70. Establishment of grid modernization program.

§ 70. Establishment of grid modernization program. 1. Definitions. As used in this section:

(a) "Electric transmission and distribution company" or "transmission and distribution company" shall be known as an investor-owned utility having annual revenues in excess of two hundred million dollars that transmits and distributes electricity within this state or a municipality that distributes electricity and receives less than its entire electric supply from the power authority of the state of New York and is subject to the jurisdiction of the commission with respect to the regulation of the price of electricity.

(b) "Full load municipal electric customer" shall be known as a municipality that distributes electricity and receives its entire electric supply from the power authority of the state of New York.

(c) "Public power authorities" shall be known as the power authority of the state of New York and the Long Island power authority.

(d) "New York transmission and distribution coordinating council" or "transmission council" shall be known as a consortium which shall be formed pursuant to subdivision three of section sixty-six-o of the public service law for the purpose of identifying areas of electrical congestion within New York's high-voltage transmission system comprising:

(i) Consolidated Edison, Orange and Rockland Utilities, Central Hudson Gas and Electric, Niagara Mohawk d/b/a National Grid, New York State Electric and Gas and Rochester Gas and Electric;

(ii) Public power authorities; and

(iii) The New York State Energy Research and Development Authority.

(e) "New York's high voltage transmission system" or "high voltage transmission system" shall mean electric transmission lines as referred to in paragraph (a) of subdivision two of section one hundred twenty of the public service law, provided that electric transmission lines shall also include electric transmission lines located wholly underground in a city in excess of one hundred twenty-five thousand persons or a primary transmission line approved by the federal energy regulatory commission in connection with a hydro-electric facility and other equipment necessary for electric transmission.

(f) "Smart grid" shall be known as investments and policies that together promote one or more of the following goals:

(i) Increased use of digital information and controls technology to improve reliability, security and efficiency of the electric grid;

(ii) Dynamic optimization of grid operations and resources, with full cyber security;

(iii) Deployment and integration of distributed resources and generation, including renewable resources;

(iv) Development and incorporation of demand-response, demand-side resources, and energy efficiency resources;

(v) Deployment of "smart" technologies, real-time, automated, interactive technologies that optimize the physical operation of appliances and consumer devices for metering, communications concerning grid operations and status, and distribution automation;

(vi) Integration of "smart" appliances and consumer devices;

(vii) Deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, thermal-storage air conditioning and renewable energy generation;

(viii) Provision to consumers of timely information and control options;

(ix) Development of open access standards for communication and interoperability of appliances and equipment connected to the electric grid, including the infrastructure serving the grid;

(x) Identification and lowering of unreasonable or unnecessary barriers to adoption of smart grid technologies, practices, services, and business models that support energy efficiency, demand-response, and distributed generation; and

(xi) Advanced Metering Infrastructure.

(g) "Advanced Metering Infrastructure" or "AMI" shall be known as the communications hardware and software and associated system software that is designed to create a network between advanced meters and electric transmission and distribution company systems and allow for collection and distribution of information to customers and other authorized

parties in addition to providing information to transmission and distribution companies.

(h) "Smart Grid advisory council" means the group of stakeholders formed pursuant to paragraph (a) of subdivision two of section sixty-six-o of the public service law for purposes of advising and working with the public service commission to determine the feasibility of the development and implementation of a smart grid advanced metering infrastructure deployment plan.

(i) "Workforce development" shall mean training initiatives and curriculum sponsored by transmission and distribution companies and public power authorities that will ensure sufficient staffing to implement the grid modernization programs. Such workforce development programs shall be undertaken through partnerships with state universities, community colleges, boards of cooperative education and other entities accredited by the American National Standards Institute for the purposes of implementing grid modernization programs.

(j) "Commission" shall mean the New York Public Service Commission.

2. No later than two years after the effective date of this section, each cooperative operating in New York, after consultation with the commission, the New York transmission and distribution coordinating council and the smart grid advisory council, shall approve a ten year grid modernization program, provided that such program is consistent with any federal law, rule or regulation applicable to cooperatives. Said cooperatives may collaborate with one or more transmission and distribution companies or public power authorities in administering its program. The program established by each cooperative shall consist of:

(a) High voltage transmission system improvements, including but not limited to the replacement or upgrade of transmission facilities and/or transmission lines, which, due to their years in service or limited transfer capacity have created or are projected to create within ten years of the effective date of this act a significant electric system reliability problem, or as determined by the commission have contributed to a significant increase in the wholesale cost of electricity. A cooperative shall not develop any plan to invest in new transmission facilities that would require the acquisition of substantial new rights of way. High voltage transmission system improvements made by the authority pursuant to this section shall:

(i) encourage the interconnection of existing and proposed electric generating facilities, with an emphasis on renewable energy technologies, including but not limited to solar and wind;

(ii) allow for the economic and cost-effective transmission of electricity from existing and proposed electric generating facilities located in New York to energy intensive regions located within the electric transmission system operated by the bulk system operator serving the state's electric system;

(iii) be sited only on existing transmission rights of way, provided further that the acquisition of additional lands parallel to such rights of way be minimal;

(iv) be designed to reduce susceptibility to power outages caused by events such as storm-related damage including, but not limited to, high winds, thunderstorms and ice storms; and

(v) meet any other standards for economy and reliability established by the commission in developing its grid modernization program pursuant to subdivision five of section sixty-six-o of the public service law.

(b) Distribution system infrastructure improvements, which shall include, where applicable, but not be limited to underground residential

distribution cable injection and replacement, mainline cable system refurbishment and replacement; wood utility pole inspection, the replacement or relocation or underground conversion of certain circuits which have been identified by the commission as susceptible to outages or service disruption by events such as storm-related damage, including, but not limited to, high winds, thunderstorms and ice storms. Distribution system improvements made by a cooperative pursuant to this act shall:

(i) be designed to reduce the susceptibility to electrical outages including those caused by events such as storms;

(ii) where possible and practicable, be designed and located in a manner that will reduce the reliance on utility right of way maintenance practices including tree and brush cutting; and

(iii) where possible and practicable allow for and encourage the integration of AMI.

(c) Energy low-income assistance and energy usage education, which shall include, where applicable, but not be limited to:

(i) residential and non-residential and small business utility ratepayer hardship programs;

(ii) grants and other payment concessions to disabled veterans, defined as a veteran who has received a compensation rating from the United States department of veterans affairs or from the United States department of defense because of a service-connected disability incurred in the line of duty in the active military, naval or air services who demonstrate a hardship, a disabled veteran who became severely and permanently disabled as a result of injury or illness suffered or incurred during military training in preparation for duty in a combat theater or combat zone of operations who demonstrate a hardship and members of the armed services or a member of the national guard or reserve as defined in 10 U.S.C. Section 101 (d) (1), or a member of the state organized militia, and is called or ordered to active duty for the state, as defined in subdivision one of section six of the military law and who demonstrates a hardship; and

(iii) budget assistance programs that provide tools and education to authority customers with an emphasis on low-income customers and senior citizens to assist them with obtaining information regarding energy usage and effective means of managing energy costs.

(d) Energy low-income assistance and education programs made pursuant to this section shall be designed to reduce or prevent disconnection of utility service to residential and non-residential customers due to any potential increase in monthly utility bills.

(e) Smart grid deployment, if determined feasible and advisable by the trustees, will provide customers with the technological and educational resources to match personal energy usage to periods of reduced or low electric demand within each cooperative's service territory. Smart grid infrastructure deployment made pursuant to this section shall:

(i) be designed to allow for electric customers to obtain real-time retail electric pricing data and consumer demand data within the cooperative's service territory through the installation of AMI, which may include smart meters or interactive consumer software and communications applications;

(ii) protect customer privacy, including personal financial information and data relating to personal electrical usage;

(iii) allow any customer of a cooperative, at no penalty, fee or service charge, to decline the permission of the cooperative to replace

a current meter with an AMI device or install any AMI device at his or her property for the measurement of and storage of electric usage data;

(iv) accommodate and encourage the use of smart appliances and plug-in or hybrid electric vehicles; and

(v) include initiatives to educate consumers on the proper usage of technologies with the aim of promoting system-wide reduction of peak energy usage.

(f) The grid modernization program developed by the cooperative shall ensure that each such cooperative will recruit and maintain adequate certified full-time and part-time employees and contracted workers to carry out the requirements pursuant to paragraphs (a), (b) and (e) of this section. Workforce development programs made pursuant to this subdivision shall:

(i) require each cooperative to create a tuition and financial assistance fund to cover the costs of training prospective full-time and part-time employees and contracted workers through state universities, community colleges, boards of cooperative education and other entities accredited by the American National Standards Institute;

(ii) require each cooperative to develop workforce recruitment programs to ensure that it maintains sufficient full-time and part-time employees to offset any potential workforce reductions attributable to retirement.

3. The grid modernization program shall promote the sustained and orderly development of the statewide electric power grid and protect ratepayers from significant retail electric price increases. A cooperative's grid modernization program shall:

(a) be designed to include a ten year grid modernization strategy with annual investment targets; rebates for households eligible for energy low-income assistance; consumer education and workforce development plans; advanced meter infrastructure deployment plans for customers with electricity demands less than three hundred kilowatt hours; workforce development, and cyber security systems to protect customer financial information and data relating to personal electrical usage.

(b) The total expenditures undertaken by a cooperative for capital investments undertaken pursuant to this section shall not increase electric rates for cooperative customers above two and one-half percent. In the event that such cap would be exceeded, a cooperative shall reduce expenditures in the following reporting year to a level sufficient for achieving grid modernization benchmarks without significant impact to ratepayers.

(c) No later than July first, two thousand nineteen, and every two years thereafter, each cooperative shall submit to the governor, the temporary president of the senate, the speaker of the assembly, the chair of the senate committee on energy and telecommunications and the chair of the assembly committee on energy a comprehensive review of the program established pursuant to this section. The report, among other matters shall contain:

(i) an analysis of the cooperative's progress meeting obligations pursuant to this act and progress in meeting the overall annual targets for modernization; and

(ii) annual commitments and expenditures.

§ 10. This act shall take effect immediately, provided that section five of this act shall take effect one year after it shall have become a law.