

STATE OF NEW YORK

535

2021-2022 Regular Sessions

IN ASSEMBLY

(Prefiled)

January 6, 2021

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:

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

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 This outdated transmission system is leading to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

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

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

22 The legislature also finds that half of the current workforce involved
23 in the production and delivery of our electricity will be retired or no

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

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longer in that workforce within the next several years. Workforce recruitment campaigns developed by utilities, in conjunction with training facilities that provide certification for skilled positions and offer tuition assistance, will 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-q of the public service law.

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

§ 66-q. 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 subdivision (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 this chapter, 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;

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

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

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

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

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

14 (ix) Development of open access standards for communication and inter-
15 operability of appliances and equipment connected to the electric grid,
16 including the infrastructure serving the grid;

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

21 (xi) Advanced metering infrastructure.

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

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

34 (j) "Workforce development" shall mean training initiatives and
35 curriculum sponsored by transmission and distribution companies and
36 public power authorities that will ensure sufficient staffing to imple-
37 ment the grid modernization programs. Such workforce development
38 programs shall be undertaken through partnerships with state universi-
39 ties, community colleges, boards of cooperative education and other
40 entities accredited by the American National Standards Institute for the
41 purposes of implementing grid modernization programs.

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

1 the council shall be borne by the New York state energy research and
2 development authority.

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

8 (i) utilize digital information technology and communications networks
9 to gather and submit information on electricity usage, real time whole-
10 sale and retail electric prices, voltage level, and disruptions on local
11 electric distribution networks;

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

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

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

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

19 3. New York transmission and distribution coordinating council. With-
20 in one hundred eighty days of the effective date of this section the New
21 York transmission and distribution coordinating council shall be
22 created. Any reasonable costs associated with the functioning of the
23 committee shall be borne by the New York state energy research and
24 development authority. Within one hundred eighty days of the creation of
25 such council, the council shall submit to the commission a report iden-
26 tifying areas of concern within the state's high voltage transmission
27 system. Such report shall:

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

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

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

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

42 (ii) strategies for attracting private investment for proposed trans-
43 mission upgrades or replacement projects identified in the report;

44 (iii) an analysis of the financial and other impacts of proposed tran-
45 smission upgrades or replacement projects on electric ratepayers; and

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

48 4. Commission review of smart grid advisory council report. (a) The
49 commission, thirty days upon receiving the "smart grid advisory council"
50 report pursuant to subdivision two of this section, shall determine the
51 reasonableness, efficacy and expense of the development of a ten year
52 statewide smart grid deployment by transmission and distribution compa-
53 nies and public power authorities. In making its determination the
54 commission shall consider whether smart grid deployment would serve the
55 public interest, with consideration of the impact on the safety and
56 reliability of local distribution networks, the retail cost of electric-

ity 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:

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

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

6 (iii) where possible and practicable allow for and encourage the inte-
7 gration of AMI if the commission finds that it would be in the public
8 interest.

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

12 (i) residential and non-residential and small business utility rate-
13 payer hardship programs;

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

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

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

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

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

45 (ii) protect customer privacy, including personal financial informa-
46 tion and data relating to personal electrical usage;

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

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

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

1 (f) The order establishing the program shall also require electric and
2 transmission distribution companies to administer a workforce develop-
3 ment program designed to ensure that each such company will recruit and
4 maintain adequate certified full-time and part-time employees and
5 contracted workers to carry out the requirements pursuant to paragraphs
6 (a), (b), and (c) of this subdivision. Workforce development program
7 made pursuant to this subdivision shall:

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

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

22 (iii) Require each transmission and distribution company to develop
23 workforce recruitment programs to ensure that each such company main-
24 tains sufficient full-time and part-time employees to offset any poten-
25 tial workforce reductions attributed to retirement.

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

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

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

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

1 this subdivision must annually complete at least thirty-five hours of
2 continuing education to remain qualified to be employed or contracted
3 with for such services by an electric and gas corporation. Any expenses
4 associated with the continuing education requirements of this subpara-
5 graph shall be the responsibility of the employer.

6 § 6. Section 1005 of the public authorities law is amended by adding a
7 new subdivision 28 to read as follows:

8 28. Establishment of grid modernization program. 1. Definitions. As
9 used in this section:

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

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

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

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

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

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

34 (ii) Public power authorities; and

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

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

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

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

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

51 (iii) Deployment and integration of distributed resources and gener-
52 ation, including renewable resources;

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

55 (v) Deployment of "smart" technologies, real-time, automated, interac-
56 tive technologies that optimize the physical operation of appliances and

1 consumer devices for metering, communications concerning grid operations
2 and status, and distribution automation;

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

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

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

10 (ix) Development of open access standards for communication and inter-
11 operability of appliances and equipment connected to the electric grid,
12 including the infrastructure serving the grid;

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

17 (xi) Advanced metering infrastructure.

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

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

31 (j) "Workforce development" shall mean training initiatives and
32 curriculum sponsored by transmission and distribution companies and
33 public power authorities that will ensure sufficient staffing to imple-
34 ment the grid modernization programs. Such workforce development
35 programs shall be undertaken through partnerships with state universi-
36 ties, community colleges, boards of cooperative education and other
37 entities accredited by the American National Standards Institute for the
38 purposes of implementing grid modernization programs.

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

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

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

1 of way. High voltage transmission system improvements made by the
2 authority pursuant to this section shall:

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

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

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

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

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

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

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

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

35 (iii) where possible and practicable allow for and encourage the inte-
36 gration of AMI.

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

39 (i) residential and non-residential and small business utility rate-
40 payer hardship programs;

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

55 (iii) budget assistance programs that provide tools and education to
56 authority customers with an emphasis on low-income customers and senior

1 citizens to assist them with obtaining information regarding energy
2 usage and effective means of managing energy costs.

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

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

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

18 (ii) protect customer privacy, including personal financial informa-
19 tion and data relating to personal electrical usage;

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

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

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

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

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

39 (ii) Require the authority to create a tuition and financial assist-
40 ance fund to cover the costs of training prospective full-time and part-
41 time employees and contracted workers through state universities, commu-
42 nity colleges, boards of cooperative education and other entities
43 accredited by the American National Standards Institute;

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

47 3. The grid modernization program shall promote the sustained and
48 orderly development of the statewide electric power grid and protect
49 ratepayers from significant retail electric price increases. The author-
50 ity's grid modernization program shall:

51 (a) be designed to include a ten year grid modernization strategy with
52 annual investment targets; rebates for households eligible for energy
53 low-income assistance; consumer education and workforce development
54 plans; advanced meter infrastructure deployment plans for customers with
55 electricity demands less than three hundred kilowatt hours; workforce

1 development, and cyber security systems to protect customer financial
2 information and data relating to personal electrical usage.

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

10 (c) No later than July first, two thousand twenty-three, and every two
11 years thereafter, the authority shall submit to the governor, the tempo-
12 rary president of the senate, the speaker of the assembly, the chair of
13 the senate committee on energy and telecommunications and the chair of
14 the assembly committee on energy a comprehensive review of the program
15 established pursuant to this section. The report, among other matters
16 shall contain:

17 (i) an analysis of the authority's progress meeting obligations pursu-
18 ant to this act and progress in meeting the overall annual targets for
19 modernization; and

20 (ii) annual commitments and expenditures.

21 § 7. Sections 1020-jj, 1020-kk and sections 1020-ll of the public
22 authorities law, sections 1020-jj, 1020-kk and 1020-ll as renumbered by
23 chapter 520 of the laws of 2018, and section 1020-ll as renumbered by
24 chapter 415 of the laws of 2017, are renumbered sections 1020-kk, 1020-
25 ll, 1020-mm and 1020-nn and a new section 1020-jj is added to read as
26 follows:

27 § 1020-jj. Establishment of grid modernization program. 1. Defi-
28 nitions. As used in this section:

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

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

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

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

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

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

53 (ii) Public power authorities; and

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

55 (f) "New York's high voltage transmission system" or "high voltage
56 transmission system" shall mean electric transmission lines as referred

1 to in paragraph (a) of subdivision two of section one hundred twenty of
2 the public service law, provided that electric transmission lines shall
3 also include electric transmission lines located wholly underground in a
4 city in excess of one hundred twenty-five thousand persons or a primary
5 transmission line approved by the federal energy regulatory commission
6 in connection with a hydro-electric facility and other equipment neces-
7 sary for electric transmission.

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

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

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

14 (iii) Deployment and integration of distributed resources and gener-
15 ation, including renewable resources;

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

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

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

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

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

29 (ix) Development of open access standards for communication and inter-
30 operability of appliances and equipment connected to the electric grid,
31 including the infrastructure serving the grid;

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

36 (xi) Advanced metering infrastructure.

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

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

50 (j) "Workforce development" shall mean training initiatives and
51 curriculum sponsored by transmission and distribution companies and
52 public power authorities that will ensure sufficient staffing to imple-
53 ment the grid modernization programs. Such workforce development
54 programs shall be undertaken through partnerships with state universi-
55 ties, community colleges, boards of cooperative education and other

1 entities accredited by the American National Standards Institute for the
2 purposes of implementing grid modernization programs.

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

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

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

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

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

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

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

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

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

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

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

55 (iii) where possible and practicable allow for and encourage the inte-
56 gration of AMI.

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

3 (i) residential and non-residential and small business utility rate-
4 payer hardship programs;

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

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

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

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

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

38 (ii) protect customer privacy, including personal financial informa-
39 tion and data relating to personal electrical usage;

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

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

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

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

55 (i) Require the authority to maintain at a minimum, one instate train-
56 ing facility for the purposes of providing full-time, part-time employ-

ees 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 twenty-three, 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

1 subject to the jurisdiction of the commission with respect to the regu-
2 lation of the price of electricity.

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

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

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

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

17 (ii) Public power authorities; and

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

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

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

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

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

34 (iii) Deployment and integration of distributed resources and gener-
35 ation, including renewable resources;

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

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

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

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

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

49 (ix) Development of open access standards for communication and inter-
50 operability of appliances and equipment connected to the electric grid,
51 including the infrastructure serving the grid;

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

56 (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-q 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 article 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

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

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

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

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

19 (iii) where possible and practicable allow for and encourage the inte-
20 gration of AMI.

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

23 (i) residential and non-residential and small business utility rate-
24 payer hardship programs;

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

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

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

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

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

1 (ii) protect customer privacy, including personal financial informa-
2 tion and data relating to personal electrical usage;

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

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

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

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

18 (i) require each cooperative to create a tuition and financial assist-
19 ance fund to cover the costs of training prospective full-time and part-
20 time employees and contracted workers through state universities, commu-
21 nity colleges, boards of cooperative education and other entities
22 accredited by the American National Standards Institute;

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

27 3. The grid modernization program shall promote the sustained and
28 orderly development of the statewide electric power grid and protect
29 ratepayers from significant retail electric price increases. A cooper-
30 ative's grid modernization program shall:

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

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

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

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

55 (ii) annual commitments and expenditures.

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