

# STATE OF NEW YORK

185

2019-2020 Regular Sessions

## IN ASSEMBLY

(Prefiled)

January 9, 2019

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 This outdated transmission system is leading to  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 trau-  
8 matic weather events have highlighted the unreliability and uncertainty  
9 of our current system. Investments to modernize the state's infrastruc-  
10 ture 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 utili-  
16 ty and customer needs. In the short term, utilities should pursue estab-  
17 lished 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  
24 longer in that workforce by 2017. Workforce recruitment campaigns devel-  
25 oped by utilities, in conjunction with training facilities that provide  
26 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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1 attract knowledgeable workers who will be instrumental in the implemen-  
2 tation of a modernized electric grid.

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

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

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

11 § 66-p. Establishment of grid modernization program. 1. Definitions.  
12 As used in this section: (a) "Electric transmission and distribution  
13 company" or "transmission and distribution company" shall be known as an  
14 investor-owned utility having annual revenues in excess of two hundred  
15 million dollars that transmits and distributes electricity within this  
16 state or a municipality that distributes electricity and receives less  
17 than its entire electric supply from the power authority of the state of  
18 New York and is subject to the jurisdiction of the commission with  
19 respect to the regulation of the price of electricity.

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

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

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

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

33 (ii) Public power authorities; and

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

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

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

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

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

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

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

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

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

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

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

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

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

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

19 (xi) Advanced metering infrastructure.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

10 (i) residential and non-residential and small business utility rate-  
11 payer hardship programs;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

33 (ii) has completed an appropriate training program in the United  
34 States Army, Navy, Air Force, Marine Corps that is comparable to train-  
35 ing provided by the entities listed in subparagraph (i) of this para-  
36 graph;

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

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

44 A person may be employed or contracted by an electric or gas corpo-  
45 ration to perform the duties related to services required of one or more  
46 of the positions identified in this paragraph during the twelve month  
47 period immediately following successful completion of an educational  
48 program under subparagraph (i) of this paragraph, but may not continue  
49 to be employed or contracted with beyond that period without documenta-  
50 tion that the employee or contracted worker holds and maintains the  
51 certification required in subparagraph (i) of this paragraph.

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

1 associated with the continuing education requirements of this subpara-  
2 graph shall be the responsibility of the employer.

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

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

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

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

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

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

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

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

31 (ii) Public power authorities; and

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

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

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

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

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

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

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

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

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

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

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

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

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

14 (xi) Advanced metering infrastructure.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

37 (i) residential and non-residential and small business utility rate-  
38 payer hardship programs;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

18 (ii) annual commitments and expenditures.

19 § 7. Sections 1020-jj and 1020-kk and 1020-ll of the public authori-  
20 ties law, as renumbered by chapter 415 of the laws of 2017, are renum-  
21 bered sections 1020-kk, 1020-ll and 1020-mm and a new section 1020-jj is  
22 added to read as follows:

23 § 1020-jj. Establishment of grid modernization program. 1. Defi-  
24 nitions. As used in this section:

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

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

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

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

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

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

49 (ii) Public power authorities; and

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

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

1 transmission line approved by the federal energy regulatory commission  
2 in connection with a hydro-electric facility and other equipment neces-  
3 sary for electric transmission.

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

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

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

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

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

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

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

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

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

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

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

32 (xi) Advanced metering infrastructure.

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

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

46 (j) "Workforce development" shall mean training initiatives and  
47 curriculum sponsored by transmission and distribution companies and  
48 public power authorities that will ensure sufficient staffing to imple-  
49 ment the grid modernization programs. Such workforce development  
50 programs shall be undertaken through partnerships with state universi-  
51 ties, community colleges, boards of cooperative education and other  
52 entities accredited by the American National Standards Institute for the  
53 purposes of implementing grid modernization programs.

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

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

1 transmission and distribution coordinating council and the smart grid  
2 advisory council, shall approve a ten year grid modernization program.  
3 The authority may collaborate with one or more transmission and distrib-  
4 ution companies. The program established by the authority shall incorpo-  
5 rate, where feasible and practicable, full load municipal electric  
6 customers. Such program shall consist of:

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

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

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

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

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

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

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

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

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

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

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

54 (i) residential and non-residential and small business utility rate-  
55 payer hardship programs;

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

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

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

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

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

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

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

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

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

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

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

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

1 time employees and contracted workers through state universities, commu-  
2 nity colleges, boards of cooperative education and other entities  
3 accredited by the American National Standards Institute;

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

7 3. The grid modernization program shall promote the sustained and  
8 orderly development of the statewide electric power grid and protect  
9 ratepayers from significant retail electric price increases. The author-  
10 ity's grid modernization program shall:

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

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

25 (c) No later than July first, two thousand twenty-one, and every two  
26 years thereafter, the authority shall submit to the governor, the tempo-  
27 rary president of the senate, the speaker of the assembly, the chair of  
28 the senate committee on energy and telecommunications and the chair of  
29 the assembly committee on energy a comprehensive review of the program  
30 established pursuant to this section. The report, among other matters  
31 shall contain:

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

35 (ii) annual commitments and expenditures.

36 § 8. Article 7 of the rural electric cooperative law is renumbered  
37 article 8 and sections 70, 71 and 72 of such law are renumbered sections  
38 80, 81 and 82.

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

41 ARTICLE 7

42 ESTABLISHMENT OF GRID MODERNIZATION PROGRAM

43 Section 70. Establishment of grid modernization program.

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

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

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

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

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

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

12 (ii) Public power authorities; and

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

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

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

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

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

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

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

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

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

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

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

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

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

51 (xi) Advanced Metering Infrastructure.

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

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

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

9 (i) "Workforce development" shall mean training initiatives and  
10 curriculum sponsored by transmission and distribution companies and  
11 public power authorities that will ensure sufficient staffing to imple-  
12 ment the grid modernization programs. Such workforce development  
13 programs shall be undertaken through partnerships with state universi-  
14 ties, community colleges, boards of cooperative education and other  
15 entities accredited by the American National Standards Institute for the  
16 purposes of implementing grid modernization programs.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

18 (i) residential and non-residential and small business utility rate-  
19 payer hardship programs;

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

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

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

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

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

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

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

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

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

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

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

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

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

23 3. The grid modernization program shall promote the sustained and  
24 orderly development of the statewide electric power grid and protect  
25 ratepayers from significant retail electric price increases. A cooper-  
26 ative's grid modernization program shall:

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

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

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

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

51 (ii) annual commitments and expenditures.

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