

1                   **TITLE XIII—SMART GRID**

2   **SEC. 1301. STATEMENT OF POLICY ON MODERNIZATION OF**  
3                   **ELECTRICITY GRID.**

4           It is the policy of the United States to support the  
5 modernization of the Nation’s electricity transmission and  
6 distribution system to maintain a reliable and secure elec-  
7 tricity infrastructure that can meet future demand growth  
8 and to achieve each of the following, which together char-  
9 acterize a Smart Grid:

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

13                   (2) Dynamic optimization of grid operations  
14 and resources, with full cyber-security.

15                   (3) Deployment and integration of distributed  
16 resources and generation, including renewable re-  
17 sources.

18                   (4) Development and incorporation of demand  
19 response, demand-side resources, and energy-effi-  
20 ciency resources.

21                   (5) Deployment of “smart” technologies (real-  
22 time, automated, interactive technologies that opti-  
23 mize the physical operation of appliances and con-

1 consumer devices) for metering, communications con-  
2 cerning grid operations and status, and distribution  
3 automation.

4 (6) Integration of “smart” appliances and con-  
5 sumer devices.

6 (7) Deployment and integration of advanced  
7 electricity storage and peak-shaving technologies, in-  
8 cluding plug-in electric and hybrid electric vehicles,  
9 and thermal-storage air conditioning.

10 (8) Provision to consumers of timely informa-  
11 tion and control options.

12 (9) Development of standards for communica-  
13 tion and interoperability of appliances and equip-  
14 ment connected to the electric grid, including the in-  
15 frastructure serving the grid.

16 (10) Identification and lowering of unreasonable  
17 or unnecessary barriers to adoption of smart grid  
18 technologies, practices, and services.

19 **SEC. 1302. SMART GRID SYSTEM REPORT.**

20 The Secretary, acting through the Assistant Sec-  
21 retary of the Office of Electricity Delivery and Energy Re-  
22 liability (referred to in this section as the “OEDER”) and  
23 through the Smart Grid Task Force established in section  
24 1303, shall, after consulting with any interested individual  
25 or entity as appropriate, no later than one year after en-

1 actment, and every two years thereafter, report to Con-  
2 gress concerning the status of smart grid deployments na-  
3 tionwide and any regulatory or government barriers to  
4 continued deployment. The report shall provide the cur-  
5 rent status and prospects of smart grid development, in-  
6 cluding information on technology penetration, commu-  
7 nications network capabilities, costs, and obstacles. It may  
8 include recommendations for State and Federal policies or  
9 actions helpful to facilitate the transition to a smart grid.  
10 To the extent appropriate, it should take a regional per-  
11 spective. In preparing this report, the Secretary shall so-  
12 licit advice and contributions from the Smart Grid Advi-  
13 sory Committee created in section 1303; from other in-  
14 volved Federal agencies including but not limited to the  
15 Federal Energy Regulatory Commission (“Commission”),  
16 the National Institute of Standards and Technology (“In-  
17 stitute”), and the Department of Homeland Security; and  
18 from other stakeholder groups not already represented on  
19 the Smart Grid Advisory Committee.

20 **SEC. 1303. SMART GRID ADVISORY COMMITTEE AND SMART**  
21 **GRID TASK FORCE.**

22 (a) SMART GRID ADVISORY COMMITTEE.—

23 (1) ESTABLISHMENT.—The Secretary shall es-  
24 tablish, within 90 days of enactment of this Part, a  
25 Smart Grid Advisory Committee (either as an inde-

1       pendent entity or as a designated sub-part of a larg-  
2       er advisory committee on electricity matters). The  
3       Smart Grid Advisory Committee shall include eight  
4       or more members appointed by the Secretary who  
5       have sufficient experience and expertise to represent  
6       the full range of smart grid technologies and serv-  
7       ices, to represent both private and non-Federal pub-  
8       lic sector stakeholders. One member shall be ap-  
9       pointed by the Secretary to Chair the Smart Grid  
10      Advisory Committee.

11           (2) MISSION.—The mission of the Smart Grid  
12      Advisory Committee shall be to advise the Secretary,  
13      the Assistant Secretary, and other relevant Federal  
14      officials concerning the development of smart grid  
15      technologies, the progress of a national transition to  
16      the use of smart-grid technologies and services, the  
17      evolution of widely-accepted technical and practical  
18      standards and protocols to allow interoperability and  
19      inter-communication among smart-grid capable de-  
20      vices, and the optimum means of using Federal in-  
21      centive authority to encourage such progress.

22           (3) APPLICABILITY OF FEDERAL ADVISORY  
23      COMMITTEE ACT.—The Federal Advisory Committee  
24      Act (5 U.S.C. App.) shall apply to the Smart Grid  
25      Advisory Committee.

1 (b) SMART GRID TASK FORCE.—

2 (1) ESTABLISHMENT.—The Assistant Secretary  
3 of the Office of Electricity Delivery and Energy Reli-  
4 ability shall establish, within 90 days of enactment  
5 of this Part, a Smart Grid Task Force composed of  
6 designated employees from the various divisions of  
7 that office who have responsibilities related to the  
8 transition to smart-grid technologies and practices.  
9 The Assistant Secretary or his designee shall be  
10 identified as the Director of the Smart Grid Task  
11 Force. The Chairman of the Federal Energy Regu-  
12 latory Commission and the Director of the National  
13 Institute of Standards and Technology shall each  
14 designate at least one employee to participate on the  
15 Smart Grid Task Force. Other members may come  
16 from other agencies at the invitation of the Assistant  
17 Secretary or the nomination of the head of such  
18 other agency. The Smart Grid Task Force shall,  
19 without disrupting the work of the Divisions or Of-  
20 fices from which its members are drawn, provide an  
21 identifiable Federal entity to embody the Federal  
22 role in the national transition toward development  
23 and use of smart grid technologies.

24 (2) MISSION.—The mission of the Smart Grid  
25 Task Force shall be to insure awareness, coordina-

1       tion and integration of the diverse activities of the  
2       Office and elsewhere in the Federal government re-  
3       lated to smart-grid technologies and practices, in-  
4       cluding but not limited to: smart grid research and  
5       development; development of widely accepted smart-  
6       grid standards and protocols; the relationship of  
7       smart-grid technologies and practices to electric util-  
8       ity regulation; the relationship of smart-grid tech-  
9       nologies and practices to infrastructure development,  
10      system reliability and security; and the relationship  
11      of smart-grid technologies and practices to other fac-  
12      ets of electricity supply, demand, transmission, dis-  
13      tribution, and policy. The Smart Grid Task Force  
14      shall collaborate with the Smart Grid Advisory Com-  
15      mittee and other Federal agencies and offices. The  
16      Smart Grid Task Force shall meet at the call of its  
17      Director as necessary to accomplish its mission.

18      (c) AUTHORIZATION.—There are authorized to be ap-  
19      propriated for the purposes of this section such sums as  
20      are necessary to the Secretary to support the operations  
21      of the Smart Grid Advisory Committee and Smart Grid  
22      Task Force for each of fiscal years 2008 through 2020.

1 **SEC. 1304. SMART GRID TECHNOLOGY RESEARCH, DEVELOPMENT, AND DEMONSTRATION.**  
2

3 (a) POWER GRID DIGITAL INFORMATION TECHNOLOGY.—The Secretary, in consultation with the Federal  
4 Energy Regulatory Commission and other appropriate  
5 agencies, electric utilities, the States, and other stake-  
6 holders, shall carry out a program—

8 (1) to develop advanced techniques for meas-  
9 uring peak load reductions and energy-efficiency sav-  
10 ings from smart metering, demand response, distrib-  
11 uted generation, and electricity storage systems;

12 (2) to investigate means for demand response,  
13 distributed generation, and storage to provide ancil-  
14 lary services;

15 (3) to conduct research to advance the use of  
16 wide-area measurement and control networks, in-  
17 cluding data mining, visualization, advanced com-  
18 puting, and secure and dependable communications  
19 in a highly-distributed environment;

20 (4) to test new reliability technologies, including  
21 those concerning communications network capabili-  
22 ties, in a grid control room environment against a  
23 representative set of local outage and wide area  
24 blackout scenarios;

25 (5) to identify communications network capac-  
26 ity needed to implement advanced technologies.

1           (6) to investigate the feasibility of a transition  
2 to time-of-use and real-time electricity pricing;

3           (7) to develop algorithms for use in electric  
4 transmission system software applications;

5           (8) to promote the use of underutilized elec-  
6 tricity generation capacity in any substitution of  
7 electricity for liquid fuels in the transportation sys-  
8 tem of the United States; and

9           (9) in consultation with the Federal Energy  
10 Regulatory Commission, to propose interconnection  
11 protocols to enable electric utilities to access elec-  
12 tricity stored in vehicles to help meet peak demand  
13 loads.

14       (b) SMART GRID REGIONAL DEMONSTRATION INI-  
15 TIATIVE.—

16           (1) IN GENERAL.—The Secretary shall establish  
17 a smart grid regional demonstration initiative (re-  
18 ferred to in this subsection as the “Initiative”) com-  
19 posed of demonstration projects specifically focused  
20 on advanced technologies for use in power grid sens-  
21 ing, communications, analysis, and power flow con-  
22 trol. The Secretary shall seek to leverage existing  
23 smart grid deployments.

24           (2) GOALS.—The goals of the Initiative shall  
25 be—

1 (A) to demonstrate the potential benefits  
2 of concentrated investments in advanced grid  
3 technologies on a regional grid;

4 (B) to facilitate the commercial transition  
5 from the current power transmission and dis-  
6 tribution system technologies to advanced tech-  
7 nologies;

8 (C) to facilitate the integration of ad-  
9 vanced technologies in existing electric networks  
10 to improve system performance, power flow con-  
11 trol, and reliability;

12 (D) to demonstrate protocols and stand-  
13 ards that allow for the measurement and valida-  
14 tion of the energy savings and fossil fuel emis-  
15 sion reductions associated with the installation  
16 and use of energy efficiency and demand re-  
17 sponse technologies and practices; and

18 (E) to investigate differences in each re-  
19 gion and regulatory environment regarding best  
20 practices in implementing smart grid tech-  
21 nologies.

22 (3) DEMONSTRATION PROJECTS.—

23 (A) IN GENERAL.—In carrying out the ini-  
24 tiative, the Secretary shall carry out smart grid  
25 demonstration projects in up to 5 electricity

1 control areas, including rural areas and at least  
2 1 area in which the majority of generation and  
3 transmission assets are controlled by a tax-ex-  
4 empt entity.

5 (B) COOPERATION.—A demonstration  
6 project under subparagraph (A) shall be carried  
7 out in cooperation with the electric utility that  
8 owns the grid facilities in the electricity control  
9 area in which the demonstration project is car-  
10 ried out.

11 (C) FEDERAL SHARE OF COST OF TECH-  
12 NOLOGY INVESTMENTS.—The Secretary shall  
13 provide to an electric utility described in sub-  
14 paragraph (B) financial assistance for use in  
15 paying an amount equal to not more than 50  
16 percent of the cost of qualifying advanced grid  
17 technology investments made by the electric  
18 utility to carry out a demonstration project.

19 (D) INELIGIBILITY FOR GRANTS.—No per-  
20 son or entity participating in any demonstration  
21 project conducted under this subsection shall be  
22 eligible for grants under section 1306 for other-  
23 wise qualifying investments made as part of  
24 that demonstration project.

1 (c) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated—

3 (1) to carry out subsection (a), such sums as  
4 are necessary for each of fiscal years 2008 through  
5 2012; and

6 (2) to carry out subsection (b), \$100,000,000  
7 for each of fiscal years 2008 through 2012.

8 **SEC. 1305. SMART GRID INTEROPERABILITY FRAMEWORK.**

9 (a) INTEROPERABILITY FRAMEWORK.—The Director  
10 of the National Institute of Standards and Technology  
11 shall have primary responsibility to coordinate the develop-  
12 ment of a framework that includes protocols and model  
13 standards for information management to achieve inter-  
14 operability of smart grid devices and systems. Such proto-  
15 cols and standards shall further align policy, business, and  
16 technology approaches in a manner that would enable all  
17 electric resources, including demand-side resources, to  
18 contribute to an efficient, reliable electricity network. In  
19 developing such protocols and standards—

20 (1) the Director shall seek input and coopera-  
21 tion from the Commission, OEDER and its Smart  
22 Grid Task Force, the Smart Grid Advisory Com-  
23 mittee, other relevant Federal and State agencies;  
24 and

1           (2) the Director shall also solicit input and co-  
2           operation from private entities interested in such  
3           protocols and standards, including but not limited to  
4           the Gridwise Architecture Council, the International  
5           Electrical and Electronics Engineers, the National  
6           Electric Reliability Organization recognized by the  
7           Federal Energy Regulatory Commission, and Na-  
8           tional Electrical Manufacturer's Association.

9           (b) SCOPE OF FRAMEWORK.—The framework devel-  
10          oped under subsection (a) shall be flexible, uniform and  
11          technology neutral, including but not limited to tech-  
12          nologies for managing smart grid information, and de-  
13          signed—

14                 (1) to accommodate traditional, centralized gen-  
15                 eration and transmission resources and consumer  
16                 distributed resources, including distributed genera-  
17                 tion, renewable generation, energy storage, energy  
18                 efficiency, and demand response and enabling de-  
19                 vices and systems;

20                 (2) to be flexible to incorporate—

21                         (A) regional and organizational differences;

22                         and

23                         (B) technological innovations;

24                 (3) to consider the use of voluntary uniform  
25                 standards for certain classes of mass-produced elec-

1       tric appliances and equipment for homes and busi-  
2       nesses that enable customers, at their election and  
3       consistent with applicable State and Federal laws,  
4       and are manufactured with the ability to respond to  
5       electric grid emergencies and demand response sig-  
6       nals by curtailing all, or a portion of, the electrical  
7       power consumed by the appliances or equipment in  
8       response to an emergency or demand response sig-  
9       nal, including through—

10               (A) load reduction to reduce total electrical  
11               demand;

12               (B) adjustment of load to provide grid an-  
13               cillary services; and

14               (C) in the event of a reliability crisis that  
15               threatens an outage, short-term load shedding  
16               to help preserve the stability of the grid; and

17               (4) such voluntary standards should incorporate  
18               appropriate manufacturer lead time.

19       (c) **TIMING OF FRAMEWORK DEVELOPMENT.**—The  
20       Institute shall begin work pursuant to this section within  
21       60 days of enactment. The Institute shall provide and pub-  
22       lish an initial report on progress toward recommended or  
23       consensus standards and protocols within one year after  
24       enactment, further reports at such times as developments  
25       warrant in the judgment of the Institute, and a final re-

1 port when the Institute determines that the work is com-  
2 pleted or that a Federal role is no longer necessary.

3 (d) **STANDARDS FOR INTEROPERABILITY IN FED-**  
4 **ERAL JURISDICTION.**—At any time after the Institute’s  
5 work has led to sufficient consensus in the Commission’s  
6 judgment, the Commission shall develop, by rule, such  
7 standards and protocols as may be necessary to insure  
8 smart-grid functionality and interoperability in interstate  
9 transmission of electric power, and regional and wholesale  
10 electricity markets.

11 (e) **AUTHORIZATION.**—There are authorized to be ap-  
12 propriated for the purposes of this section \$5,000,000 to  
13 the Institute to support the activities required by this sub-  
14 section for each of fiscal years 2008 through 2012.

15 **SEC. 1306. FEDERAL MATCHING FUND FOR SMART GRID IN-**  
16 **VESTMENT COSTS.**

17 (a) **MATCHING FUND.**—The Secretary shall establish  
18 a Smart Grid Investment Matching Grant Program to  
19 provide reimbursement of one-fifth (20 percent) of quali-  
20 fying Smart Grid investments.

21 (b) **QUALIFYING INVESTMENTS.**—Qualifying Smart  
22 Grid investments may include any of the following made  
23 on or after the date of enactment of this Act:

24 (1) In the case of appliances covered for pur-  
25 poses of establishing energy conservation standards

1 under part B of title III of the Energy Policy and  
2 Conservation Act of 1975 (42 U.S.C. 6291 et seq.),  
3 the documented expenditures incurred by a manu-  
4 facturer of such appliances associated with pur-  
5 chasing or designing, creating the ability to manu-  
6 facture, and manufacturing and installing for one  
7 calendar year, internal devices that allow the appli-  
8 ance to engage in Smart Grid functions.

9 (2) In the case of specialized electricity-using  
10 equipment, including motors and drivers, installed in  
11 industrial or commercial applications, the docu-  
12 mented expenditures incurred by its owner or its  
13 manufacturer of installing devices or modifying that  
14 equipment to engage in Smart Grid functions.

15 (3) In the case of transmission and distribution  
16 equipment fitted with monitoring and communica-  
17 tions devices to enable smart grid functions, the docu-  
18 mented expenditures incurred by the electric utility  
19 to purchase and install such monitoring and commu-  
20 nications devices.

21 (4) In the case of metering devices, sensors,  
22 control devices, and other devices integrated with  
23 and attached to an electric utility system or retail  
24 distributor or marketer of electricity that are capa-  
25 ble of engaging in Smart Grid functions, the docu-

1       mented expenditures incurred by the electric utility,  
2       distributor, or marketer and its customers to pur-  
3       chase and install such devices.

4           (5) In the case of software that enables devices  
5       or computers to engage in Smart Grid functions, the  
6       documented purchase costs of the software.

7           (6) In the case of entities that operate or co-  
8       ordinate operations of regional electric grids, the  
9       documented expenditures for purchasing and install-  
10      ing such equipment that allows Smart Grid func-  
11      tions to operate and be combined or coordinated  
12      among multiple electric utilities and between that re-  
13      gion and other regions.

14          (7) In the case of persons or entities other than  
15      electric utilities owning and operating a distributed  
16      electricity generator, the documented expenditures of  
17      enabling that generator to be monitored, controlled,  
18      or otherwise integrated into grid operations and elec-  
19      tricity flows on the grid utilizing Smart Grid func-  
20      tions.

21          (8) In the case of electric or hybrid-electric ve-  
22      hicles, the documented expenses for devices that  
23      allow the vehicle to engage in Smart Grid functions  
24      (but not the costs of electricity storage for the vehi-  
25      cle).

1           (9) The documented expenditures related to  
2           purchasing and implementing Smart Grid functions  
3           in such other cases as the Secretary shall identify.  
4           In making such grants, the Secretary shall seek to  
5           reward innovation and early adaptation, even if suc-  
6           cess is not complete, rather than deployment of  
7           proven and commercially viable technologies.

8           (c) INVESTMENTS NOT INCLUDED.—Qualifying  
9           Smart Grid investments do not include any of the fol-  
10          lowing:

11           (1) Investments or expenditures for Smart Grid  
12           technologies, devices, or equipment that are eligible  
13           for specific tax credits or deductions under the In-  
14           ternal Revenue Code, as amended.

15           (2) Expenditures for electricity generation,  
16           transmission, or distribution infrastructure or equip-  
17           ment not directly related to enabling Smart Grid  
18           functions.

19           (3) After the final date for State consideration  
20           of the Smart Grid Information Standard under sec-  
21           tion 1307 (paragraph (17) of section 111(d) of the  
22           Public Utility Regulatory Policies Act of 1978), an  
23           investment that is not in compliance with such  
24           standard.

1           (4) After the development and publication by  
2 the Institute of protocols and model standards for  
3 interoperability of smart grid devices and tech-  
4 nologies, an investment that fails to incorporate any  
5 of such protocols or model standards.

6           (5) Expenditures for physical interconnection of  
7 generators or other devices to the grid except those  
8 that are directly related to enabling Smart Grid  
9 functions.

10          (6) Expenditures for ongoing salaries, benefits,  
11 or personnel costs not incurred in the initial installa-  
12 tion, training, or start up of smart grid functions.

13          (7) Expenditures for travel, lodging, meals or  
14 other personal costs.

15          (8) Ongoing or routine operation, billing, cus-  
16 tomer relations, security, and maintenance expendi-  
17 tures.

18          (9) Such other expenditures that the Secretary  
19 determines not to be Qualifying Smart Grid Invest-  
20 ments by reason of the lack of the ability to perform  
21 Smart Grid functions or lack of direct relationship  
22 to Smart Grid functions.

23          (d) SMART GRID FUNCTIONS.—The term “smart  
24 grid functions” means any of the following:

1           (1) The ability to develop, store, send and re-  
2           ceive digital information concerning electricity use,  
3           costs, prices, time of use, nature of use, storage, or  
4           other information relevant to device, grid, or utility  
5           operations, to or from or by means of the electric  
6           utility system, through one or a combination of de-  
7           vices and technologies.

8           (2) The ability to develop, store, send and re-  
9           ceive digital information concerning electricity use,  
10          costs, prices, time of use, nature of use, storage, or  
11          other information relevant to device, grid, or utility  
12          operations to or from a computer or other control  
13          device.

14          (3) The ability to measure or monitor electricity  
15          use as a function of time of day, power quality char-  
16          acteristics such as voltage level, current, cycles per  
17          second, or source or type of generation and to store,  
18          synthesize or report that information by digital  
19          means.

20          (4) The ability to sense and localize disruptions  
21          or changes in power flows on the grid and commu-  
22          nicate such information instantaneously and auto-  
23          matically for purposes of enabling automatic protec-  
24          tive responses to sustain reliability and security of  
25          grid operations.

1           (5) The ability to detect, prevent, communicate  
2 with regard to, respond to, or recover from system  
3 security threats, including cyber-security threats and  
4 terrorism, using digital information, media, and de-  
5 vices.

6           (6) The ability of any appliance or machine to  
7 respond to such signals, measurements, or commu-  
8 nications automatically or in a manner programmed  
9 by its owner or operator without independent human  
10 intervention.

11           (7) The ability to use digital information to op-  
12 erate functionalities on the electric utility grid that  
13 were previously electro-mechanical or manual.

14           (8) The ability to use digital controls to manage  
15 and modify electricity demand, enable congestion  
16 management, assist in voltage control, provide oper-  
17 ating reserves, and provide frequency regulation.

18           (9) Such other functions as the Secretary may  
19 identify as being necessary or useful to the operation  
20 of a Smart Grid.

21 (e) The Secretary shall—

22           (1) establish and publish in the Federal Reg-  
23 ister, within one year after the enactment of this Act  
24 procedures by which applicants who have made  
25 qualifying Smart Grid investments can seek and ob-

1       tain reimbursement of one-fifth of their documented  
2       expenditures;

3           (2) establish procedures to ensure that there is  
4       no duplication or multiple reimbursement for the  
5       same investment or costs, that the reimbursement  
6       goes to the party making the actual expenditures for  
7       Qualifying Smart Grid Investments, and that the  
8       grants made have significant effect in encouraging  
9       and facilitating the development of a smart grid;

10          (3) maintain public records of reimbursements  
11       made, recipients, and qualifying Smart Grid invest-  
12       ments which have received reimbursements;

13          (4) establish procedures to provide, in cases  
14       deemed by the Secretary to be warranted, advance  
15       payment of moneys up to the full amount of the pro-  
16       jected eventual reimbursement, to creditworthy ap-  
17       plicants whose ability to make Qualifying Smart  
18       Grid Investments may be hindered by lack of initial  
19       capital, in lieu of any later reimbursement for which  
20       that applicant qualifies, and subject to full return of  
21       the advance payment in the event that the Quali-  
22       fying Smart Grid investment is not made; and

23          (5) have and exercise the discretion to deny  
24       grants for investments that do not qualify in the  
25       reasonable judgment of the Secretary.

1 (f) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated to the Secretary such  
3 sums as are necessary for the administration of this sec-  
4 tion and the grants to be made pursuant to this section  
5 for fiscal years 2008 through 2012.

6 **SEC. 1307. STATE CONSIDERATION OF SMART GRID.**

7 (a) Section 111(d) of the Public Utility Regulatory  
8 Policies Act of 1978 (16 U.S.C. 2621(d)) is amended by  
9 adding at the end the following:

10 “(16) CONSIDERATION OF SMART GRID INVEST-  
11 MENTS.—

12 “(A) IN GENERAL.—Each State shall con-  
13 sider requiring that, prior to undertaking in-  
14 vestments in nonadvanced grid technologies, an  
15 electric utility of the State demonstrate to the  
16 State that the electric utility considered an in-  
17 vestment in a qualified smart grid system based  
18 on appropriate factors, including—

19 “(i) total costs;

20 “(ii) cost-effectiveness;

21 “(iii) improved reliability;

22 “(iv) security;

23 “(v) system performance; and

24 “(vi) societal benefit.

1           “(B) RATE RECOVERY.—Each State shall  
2           consider authorizing each electric utility of the  
3           State to recover from ratepayers any capital,  
4           operating expenditure, or other costs of the  
5           electric utility relating to the deployment of a  
6           qualified smart grid system, including a reason-  
7           able rate of return on the capital expenditures  
8           of the electric utility for the deployment of the  
9           qualified smart grid system.

10           “(C) OBSOLETE EQUIPMENT.—Each State  
11           shall consider authorizing any electric utility or  
12           other party of the State to deploy a qualified  
13           smart grid system to recover in a timely man-  
14           ner the remaining book-value costs of any  
15           equipment rendered obsolete by the deployment  
16           of the qualified smart grid system, based on the  
17           remaining depreciable life of the obsolete equip-  
18           ment.

19           “(17) SMART GRID INFORMATION.—

20           “(A) STANDARD.—All electricity pur-  
21           chasers shall be provided direct access, in writ-  
22           ten or electronic machine-readable form as ap-  
23           propriate, to information from their electricity  
24           provider as provided in subparagraph (B).

1           “(B) INFORMATION.—Information pro-  
2           vided under this section, to the extent prac-  
3           ticable, shall include:

4                   “(i) PRICES.—Purchasers and other  
5                   interested persons shall be provided with  
6                   information on—

7                           “(I) time-based electricity prices  
8                           in the wholesale electricity market;  
9                           and

10                           “(II) time-based electricity retail  
11                           prices or rates that are available to  
12                           the purchasers.

13                   “(ii) USAGE.—Purchasers shall be  
14                   provided with the number of electricity  
15                   units, expressed in kwh, purchased by  
16                   them.

17                           “(iii) INTERVALS AND PROJEC-  
18                           TIONS.—Updates of information on prices  
19                           and usage shall be offered on not less than  
20                           a daily basis, shall include hourly price and  
21                           use information, where available, and shall  
22                           include a day-ahead projection of such  
23                           price information to the extent available.

24                   “(iv) SOURCES.—Purchasers and  
25                   other interested persons shall be provided

1           annually with written information on the  
2           sources of the power provided by the util-  
3           ity, to the extent it can be determined, by  
4           type of generation, including greenhouse  
5           gas emissions associated with each type of  
6           generation, for intervals during which such  
7           information is available on a cost-effective  
8           basis.

9           “(C) ACCESS.—Purchasers shall be able to  
10          access their own information at any time  
11          through the internet and on other means of  
12          communication elected by that utility for Smart  
13          Grid applications. Other interested persons  
14          shall be able to access information not specific  
15          to any purchaser through the Internet. Infor-  
16          mation specific to any purchaser shall be pro-  
17          vided solely to that purchaser.”.

18          (b) COMPLIANCE.—

19                 (1) TIME LIMITATIONS.—Section 112(b) of the  
20          Public Utility Regulatory Policies Act of 1978 (16  
21          U.S.C. 2622(b)) is amended by adding the following  
22          at the end thereof:

23                 “(6)(A) Not later than 1 year after the enact-  
24          ment of this paragraph, each State regulatory au-  
25          thority (with respect to each electric utility for which

1 it has ratemaking authority) and each nonregulated  
2 utility shall commence the consideration referred to  
3 in section 111, or set a hearing date for consider-  
4 ation, with respect to the standards established by  
5 paragraphs (17) through (18) of section 111(d).

6 “(B) Not later than 2 years after the date of  
7 the enactment of the this paragraph, each State reg-  
8 ulatory authority (with respect to each electric utility  
9 for which it has ratemaking authority), and each  
10 nonregulated electric utility, shall complete the con-  
11 sideration, and shall make the determination, re-  
12 ferred to in section 111 with respect to each stand-  
13 ard established by paragraphs (17) through (18) of  
14 section 111(d).”.

15 (2) FAILURE TO COMPLY.—Section 112(c) of  
16 the Public Utility Regulatory Policies Act of 1978  
17 (16 U.S.C. 2622(c)) is amended by adding the fol-  
18 lowing at the end:

19 “In the case of the standards established by para-  
20 graphs (16) through (19) of section 111(d), the reference  
21 contained in this subsection to the date of enactment of  
22 this Act shall be deemed to be a reference to the date of  
23 enactment of such paragraphs.”.

24 (3) PRIOR STATE ACTIONS.—Section 112(d) of  
25 the Public Utility Regulatory Policies Act of 1978

1 (16 U.S.C. 2622(d)) is amended by inserting “and  
2 paragraphs (17) through (18)” before “of section  
3 111(d)”.

4 **SEC. 1308. STUDY OF THE EFFECT OF PRIVATE WIRE LAWS**  
5 **ON THE DEVELOPMENT OF COMBINED HEAT**  
6 **AND POWER FACILITIES.**

7 (a) STUDY.—

8 (1) IN GENERAL.—The Secretary, in consulta-  
9 tion with the States and other appropriate entities,  
10 shall conduct a study of the laws (including regula-  
11 tions) affecting the siting of privately owned electric  
12 distribution wires on and across public rights-of-way.

13 (2) REQUIREMENTS.—The study under para-  
14 graph (1) shall include—

15 (A) an evaluation of—

16 (i) the purposes of the laws; and

17 (ii) the effect the laws have on the de-  
18 velopment of combined heat and power fa-  
19 cilities;

20 (B) a determination of whether a change  
21 in the laws would have any operating, reli-  
22 ability, cost, or other impacts on electric utili-  
23 ties and the customers of the electric utilities;  
24 and

25 (C) an assessment of—

1 (i) whether privately owned electric  
2 distribution wires would result in duplica-  
3 tive facilities; and

4 (ii) whether duplicative facilities are  
5 necessary or desirable.

6 (b) REPORT.—Not later than 1 year after the date  
7 of enactment of this Act, the Secretary shall submit to  
8 Congress a report that describes the results of the study  
9 conducted under subsection (a).

10 **SEC. 1309. DOE STUDY OF SECURITY ATTRIBUTES OF**  
11 **SMART GRID SYSTEMS.**

12 (a) DOE STUDY.—The Secretary shall, within 18  
13 months after the date of enactment of this Act, submit  
14 a report to Congress that provides a quantitative assess-  
15 ment and determination of the existing and potential im-  
16 pacts of the deployment of Smart Grid systems on improv-  
17 ing the security of the Nation’s electricity infrastructure  
18 and operating capability. The report shall include but not  
19 be limited to specific recommendations on each of the fol-  
20 lowing:

21 (1) How smart grid systems can help in making  
22 the Nation’s electricity system less vulnerable to dis-  
23 ruptions due to intentional acts against the system.

1           (2) How smart grid systems can help in restor-  
2           ing the integrity of the Nation's electricity system  
3           subsequent to disruptions.

4           (3) How smart grid systems can facilitate na-  
5           tionwide, interoperable emergency communications  
6           and control of the Nation's electricity system during  
7           times of localized, regional, or nationwide emer-  
8           gency.

9           (4) What risks must be taken into account that  
10          smart grid systems may, if not carefully created and  
11          managed, create vulnerability to security threats of  
12          any sort, and how such risks may be mitigated.

13          (b) CONSULTATION.—The Secretary shall consult  
14          with other Federal agencies in the development of the re-  
15          port under this section, including but not limited to the  
16          Secretary of Homeland Security, the Federal Energy Reg-  
17          ulatory Commission, and the Electric Reliability Organiza-  
18          tion certified by the Commission under section 215(c) of  
19          the Federal Power Act (16 U.S.C. 824o) as added by sec-  
20          tion 1211 of the Energy Policy Act of 2005 (Public Law  
21          109–58; 119 Stat. 941).