

# Union Calendar No. 192

110TH CONGRESS  
1ST SESSION

# H. R. 3237

[Report No. 110-305, Part I]

To facilitate the transition to a smart electricity grid.

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## IN THE HOUSE OF REPRESENTATIVES

JULY 31, 2007

Mr. BOUCHER (for himself and Mr. DINGELL) introduced the following bill; which was referred to the Committee on Energy and Commerce, and in addition to the Committee on Science and Technology, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

AUGUST 3, 2007

Reported from the Committee on Energy and Commerce

AUGUST 3, 2007

Committee on Science and Technology discharged; committed to the Committee of the Whole House on the State of the Union and ordered to be printed

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## A BILL

To facilitate the transition to a smart electricity grid.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

1 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

2 (a) SHORT TITLE.—This Act may be cited as the  
3 “Smart Grid Facilitation Act of 2007”.

4 (b) TABLE OF CONTENTS.—The table of contents for  
5 this Act is as follows:

Sec. 1. Short title; table of contents.

TITLE I—SMART GRID AND DEMAND RESPONSE

Subtitle A—Smart Grid

- Sec. 101. Statement of policy on modernization of electricity grid.
- Sec. 102. Grid Modernization Commission.
- Sec. 103. Grid assessment and report.
- Sec. 104. Federal matching fund for smart grid investment costs.
- Sec. 105. Smart Grid technology deployment.
- Sec. 106. Smart Grid Information Requirements.
- Sec. 107. State consideration of incentives for Smart Grid.
- Sec. 108. DOE study of security attributes of Smart Grid systems.

Subtitle B—Demand Response

- Sec. 111. Electricity sector demand response.

6 **TITLE I—SMART GRID AND**  
7 **DEMAND RESPONSE**  
8 **Subtitle A—Smart Grid**

9 **SEC. 101. STATEMENT OF POLICY ON MODERNIZATION OF**  
10 **ELECTRICITY GRID.**

11 (a) SMART GRID CHARACTERISTICS.—It is the policy  
12 of the United States to support the modernization of the  
13 Nation’s electricity transmission and distribution system  
14 to incorporate digital information and controls technology  
15 and to share real-time pricing information with electricity  
16 customers to achieve each of the following, which together  
17 characterize a smart grid:

1           (1) Increased reliability, security and efficiency  
2 of the electric grid.

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

5           (3) Deployment and integration of distributed  
6 resources and generation.

7           (4) Development and incorporation of demand  
8 response demand-side resources, and energy effi-  
9 ciency resources.

10          (5) Deployment of “smart” technologies for me-  
11 tering, communications concerning grid operations  
12 and status, and distribution automation.

13          (6) Integration of “smart” appliances and con-  
14 sumer devices.

15          (7) Deployment and integration of renewable  
16 energy resources, both to the grid and on the cus-  
17 tomer side of the electric meter.

18          (8) Deployment and integration of advanced  
19 electricity storage and peak-sharing technologies, in-  
20 cluding plug-in electric and hybrid electric vehicles,  
21 and thermal-storage air conditioning.

22          (9) Provision to consumers of new information  
23 and control options.

24          (10) Continual environmental improvement in  
25 electricity production and distribution.

1           (11) Enhanced capacity and efficiency of elec-  
2           tricity networks, reduction of line losses, and main-  
3           tenance of power quality.

4           (b) SUPPORT.—The Secretary of Energy and the  
5           Federal Energy Regulatory Commission and other Federal  
6           agencies as appropriate shall undertake programs to sup-  
7           port the development and demonstration of Smart Grid  
8           technologies and standards to maximize the achievement  
9           of these goals.

10          (c) BARRIERS.—It is further the policy of the United  
11          States that no State, State agency, or local government  
12          or instrumentality thereof should prohibit, or erect unrea-  
13          sonable barriers to, the deployment of smart grid tech-  
14          nologies on an electric utility’s distribution facilities, or  
15          unreasonably limit the services that may be provided using  
16          such technologies.

17          (d) INFORMATION.—It is further the policy of the  
18          United States that electricity purchasers are entitled to  
19          receive information about the varying value of electricity  
20          at different times and places, and that States shall not  
21          prohibit nor erect unreasonable barriers to the provision  
22          of such information flows to end users.

23       **SEC. 102. GRID MODERNIZATION COMMISSION.**

24          (a) ESTABLISHMENT AND MISSION.—

1           (1) ESTABLISHMENT.—The President shall es-  
2           tablish a Grid Modernization Commission composed  
3           of 9 members. Three members of the Commission  
4           shall be appointed by the President, and one each  
5           shall be appointed by the Speaker and minority lead-  
6           er of the United States House of Representatives  
7           and by the majority leader and minority leader of  
8           the United States Senate. Two members shall be ap-  
9           pointed by the President from among persons rec-  
10          ommended by an association representing State util-  
11          ity regulatory commissioners. The President shall  
12          designate one Commissioner to serve as Chairperson.

13          (2) MISSION.—The mission of the Grid Mod-  
14          ernization Commission shall be to facilitate the  
15          adoption of Smart Grid standards, technologies, and  
16          practices across the Nation’s electricity grid to the  
17          point of general adoption and ongoing market sup-  
18          port in the United States electric sector. The Com-  
19          mission shall be responsible for monitoring develop-  
20          ments, encouraging progress toward common stand-  
21          ards and protocols, identifying barriers and pro-  
22          posing solutions, coordinating with all Federal de-  
23          partments and agencies, and coordinating ap-  
24          proaches on smart grid implementation with States  
25          and local governmental authorities.

1 (b) MEMBERSHIP.—The members appointed to the  
2 Commission shall, collectively, have qualifications in elec-  
3 tric utility operations and infrastructure, digital informa-  
4 tion and control technologies, security, market develop-  
5 ment, finance and utility regulation, energy efficiency, de-  
6 mand response, renewable energy, and consumer protec-  
7 tion.

8 (c) AUTHORITIES TO INTERVENE.—The Commission  
9 shall have the authority to intervene and represent itself  
10 before the Federal Energy Regulatory Commission and  
11 other Federal and State agencies as it deems necessary  
12 to accomplish its mission.

13 (d) TERMS OF OFFICE.—The term of office of each  
14 Commissioner shall be 5 years, and any member may be  
15 reappointed for not more than one additional term of 5  
16 years.

17 (e) TERMINATION.—Unless extended by Act of Con-  
18 gress, the Commission shall complete its work and cease  
19 its activities by January 1, 2020, or on such earlier date  
20 that the Commission determines that the proliferation,  
21 evolution, and adaptation of Smart Grid technologies no  
22 longer require Federal leadership and assistance.

23 (f) COMPENSATION OF MEMBERS.—Each member of  
24 the Commission who is not an officer or employee of the  
25 Federal Government shall be compensated at a rate equal

1 to the daily equivalent of the annual rate of basic pay pre-  
2 scribed for level III of the Executive Schedule under sec-  
3 tion 5315 of title 5, United States Code, for each day (in-  
4 cluding travel time) during which such member is engaged  
5 in the performance of the duties of the Commission. All  
6 members of the Commission who are officers or employees  
7 of the United States shall serve without compensation in  
8 addition to that received for their services as officers or  
9 employees of the United States.

10 (g) TRAVEL EXPENSES.—The members of the Com-  
11 mission shall be allowed travel expenses, including per  
12 diem in lieu of subsistence, at rates authorized for employ-  
13 ees of agencies under subchapter I of chapter 57 of title  
14 5, United States Code, while away from their homes or  
15 regular places of business in the performance of services  
16 for the Commission.

17 (h) MEETINGS.—The Commission shall meet at the  
18 call of the Chairman. Commission meetings shall be open  
19 to the public, but as many as three Commissioners may  
20 meet in private without constituting a meeting requiring  
21 public access.

22 (i) APPLICABILITY OF FEDERAL ADVISORY COM-  
23 MITTEE ACT.—The Federal Advisory Committee Act (5  
24 U.S.C. App. 1 et seq.) shall not apply to the Commission.

1 (j) OFFICES AND STAFF.—The Secretary of Energy  
2 shall provide the Commission with offices in the Depart-  
3 ment of Energy and shall make available to the Commis-  
4 sion the expertise and staff resources of both the Office  
5 of Electricity Delivery and Energy Reliability and the Of-  
6 fice of Energy Efficiency and Renewable Energy.

7 (k) DETAIL OF GOVERNMENT EMPLOYEES.—Any  
8 Federal Government employee may be detailed to the  
9 Commission without reimbursement, and such detail shall  
10 be without interruption or loss of civil service status or  
11 privilege.

12 (l) EXECUTIVE DIRECTOR.—The Secretary of En-  
13 ergy shall appoint an officer of the Senior Executive Serv-  
14 ice to serve as Executive Director to the Commission.

15 (m) PROCUREMENT OF TEMPORARY AND INTERMIT-  
16 TENT SERVICES.—The Chairman of the Commission may  
17 procure temporary and intermittent services under section  
18 3109(b) of title 5, United States Code, at rates for individ-  
19 uals which do not exceed the daily equivalent of the annual  
20 rate of basic pay prescribed for level V of the Executive  
21 Schedule under section 5316 of such title.

22 (n) INFORMATION FROM FEDERAL AGENCIES.—The  
23 Commission may secure directly from any Federal depart-  
24 ment or agency such information as the Commission con-  
25 siders necessary to carry out this Act. Upon request of

1 the Chairman of the Commission, the head of such depart-  
2 ment or agency shall furnish such information to the Com-  
3 mission. The Commission shall maintain the same level of  
4 confidentiality for such information made available under  
5 this subsection as is required of the head of the depart-  
6 ment or agency from which the information was obtained.

7 (o) **POSTAL SERVICES.**—The Commission may use  
8 the United States mails in the same manner and under  
9 the same conditions as other departments and agencies of  
10 the Federal Government.

11 **SEC. 103. GRID ASSESSMENT AND REPORT.**

12 (a) **IN GENERAL.**—The Grid Modernization Commis-  
13 sion shall undertake, and update on a biannual basis, an  
14 assessment of the progress toward modernizing the elec-  
15 tric system from generation to ultimate electricity con-  
16 sumption, including implementation of “smart grid” tech-  
17 nologies. The Commission shall prepare this assessment  
18 with input from stakeholders including but not limited to  
19 electric utilities, other Federal offices, States, companies  
20 involved in developing related technologies, the National  
21 Electric Reliability Organization recognized by the Federal  
22 Energy Regulatory Commission, electricity customers, and  
23 persons with special related expertise. The assessment  
24 shall include each of the following:

1           (1) An updated inventory of existing smart grid  
2 systems.

3           (2) A description of the condition of existing  
4 grid infrastructure and procedures for determining  
5 the need for new infrastructure.

6           (3) A description of any plans of States, utili-  
7 ties, or others to introduce smart grid systems and  
8 technologies.

9           (4) An assessment of constraints to deployment  
10 of smart grid technology and most important oppor-  
11 tunities for doing so, including the readiness or lack  
12 thereof of enabling technologies.

13           (5) An assessment of remaining potential bene-  
14 fits resulting from introduction of smart grid sys-  
15 tems, including benefits related to demand-side effi-  
16 ciencies, improved reliability, improved security, re-  
17 duced prices, and improved integration of renewable  
18 resources.

19           (6) Recommendations for legislative or regu-  
20 latory changes to remove barriers to and create in-  
21 centives for smart grid system implementation and  
22 to meet the policy goals of this title.

23           (7) An estimate of the potential costs required  
24 for modernization of the electricity grid, with speci-  
25 ficity relative to geographic areas and components of

1 the grid, together with an assessment of whether the  
2 necessary funds would be available to meet such  
3 costs, and the sources of such funds.

4 (8) An assessment of ancillary benefits to other  
5 economic sectors or activities beyond the electricity  
6 sector, such as potential broadband service over  
7 power lines.

8 (9) An assessment of technologies, activities or  
9 opportunities in energy end use devices, customer  
10 premises, buildings, and power generation and stor-  
11 age devices that could accelerate or expand the im-  
12 pact and effectiveness of smart grid advances.

13 (10) An assessment of potential risks to per-  
14 sonal privacy, corporate confidentiality, and grid se-  
15 curity from the spread of smart grid technologies,  
16 and if so what additional measures and policies are  
17 needed to assure privacy and information protection  
18 for electric customers and grid partners, and cyber-  
19 security protection for extended grid systems.

20 (11) An assessment of the readiness of market  
21 forces to drive further implementation and evolution  
22 of “smart grid” technologies in the absence of gov-  
23 ernment leadership.

1           (12) Recommendations to the Secretary of En-  
2           ergy and other Federal officers on actions they  
3           should take to assist.

4           The Commission may request electric utilities to provide  
5           information relating to deployment and planned deploy-  
6           ment of smart grid systems and technologies. At the re-  
7           quest of the utility, the Commission shall maintain the  
8           confidentiality of utility-specific or specific security-related  
9           information. The Commission shall provide opportunities  
10          for input and comment by interested persons, including  
11          representatives of electricity consumers, Smart Grid tech-  
12          nology service providers, the electric utility industry, and  
13          State and local government.

14          (b) STATE AND REGIONAL ASSESSMENT AND RE-  
15          PORT.—States or groups of States are encouraged to par-  
16          ticipate in the development of State or region-specific com-  
17          ponents of the assessment and report under subsection  
18          (a). Such State-specific components may address the as-  
19          sessment and reporting criteria above but also may include  
20          but not be limited to any of the following:

21                  (1) Assessment of types of security threats to  
22                  electricity delivery.

23                  (2) Energy assurance and response plans to ad-  
24                  dress security threats.

1           (3) Plans for introduction of smart grid sys-  
2           tems and technologies over 3, 5, and 10 year plan-  
3           ning horizons.

4 The Commission may make grants to States that begin  
5 development of a State or Regional Plan within 180 days  
6 after the enactment of this Act to offset up to one-half  
7 of the costs required to develop such plans.

8           (c) SMART GRID REPORT.—Based on its completed  
9 initial assessment under subsection (a), the Commission  
10 shall submit a report to Congress and the President not  
11 later than 2 years after the date of enactment of this Act  
12 and subsequent reports every 2 years thereafter. Each re-  
13 port shall include recommendations to the President and  
14 to the Congress on actions necessary to modernize the  
15 electricity grid. The Commission shall annually update  
16 and revise its report and as well as conduct ongoing moni-  
17 toring and evaluation activities.

18           (d) CONSULTATION AND PUBLIC INPUT.—The Com-  
19 mission shall consult with the Secretary of Energy and  
20 the Federal Energy Regulatory Commission on technical  
21 issues associated with advanced electricity grid tech-  
22 nologies. The Commission shall to the extent feasible pro-  
23 vide for broad and frequent input from stakeholders and  
24 the general public

1 (e) INTEROPERABILITY PROTOCOLS AND MODEL  
2 STANDARDS FOR INFORMATION MANAGEMENT.—

3 (1) IN GENERAL.—The Grid Modernization  
4 Commission shall work with Smart Grid stake-  
5 holders to lead towards the earliest feasible develop-  
6 ment of flexible, uniform, and consensus protocols or  
7 model standards for information management among  
8 and interoperability of smart grid devices and sys-  
9 tems. Such protocols and model standards shall  
10 allow such devices to communicate and function over  
11 multiple technologies, including wireless, cable, sat-  
12 ellite, broadband-over-power line, and telephone.  
13 Such protocols and model standards should align  
14 policy, business, and technology approaches in a way  
15 that enables all electric resources, including demand  
16 side resources, to contribute to an efficient, reliable  
17 electricity network, on an automated basis, as appro-  
18 priate.

19 (2) SCOPE OF PROTOCOLS AND MODEL STAND-  
20 ARDS.—The protocols and model standards shall ac-  
21 commodate centralized and distributed generation,  
22 transmission and distribution resources, including  
23 advanced technologies to improve the efficiency and  
24 reliability of the electric power transmission and dis-  
25 tributions system, renewable generation, energy stor-

1 age, energy efficiency, and demand response and en-  
2 abling devices and systems.

3 (3) ESTABLISHMENT OF WORKING GROUP.—

4 Not later than 90 days after the date of enactment  
5 of this Act the Commission shall establish a working  
6 group comprised of electric industry experts, to be  
7 appointed by the Chairman, to assist in developing  
8 the protocols and model standards described in this  
9 subsection and guide the Federal participation in  
10 that process. Members appointed to the working  
11 group shall represent the various sectors of the elec-  
12 tricity industry, including sectors relating to the  
13 generation, transmission, distribution and end-user.

14 (4) DEVELOPMENT OF PROTOCOLS AND MODEL

15 STANDARDS.—In developing the protocols and model  
16 standards, the working group shall consult with ex-  
17 pert groups such as the Gridwise Architecture Coun-  
18 cil, the Institute of Electrical and Electronics Engi-  
19 neers, other electric industry groups, customer and  
20 manufacturer groups, and any appropriate Federal  
21 and State agencies. The proposed protocols and  
22 model standards shall be made available in the pub-  
23 lic domain, except to the extent they may allow or  
24 create threats to grid reliability and security.

1           (5) PROPOSAL FOR PROTOCOLS AND MODEL  
2 STANDARDS.—

3           (A) IN GENERAL.—Not later than 1 year  
4 after the date of enactment of this Act, the  
5 working group shall submit to the Commission  
6 recommendations concerning development of  
7 proposed protocols and model standards and  
8 recommendations for Federal support in the im-  
9 plementation of such protocols and model  
10 standards.

11           (B) REVIEW BY THE COMMISSION.—On re-  
12 ceipt of the recommendations under subpara-  
13 graph (A), the Commission shall take such ac-  
14 tion as necessary to encourage the adoption of  
15 the protocols and model standards and their im-  
16 plementation.

17           (C) PUBLICATION OF PROTOCOLS AND  
18 MODEL STANDARDS.—The Commission shall  
19 publish, not later than 3 years after the date of  
20 the enactment of this Act, and every two years  
21 thereafter, a report on the status of interoper-  
22 ability of smart grid technologies, and the avail-  
23 ability of protocols and model standards to  
24 allow such interoperability.

1 (f) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated to carry out the pur-  
3 poses of this section the sum of \$25,000,000 for each of  
4 the fiscal years 2008 through 2012, and such sums as may  
5 be necessary thereafter through fiscal year 2018.

6 **SEC. 104. FEDERAL MATCHING FUND FOR SMART GRID IN-**  
7 **VESTMENT COSTS.**

8 (a) MATCHING FUND.—The Secretary of Energy  
9 shall establish a Smart Grid Investment Matching Grant  
10 Program to provide reimbursement of one-fourth of quali-  
11 fying Smart Grid investments.

12 (b) QUALIFYING INVESTMENTS.—Qualifying Smart  
13 Grid investments may include any of the following made  
14 on or after the date of enactment of this Act:

15 (1) In the case of appliances covered for pur-  
16 poses of establishing energy conservation standards  
17 under part B of title III of the Energy Policy and  
18 Conservation Act of 1975 (42 U.S.C. 6291 and fol-  
19 lowing), the documented expenditures incurred by a  
20 manufacturer of such appliances associated with  
21 purchasing or designing, creating the ability to man-  
22 ufacture, and manufacturing and installing for one  
23 calendar year, internal devices that allow the appli-  
24 ance to engage in Smart Grid functions.

1           (2) In the case of specialized electricity-using  
2 equipment, including motors and drivers, installed in  
3 industrial or commercial applications, the docu-  
4 mented expenditures incurred by its owner or its  
5 manufacturer of installing devices or modifying that  
6 equipment to engage in Smart Grid functions.

7           (3) In the case of transmission and distribution  
8 equipment fitted with monitoring and communica-  
9 tions devices to enable smart grid functions, the doc-  
10 umented expenditures incurred by the electric utility  
11 to purchase and install such monitoring and commu-  
12 nications devices.

13           (4) In the case of metering devices, sensors,  
14 control devices, and other devices integrated with  
15 and attached to an electric utility system that are  
16 capable of engaging in Smart Grid functions, the  
17 documented expenditures incurred by the electric  
18 utility and its customers to purchase and install  
19 such devices.

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

23           (6) In the case of entities that operate or co-  
24 ordinate operations of regional electric grids, the  
25 documented expenditures for purchasing and install-

1 ing such equipment that allows Smart Grid func-  
2 tions to operate and be combined or coordinated  
3 among multiple electric utilities and between that re-  
4 gion and other regions.

5 (7) In the case of persons or entities other than  
6 electric utilities owning and operating a distributed  
7 electricity generator, the documented expenditures of  
8 enabling that generator to be monitored, controlled,  
9 or otherwise integrated into grid operations and elec-  
10 tricity flows on the grid utilizing Smart Grid func-  
11 tions.

12 (8) In the case of electric or hybrid-electric ve-  
13 hicles, the documented expenses for devices that  
14 allow the vehicle to engage in Smart Grid functions.

15 (9) The documented expenditures related to  
16 purchasing and implementing Smart Grid functions  
17 in such other cases as the Secretary of Energy shall  
18 identify. In making such grants, the Secretary shall  
19 seek to reward innovation and early adaptation, even  
20 if success is not complete, rather than deployment of  
21 proven and commercially viable technologies.

22 (c) INVESTMENTS NOT INCLUDED.—Qualifying  
23 Smart Grid investments do not include any of the fol-  
24 lowing:

1           (1) Expenditures for electricity generation,  
2           transmission, or distribution infrastructure or equip-  
3           ment not directly related to enabling Smart Grid  
4           functions.

5           (2) After the effective date of a standard under  
6           paragraph (21) of section 111(d) of the Public Util-  
7           ity Regulatory Policies Act of 1978 (relating to  
8           Smart Grid information), an investment that is not  
9           in compliance with such standard.

10          (3) After the development and publication by  
11          the Commission of protocols and model standards  
12          for interoperability of smart grid devices and tech-  
13          nologies, an investment that fails to incorporate any  
14          of such protocols or model standards.

15          (4) Expenditures for physical interconnection of  
16          generators or other devices to the grid except those  
17          that are directly related to enabling Smart Grid  
18          functions.

19          (5) Expenditures for ongoing salaries, benefits,  
20          or personnel costs not incurred in the initial installa-  
21          tion, training, or start up of smart grid functions.

22          (6) Expenditures for travel, lodging, meals or  
23          other personal costs.

1           (7) Ongoing or routine operation, billing, cus-  
2           tomer relations, security, and maintenance expendi-  
3           tures.

4           (8) Such other expenditures that the Secretary  
5           of Energy determines not to be Qualifying Smart  
6           Grid Investments by reason of the lack of the ability  
7           to perform smart grid functions or lack of direct re-  
8           lationship to smart grid functions.

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

11           (1) The ability to develop, store, send and re-  
12           ceive digital information concerning electricity use,  
13           costs, prices, time of use, nature of use, storage, or  
14           other information relevant to device, grid, or utility  
15           operations, to or from or by means of the electric  
16           utility system, through one or a combination of de-  
17           vices and technologies.

18           (2) The ability to develop, store, send and re-  
19           ceive digital information concerning electricity use,  
20           costs, prices, time or use, nature of use, storage, or  
21           other information relevant to device, grid, or utility  
22           operations to or from a computer or other control  
23           device.

24           (3) The ability to measure or monitor electricity  
25           use as a function of time of day, power quality char-

1       acteristics such as voltage level, current, cycles per  
2       second, or source or type of generation and to store,  
3       synthesize or report that information by digital  
4       means.

5               (4) The ability to sense and localize disruptions  
6       or changes in power flows on the grid and commu-  
7       nicate such information instantaneously and auto-  
8       matically for purposes of enabling automatic protec-  
9       tive responses to sustain reliability and security of  
10      grid operations.

11              (5) The ability to detect, prevent, communicate  
12      with regard to, respond to, or recover from system  
13      security threats, including cyber-security threats and  
14      terrorism, using digital information, media, and de-  
15      vices.

16              (6) The ability of any appliance or machine to  
17      respond to such signals, measurements, or commu-  
18      nications automatically or in a manner programmed  
19      by its owner or operator without independent human  
20      intervention.

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

24              (8) The ability to use digital controls to manage  
25      and modify electricity demand, enable congestion

1 management, assist in voltage control, provide oper-  
2 ating reserves, and provide frequency regulation.

3 (9) Such other functions as the Secretary of  
4 Energy may identify as being necessary or useful to  
5 the operation of a Smart Grid.

6 (e) OFFICE.—The Secretary of Energy shall—

7 (1) establish an Office to administer the Smart  
8 Grid Investment Grant Program, assuring that ex-  
9 pert resources from the Commission on Grid Mod-  
10 ernization, the Office of Energy Distribution and  
11 Electricity Reliability, and the Office of Energy Effi-  
12 ciency and Renewable Energy are fully available to  
13 advise on its administration and actions;

14 (2) appoint a Senior Executive Service officer  
15 to direct the Office, together with such personnel as  
16 are required to administer the Smart Grid Invest-  
17 ment Grant program;

18 (3) establish and publish in the Federal Reg-  
19 ister, within 180 days after the enactment of this  
20 Act procedures by which applicants who have made  
21 qualifying Smart Grid investments can seek and ob-  
22 tain reimbursement of one-fourth of their docu-  
23 mented expenditures;

24 (4) establish procedures to assure that there is  
25 no duplication or multiple reimbursement for the

1 same investment or costs, that the reimbursement  
2 goes to the party making the actual expenditures for  
3 Qualifying Smart Grid Investments, and that the  
4 grants made have significant effect in encouraging  
5 and facilitating the development of a smart grid;

6 (5) maintain public records of reimbursements  
7 made, recipients, and qualifying Smart Grid invest-  
8 ments which have received reimbursements;

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

19 (7) establish procedures to provide, in the event  
20 appropriated moneys in any year are insufficient to  
21 provide reimbursements for qualifying Smart Grid  
22 investments, that such reimbursement would be  
23 made in the next fiscal year or whenever funds are  
24 again sufficient, with the condition that the insuffi-  
25 ciency of funds to reimburse Qualifying Smart Grid

1 Investments from moneys appropriated for that pur-  
2 pose does not create a Federal obligation to that ap-  
3 plicant; and

4 (8) have and exercise the discretion to deny  
5 grants for investments that do not qualify in the  
6 reasonable judgement of the Secretary.

7 (f) AUTHORIZATION OF APPROPRIATIONS.—There  
8 are authorized to be appropriated to the Secretary of En-  
9 ergy the sums of—

10 (1) \$10,000,000 for each of fiscal years 2008  
11 through 2012 to provide for administration of the  
12 Smart Grid Investment Matching Fund; and

13 (2) \$250,000,000 for fiscal year 2008 and  
14 \$500,000,000 for each of fiscal years 2009 through  
15 2012 to provide reimbursements of one-fourth of  
16 Qualifying Smart Grid Investments.

17 **SEC. 105. SMART GRID TECHNOLOGY DEPLOYMENT.**

18 (a) POWER GRID DIGITAL INFORMATION TECH-  
19 NOLOGY.—The Secretary of Energy shall conduct pro-  
20 grams to—

21 (1) deploy advanced techniques for measuring  
22 peak load reductions and energy efficiency savings  
23 on customer premises from smart metering, demand  
24 response, distributed generation and electricity stor-  
25 age systems;

1           (2) implement means for demand response, dis-  
2           tributed generation, and storage to provide ancillary  
3           services;

4           (3) advance the use of wide-area measurement  
5           networks including data mining, visualization, ad-  
6           vanced computing, and secure and dependable com-  
7           munications in a highly distributed environment; and

8           (4) implement reliability technologies in a grid  
9           control room environment against a representative  
10          set of local outage and wide area blackout scenarios.

11          (b) SMART GRID REGIONAL DEMONSTRATION PRO-  
12          GRAM.—

13               (1) ESTABLISHMENT OF PROGRAM.—The Sec-  
14               retary of Energy shall establish a program of dem-  
15               onstration projects specifically focused on advanced  
16               technologies for power grid sensing, communications,  
17               analysis, and power flow control, including the inte-  
18               gration of demand-side resources into grid manage-  
19               ment. The goals of this program shall be to—

20                       (A) demonstrate the potential benefits of  
21                       concentrated investments in advanced grid tech-  
22                       nologies on a regional grid;

23                       (B) facilitate the commercial transition  
24                       from the current power transmission and dis-

1           tribution system technologies to advanced tech-  
2           nologies; and

3                   (C) facilitate the integration of advanced  
4           technologies in existing electric networks to im-  
5           prove system performance, power flow control  
6           and reliability.

7           (2) DEMONSTRATION PROJECTS.—The Sec-  
8           retary shall establish Smart Grid demonstration  
9           projects for not more than 5 electric utility systems  
10          of various types and sizes under this subsection.  
11          Such demonstration projects shall be undertaken in  
12          cooperation with the electric utility. Under such  
13          demonstration projects, financial assistance shall be  
14          available to cover not more than one-half of the  
15          qualifying Smart Grid technology investments made  
16          by the electric utility. Any project receiving financial  
17          assistance under this section shall not be eligible to  
18          receive financial assistance (including loan guaran-  
19          tees) under any other Federal program.

20          (c) AUTHORIZATION.—

21                   (1) POWER GRID DIGITAL INFORMATION TECH-  
22          NOLOGY PROGRAMS.—There are authorized to be ap-  
23          propriated to carry out subsection (a) such sums as  
24          are necessary for each of the fiscal years 2008  
25          through 2012.

1           (2) SMART GRID REGIONAL DEMONSTRATION  
2           PROGRAM.—There is authorized to be appropriated  
3           to carry out subsection (b) \$20,000,000 for each of  
4           the fiscal years 2008 through 2012.

5 **SEC. 106. SMART GRID INFORMATION REQUIREMENTS.**

6           (a) FINDINGS.—Congress finds that Smart Grid  
7 technologies will require, for their optimum use by elec-  
8 tricity consumers, that such consumers have access to in-  
9 formation on prices, use, and other factors in possession  
10 of their utilities or electricity suppliers, in order to assist  
11 the customers in optimizing their electricity use and lim-  
12 iting the associated environmental impacts.

13           (b) DEVELOPMENT OF RULES.—The Commission on  
14 Grid Modernization shall within one year of its initial  
15 meeting develop and declare a standard for the collection,  
16 presentation and delivery of information to electricity pur-  
17 chasers as required by the standard under section  
18 111(d)(21) of the Public Utility Regulatory Policies Act  
19 of 1978. Such standard shall provide purchasers with dif-  
20 ferent access options for such information. Such standard  
21 shall be developed with input from the Secretary of En-  
22 ergy, the Federal Energy Regulatory Commission, the Ad-  
23 ministrator of the Environmental Protection Agency,  
24 States, and stakeholders representing, but not limited to,  
25 electric utilities, energy efficiency and demand response

1 experts, environmental organizations and consumer orga-  
2 nizations.

3 (c) APPLICATION OF SMART GRID INFORMATION  
4 STANDARD TO FEDERAL ENTITIES AND WHOLESALE  
5 MARKETS.—Within 60 days of the declaration of the  
6 standard under subsection (b), the Federal Energy Regu-  
7 latory Commission shall propose a rule under which all  
8 public utilities, with respect to federally jurisdictional sales  
9 for resale of electricity in interstate commerce, and all ap-  
10 proved regional transmission organizations subject to its  
11 jurisdiction, will implement those elements of the Smart  
12 Grid information standard developed pursuant to this sec-  
13 tion that the Commission determines to be relevant and  
14 to add value for purchasers of wholesale power or those  
15 utilizing interstate transmission. The Tennessee Valley  
16 Authority, Bonneville Power Administration, and Federal  
17 power administrations shall, within 90 days of the adop-  
18 tion of a final rule by the Commission, adopt it for their  
19 own sales or transmission of electricity.

20 **SEC. 107. STATE CONSIDERATION OF INCENTIVES FOR**  
21 **SMART GRID.**

22 (a) CONSIDERATION OF ADDITIONAL STANDARDS.—  
23 Section 111(d) of the Public Utility Regulatory Policies  
24 Act of 1978 (16 U.S.C. 2621(d)) is amended by adding  
25 at the end:

1           “(18) UTILITY INVESTMENT IN SMART GRID IN-  
2           VESTMENTS.—Each electric utility shall prior to un-  
3           dertaking investments in non-advanced grid tech-  
4           nologies demonstrate that alternative investments in  
5           advanced grid technologies have been considered, in-  
6           cluding from a standpoint of cost-effectiveness,  
7           where such cost-effectiveness considers costs and  
8           benefits on a life-cycle basis.

9           “(19) UTILITY COST OF SMART GRID INVEST-  
10          MENTS.—Each electric utility shall be permitted  
11          to—

12                 “(A) recover from ratepayers the capital  
13                 and operating expenditures and other costs of  
14                 the utility for qualified smart grid system, in-  
15                 cluding a reasonable rate of return on the cap-  
16                 ital expenditures of the utility for a qualified  
17                 smart grid system, and

18                 “(B) recover in a timely manner the re-  
19                 maining book-value costs of equipment rendered  
20                 obsolete by the deployment of a qualified smart  
21                 grid system, based on the remaining depreciable  
22                 life of the obsolete equipment.

23           “(20) RATE DESIGN MODIFICATIONS TO PRO-  
24          MOTE ENERGY EFFICIENCY INVESTMENTS.—

1           “(A) IN GENERAL.—The rates allowed to  
2 be charged by any electric utility shall—

3           “(i) align utility incentives with the  
4 delivery of cost-effective energy efficiency;  
5 and

6           “(ii) promote energy efficiency invest-  
7 ments.

8           “(B) POLICY OPTIONS.—In complying with  
9 subparagraph (A), each State regulatory au-  
10 thority and each nonregulated utility shall con-  
11 sider—

12           “(i) removing the throughput incen-  
13 tive and other regulatory and management  
14 disincentives to energy efficiency;

15           “(ii) providing utility incentives for  
16 the successful management of energy effi-  
17 ciency programs;

18           “(iii) including the impact on adoption  
19 of energy efficiency as 1 of the goals of re-  
20 tail rate design, recognizing that energy ef-  
21 ficiency must be balanced with other objec-  
22 tives;

23           “(iv) adopting rate designs that en-  
24 courage energy efficiency for each cus-  
25 tomer class; and

1                   “(v) allowing timely recovery of en-  
2                   ergy efficiency-related costs.

3                   “(21) SMART GRID INFORMATION.—

4                   “(A) STANDARD.—All electricity pur-  
5                   chasers shall be provided direct access, both in  
6                   written and electronic machine-readable form,  
7                   to information from their electricity provider as  
8                   provided in subparagraph (B).

9                   “(B) INFORMATION.—Information pro-  
10                  vided under this section shall conform to the  
11                  standardized rules issued by the Commission on  
12                  Grid Modernization under section 106(b) of the  
13                  Smart Grid Facilitation Act of 2007 and shall  
14                  include:

15                  “(i) PRICES.—Purchasers and other  
16                  interested persons shall be provided with  
17                  information on—

18                          “(I) time-based electricity prices  
19                          in the wholesale electricity market;  
20                          and

21                          “(II) time-based electricity retail  
22                          prices or rates that are available to  
23                          the purchasers.

24                  “(ii) USAGE.—Purchasers shall be  
25                  provided with the number of electricity

1 units, expressed in kwh, purchased by  
2 them

3 “(iii) INTERVALS AND PROJEC-  
4 TIONS.—Updates of information on prices  
5 and usage shall be offered on not less than  
6 a daily basis, shall include hourly price and  
7 use information, where available, and shall  
8 include a day-ahead projection of such  
9 price information to the extent available.

10 “(iv) SOURCES.—Purchasers and  
11 other interested person shall be provided  
12 with written information on the sources of  
13 the power provided by the utility, to the  
14 extent it can be determined, by type of  
15 generation, including greenhouse gas emis-  
16 sions and criteria pollutants associated  
17 each type of generation, for intervals dur-  
18 ing which such information is available on  
19 a cost-effective basis, but not less than  
20 monthly.

21 “(C) ACCESS.—Purchasers shall be able to  
22 access their own information at any time  
23 through the internet and on other means of  
24 communication elected by that utility for Smart  
25 Grid applications. Other interested persons

1 shall be able to access information not specific  
2 to any purchaser through the Internet. Infor-  
3 mation specific to any purchaser shall be pro-  
4 vided solely to that purchaser.”.

5 (b) RECONSIDERATION OF CERTAIN STANDARDS.—  
6 Section 112 of the Public Utility Regulatory Policies Act  
7 of 1978 (16 U.S.C. 2622) is amended by adding the fol-  
8 lowing at the end thereof:

9 “(g) RECONSIDERATION OF PRIOR TIME-OF-DAY  
10 AND COMMUNICATION STANDARDS.—Not later than 1  
11 year after the enactment of this subsection, each State  
12 regulatory authority (with respect to each electric utility  
13 for which it has ratemaking authority) and each nonregu-  
14 lated utility shall commence a reconsideration under sec-  
15 tion 111, or set a hearing date for reconsideration, with  
16 respect to the standards established by paragraphs (3)  
17 and (14) of section 111(d) to take into account Smart  
18 Grid technologies. Not later than 2 years after the date  
19 of the enactment of this subsection, each State regulatory  
20 authority (with respect to each electric utility for which  
21 it has ratemaking authority), and each nonregulated elec-  
22 tric utility, shall complete the reconsideration, and shall  
23 make the determination, referred to in section 111 with  
24 respect to the standards established by paragraphs (3)  
25 and (14) of section 111(d).”.

1 (c) COMPLIANCE.—

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

6 “(6)(A) Not later than 1 year after the enact-  
7 ment of this paragraph, but not less than 3 years  
8 after the conclusion of any prior review of such  
9 standards, each State regulatory authority (with re-  
10 spect to each electric utility for which it has rate-  
11 making authority) and each nonregulated utility  
12 shall commence the consideration referred to in sec-  
13 tion 111, or set a hearing date for consideration,  
14 with respect to the standards established by para-  
15 graphs (18) through (20) of section 111(d). Not  
16 later than 6 months after the promulgation of rules  
17 by the Commission on Grid Modernization under  
18 section 106(b) of the Smart Grid Facilitation Act of  
19 2007, each State regulatory authority (with respect  
20 to each electric utility for which it has ratemaking  
21 authority) and each nonregulated utility shall com-  
22 mence the consideration referred to in section 111,  
23 or set a hearing date for consideration, with respect  
24 to the standard established by paragraph (21) of  
25 section 111(d).

1           “(B) Not later than 2 years after the date of  
2           the enactment of the this paragraph, but not less  
3           than 4 years after the conclusion of any prior review  
4           of such standard, each State regulatory authority  
5           (with respect to each electric utility for which it has  
6           ratemaking authority), and each nonregulated elec-  
7           tric utility, shall complete the consideration, and  
8           shall make the determination, referred to in section  
9           111 with respect to each standard established by  
10          paragraphs (18) through (20) of section 111(d). Not  
11          later than 18 months after the promulgation of rules  
12          by the Commission on Grid Modernization under  
13          section 106(b) of the Smart Grid Facilitation Act of  
14          2007 each State regulatory authority (with respect  
15          to each electric utility for which it has ratemaking  
16          authority), and each nonregulated electric utility,  
17          shall complete the consideration, and shall make the  
18          determination, referred to in section 111 with re-  
19          spect to each standard established by paragraph  
20          (21) of section 111(d).”.

21           (2) FAILURE TO COMPLY.—Section 112(c) of  
22          such Act is amended by adding the following at the  
23          end: “In the case of the standards established by  
24          paragraphs (18) through (21) of section 111(d), the  
25          reference contained in this subsection to the date of

1 enactment of this Act shall be deemed to be a ref-  
2 erence to the date of enactment of such para-  
3 graphs.”.

4 (3) PRIOR STATE ACTIONS.—Section 112(d) of  
5 such Act is amended by inserting “and paragraphs  
6 (18) through (20)” before “of such 111(d)”.

7 **SEC. 108. DOE STUDY OF SECURITY ATTRIBUTES OF SMART**  
8 **GRID SYSTEMS.**

9 (a) DOE STUDY.—The Secretary of Energy shall,  
10 within 6 months after the Grid Modernization Commission  
11 completes its first biennial assessment and report under  
12 section 103 of the Smart Grid Facilitation Act of 2007,  
13 submit a report to Congress that provides a quantitative  
14 assessment and determination of the existing and poten-  
15 tial impacts of the deployment of Smart Grid systems on  
16 improving the security of the Nation’s electricity infra-  
17 structure and operating capability. The report shall in-  
18 clude but not be limited to specific recommendations on  
19 each of the following:

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

23 (2) How smart grid systems can help in restor-  
24 ing the integrity of the Nation’s electricity system  
25 subsequent to disruptions.

1           (3) How smart grid systems can facilitate emer-  
2           gency communications and control of the Nation’s  
3           electricity system during times of localized or nation-  
4           wide emergency.

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

14           (c) FUNDING.—The Secretary shall fund demonstra-  
15 tion projects for the purpose of demonstrating the findings  
16 of the report under this section. Not more than  
17 \$10,000,000 are authorized to be appropriated for such  
18 projects.

## 19           **Subtitle B—Demand Response**

### 20           **SEC. 111. ELECTRICITY SECTOR DEMAND RESPONSE.**

21           (a) AMENDMENT OF NECPA.—Title V of the Na-  
22 tional Energy Conservation Policy Act (42 U.S.C. 8201  
23 and following) is amended by adding the following new  
24 part at the end thereof:

1           **“PART 5—PEAK DEMAND REDUCTION**

2   **“SEC. 571. DEFINITIONS.**

3           “(a) SECRETARY.—As used in this part, the term  
4 ‘Secretary’ means the Secretary of Energy.

5           “(b) FEDERAL AGENCY.—As used in this part, the  
6 term ‘Federal agency’ has the same meaning as provided  
7 by section 551 of this Act.

8   **“SEC. 572. FEDERAL ELECTRICITY PEAK DEMAND REDUC-**  
9                           **TION STANDARD.**

10           “(a) 2008 AGENCY ANNUAL ENERGY PLAN.—Each  
11 Federal agency shall prepare, and include in its annual  
12 report under section 548(a) of this Act, each of the fol-  
13 lowing:

14                   “(1) A determination of the agency’s aggregate  
15 electricity demand during the system peak hours for  
16 the utilities providing electricity service to its facili-  
17 ties during 2006 and 2007.

18                   “(2) A forecast for each year through 2018 of  
19 the projected growth in such peak demand in light  
20 of projected growth of facilities, staff, activities, elec-  
21 tric intensity of activities, and other relevant factors.

22           “(b) FEDERAL ELECTRICITY PEAK DEMAND REDUC-  
23 TION STANDARD.—

24                   “(1) IN GENERAL.—Except as provided in para-  
25 graph (2), for calendar year 2009 and each calendar  
26 year thereafter, each Federal agency shall reduce its

1 aggregate peak electricity demand or make such  
 2 amounts of electricity demand available in the form  
 3 of demand response, by the percentage amount spec-  
 4 ified in the Federal Electricity Peak Demand Reduc-  
 5 tion Standard set forth in the following table:

**“Federal Electricity Peak Demand Reduction Standard**

<b>Calendar Year</b>	<b>Reduction of Peak Demand Forecast</b>
2009 .....	2 percent of the peak demand forecast for cal- endar year 2009
2010 .....	4 percent of the peak demand forecast for cal- endar year 2010
2011 .....	6 percent of the peak demand forecast for cal- endar year 2011
2012 .....	8 percent of the peak demand forecast for cal- endar year 2012
2013 .....	10 percent of the peak demand forecast for cal- endar year 2013
2014 .....	12 percent of the peak demand forecast for cal- endar year 2014
2015 .....	14 percent of the peak demand forecast for cal- endar year 2015
2016 .....	16 percent of the peak demand forecast for cal- endar year 2016
2017 .....	18 percent of the peak demand forecast for cal- endar year 2017
2018 and each calendar year thereafter.	20 percent of the peak demand forecast for the applicable calendar year

6 In the table above, the term ‘forecast’ refers to the  
 7 forecast set forth in the 2008 report under section  
 8 548(a) of this Act as updated in accordance with  
 9 subsection in (c)(1)(C).

10 “(2) EXCEPTION.—The standard under this  
 11 subsection shall not apply to any activity of a Fed-  
 12 eral agency relating to defense or national security  
 13 if compliance with the standard would have an ad-  
 14 verse mission impact on the activity, as determined

1 by the Secretary of Defense or the Secretary of  
2 Homeland Security.

3 “(c) IMPLEMENTATION OF STANDARD.—

4 “(1) IN GENERAL.—Not later than January 1,  
5 2010, and each calendar year thereafter, each Fed-  
6 eral agency shall include in the annual energy plan  
7 of the Federal agency each of the following:

8 “(A) An assessment of whether the Fed-  
9 eral agency was in compliance with the stand-  
10 ard under subsection (b) for the preceding year.

11 “(B) A description of—

12 “(i) the method by which the Federal  
13 agency proposes to comply with the stand-  
14 ard for the following calendar year;

15 “(ii) the factors relied on by the head  
16 of the Federal agency in determining  
17 whether to participate in demand response  
18 programs offered by an electric utility or  
19 others during the preceding calendar year;  
20 and

21 “(iii) if the Federal agency did not  
22 participate in a demand response program  
23 offered by each utility providing electric  
24 service to facilities of the agency during  
25 the preceding calendar year, an expla-

1 nation for the decision by the head of the  
2 Federal agency to not participate.

3 “(C) An update of the agency’s prior fore-  
4 cast for the remaining years in the period until  
5 2018.

6 “(2) AVAILABILITY TO PUBLIC.—Not later than  
7 January 1, 2010, and each calendar year thereafter,  
8 the head of each Federal agency shall make available  
9 to the public a description of each provision included  
10 in the annual energy plan of the Federal agency de-  
11 scribed in subparagraphs (A) through (C) of para-  
12 graph (1).

13 “(d) MODIFICATIONS TO FEDERAL ENERGY MAN-  
14 AGEMENT PROGRAM.—The Secretary shall make any  
15 modification to the Federal Energy Management Program  
16 of the Department of Energy that the Secretary deter-  
17 mines to be necessary to—

18 “(1) incorporate the standard established under  
19 subsection (b) into the Federal Energy Management  
20 Program;

21 “(2) assist any Federal agency to comply with  
22 the standard established under subsection (b)  
23 through any appropriate means, including con-  
24 ducting 1 or more demonstration projects at Federal  
25 facilities.



1 include options for funding and/or incentives for the  
2 development of demand response resources. The  
3 Commission shall seek to take advantage of pre-  
4 existing research and ongoing work, and shall as-  
5 sume that there is no duplication of effort. The  
6 Commission shall further note any barriers to de-  
7 mand response programs that are flexible , non-dis-  
8 criminatory, and fairly compensatory for the services  
9 and benefits made available and shall provide rec-  
10 ommendations for overcoming such barriers.

11 “(b) NATIONAL ACTION PLAN ON DEMAND RE-  
12 SPONSE.—The Grid Modernization Commission shall fur-  
13 ther develop and implement a National Action Plan on De-  
14 mand Response. Such Plan shall be completed within one  
15 year after the completion of the National Assessment of  
16 Demand Response, and shall meet each of the following  
17 objectives:

18 “(1) Provision of adequate technical assistance  
19 to States to allow them to maximize the amount of  
20 demand response resources that can be developed  
21 and deployed.

22 “(2) Implementation of a national communica-  
23 tions program that includes broad-based customer  
24 education and support.

1           “(3) Development and dissemination of tools,  
2           information and other support mechanisms for use  
3           by customers, states, utilities and demand response  
4           providers.

5           “(c) AUTHORIZATION.—There are authorized to be  
6           appropriated to carry out this section not more than  
7           \$10,000,000 for each of the fiscal years 2008 and 2009  
8           and \$20,000,000 for each of the fiscal years 2010 through  
9           2020.

10       **“SEC. 574. REPORT ON ENVIRONMENTAL ATTRIBUTES AND**  
11                               **IMPACTS OF DEMAND RESPONSE AND SMART**  
12                               **GRID SYSTEMS.**

13           “(a) REPORT.—The Administrator of the Environ-  
14           mental Protection Agency shall solicit public input and,  
15           within 6 months after completion of the National Assess-  
16           ment of Demand Response required by section 573, sub-  
17           mit a report to Congress that addresses each of the fol-  
18           lowing:

19           “(1) A quantitative assessment and determina-  
20           tion of the existing and potential impacts of demand  
21           response and ‘smart grid’ systems on air emissions  
22           and air quality, including but not limited to carbon  
23           dioxide, oxides of nitrogen and oxides of sulfur.

24           “(2) An assessment and determination of the  
25           existing and potential impacts of demand response

1 and ‘smart grid’ systems on environmental param-  
2 eters other than emissions and air quality, including  
3 but not limited to:

4 “(A) Land use.

5 “(B) Water use.

6 “(C) Use of renewable energy.

7 “(D) Effect on energy sources other than  
8 electricity.

9 “(3) A detailed plan for how Energy Efficiency  
10 and Clean Energy programs administered by the  
11 Agency, including the Energy Star Program, will in-  
12 corporate and encourage end-use efficiency, demand  
13 response and ‘smart grid’ systems and technologies,  
14 including but not limited to each of the following:

15 “(A) Requirements that appliances and  
16 other equipment are capable of manually and  
17 automatically receiving and acting upon pricing  
18 and control information and or instructions pro-  
19 vided by the customer, a load serving entity or  
20 a third-party designated by the customer.

21 “(B) Requirements for time-based valu-  
22 ation of kilowatt hour reductions in planning  
23 and evaluation of energy efficiency programs.

24 “(C) Education and communication, in-  
25 cluding to state energy officials and state regu-

1           lators, that build awareness of demand response  
2           and smart grid systems and technologies and  
3           their existing and potential relationship to such  
4           Agency programs.

5           “(b) FUNDING.—There are authorized to be appro-  
6           priated to carry out this section for fiscal year 2010, to  
7           remain available until expended.”.

8           (b) TABLE OF CONTENTS.—The table of contents for  
9           such Act is amended by adding the following after the  
10          items relating to part 4 of title V:

“PART 5—PEAK DEMAND REDUCTION

“Sec. 571. Definitions.

“Sec. 572. Federal Electricity Peak Demand Reduction Standard.

“Sec. 573. National action plan for demand response.

“Sec. 574. Study of environmental attributes and impacts of demand response  
and smart grid systems.”.

Union Calendar No. 192

110<sup>TH</sup> CONGRESS  
1<sup>ST</sup> Session

**H. R. 3237**

[Report No. 110-305, Part I]

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**A BILL**

To facilitate the transition to a smart electricity grid.

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AUGUST 3, 2007

Committee on Science and Technology discharged; committed to the Committee of the Whole House on the State of the Union and ordered to be printed