

114TH CONGRESS
1ST SESSION

S. 1232

To amend the Energy Independence and Security Act of 2007 to modify provisions relating to smart grid modernization, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MAY 6, 2015

Mr. WYDEN introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

A BILL

To amend the Energy Independence and Security Act of 2007 to modify provisions relating to smart grid modernization, and for other purposes.

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

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Smart Grid Act of
5 2015”.

6 **SEC. 2. SMART GRID INTEROPERABILITY WORKING GROUP.**

7 Section 1303 of the Energy Independence and Secu-
8 rity Act of 2007 (42 U.S.C. 17383) is amended—

9 (1) by striking the section designation and
10 heading and inserting the following:

1 **“SEC. 1303. SMART GRID ADVISORY COMMITTEE; SMART**
2 **GRID TASK FORCE; SMART GRID INTEROPER-**
3 **ABILITY WORKING GROUP.”;**

4 (2) by redesignating subsection (c) as sub-
5 section (d);

6 (3) by inserting after subsection (b) the fol-
7 lowing:

8 “(c) SMART GRID INTEROPERABILITY WORKING
9 GROUP.—

10 “(1) ESTABLISHMENT.—Not later than 180
11 days after the date of enactment of this paragraph,
12 the Secretary, in collaboration with the National In-
13 stitute of Standards and Technology of the Depart-
14 ment of Commerce, the Institute of Electrical and
15 Electronics Engineers, and the Smart Grid Inter-
16 operability Panel, shall establish a working group, to
17 be known as the ‘Smart Grid Interoperability Work-
18 ing Group’—

19 “(A) to identify additional efforts the Fed-
20 eral Government can take to better promote the
21 establishment and adoption of open standards
22 that enhance connectivity and interoperability
23 on the electric grid;

24 “(B) to study the market and policy bar-
25 riers to deploying responsive appliances at
26 scale; and

1 “(C) to develop a plan for establishing and
2 promoting the widespread adoption of inter-
3 operability standards.

4 “(2) MEMBERSHIP.—The Smart Grid Inter-
5 operability Working Group shall include such rep-
6 resentatives as the Secretary determines to be ap-
7 propriate from—

8 “(A) appliance manufacturers;

9 “(B) utilities;

10 “(C) software providers;

11 “(D) energy efficiency and environmental
12 stakeholders; and

13 “(E) relevant Federal departments and
14 agencies.

15 “(3) REPORT.—Not later than 18 months after
16 the date of enactment of this paragraph, the Smart
17 Grid Interoperability Working Group shall submit to
18 the Secretary a report that describes the initial find-
19 ings and recommendations of the Smart Grid Inter-
20 operability Working Group, as described in para-
21 graph (1).”; and

22 (4) in subsection (d) (as redesignated by para-
23 graph (2)), by striking “and Smart Grid Task
24 Force” and inserting “, the Smart Grid Task Force,

1 and the Smart Grid Interoperability Working
2 Group”.

3 **SEC. 3. SMART GRID TECHNOLOGY RESEARCH, DEVELOP-**
4 **MENT, AND DEMONSTRATION PROGRAM POL-**
5 **ICY.**

6 Section 1304 of the Energy Independence and Secu-
7 rity Act of 2007 (42 U.S.C. 17384) is amended—

8 (1) in subsection (b)—

9 (A) in paragraph (1), in the second sen-
10 tence, by inserting “and lessons learned from
11 demonstration projects implemented under this
12 section” before the period at the end;

13 (B) in paragraph (2)—

14 (i) in subparagraph (D), by striking
15 “and” at the end;

16 (ii) in subparagraph (E), by striking
17 the period at the end and inserting “;
18 and”; and

19 (iii) by adding at the end the fol-
20 lowing:

21 “(F) to identify best practices for the im-
22 plementation of the Fair Information Practice
23 Principles (FIPPS) of the Federal Trade Com-
24 mission for the collection, use, disclosure, and

1 retention of individual customer information.”;
2 and

3 (C) in paragraph (3)—

4 (i) in subparagraph (A)—

5 (I) by striking the subparagraph
6 designation and heading and all that
7 follows through “the initiative” and
8 inserting the following:

9 “(A) FINANCIAL ASSISTANCE.—

10 “(i) IN GENERAL.—In carrying out
11 the Initiative, subject to clause (ii)”;

12 (II) by adding at the end the fol-
13 lowing:

14 “(ii) REQUIREMENT.—In selecting
15 smart grid demonstration projects to re-
16 ceive assistance under this subparagraph,
17 the Secretary shall ensure, to the max-
18 imum extent practicable—

19 “(I) geographical diversity; and

20 “(II) diversity among types of
21 electricity markets and regulatory en-
22 vironments.”;

23 (ii) by redesignating subparagraphs
24 (B) through (F) as subparagraphs (C)
25 through (G), respectively;

1 (iii) by inserting after subparagraph
2 (A) the following:

3 “(B) ADDITIONAL DEMONSTRATION
4 PROJECT FUNDING.—

5 “(i) IN GENERAL.—In carrying out
6 the Initiative, in addition to financial as-
7 sistance provided under subparagraph (A),
8 the Secretary shall provide grants, on a
9 competitive basis, for demonstration
10 projects in any of the following 7 program
11 areas:

12 “(I) TRANSACTIVE ENERGY.—
13 Projects that implement a system of
14 economic or control mechanisms that
15 optimizes the dynamic balance of sup-
16 ply and demand across the electrical
17 infrastructure, using economic value
18 as a key operational parameter.

19 “(II) INNOVATION IN VALUATION
20 OF NEW TECHNOLOGY GRID SERVICES
21 AND EFFICIENCY.—Projects that im-
22 plement innovative ways of valuing
23 the grid services provided by demand
24 response, energy efficiency, distributed

1 generation, electric vehicles, and stor-
2 age.

3 “(III) RATE DESIGN—DISTRIBU-
4 TION SYSTEM.—Projects that imple-
5 ment rates, such as 3-part rates, to
6 equitably ensure cost-recovery and the
7 reliability of the distribution grid,
8 while also supporting the increased
9 penetration of distributed generation,
10 storage, and electric vehicles.

11 “(IV) RATE DESIGN—CONSUMER
12 ACCEPTANCE OF TIME-BASED PRIC-
13 ING.—Projects that—

14 “(aa) study consumer adop-
15 tion of time-based retail elec-
16 tricity rates through the imple-
17 mentation of time-based rates, in
18 conjunction with randomized con-
19 trol trials; and

20 “(bb) may—

21 “(AA) provide to cus-
22 tomers a range of time-
23 based pricing options, as
24 well as options to adopt ena-
25 bling technology; and

1 “(BB) implement a het-
2 erogeneity of marketing and
3 outreach approaches.

4 “(V) ENERGY STORAGE.—
5 Projects that demonstrate innovative
6 approaches for using energy storage
7 for grid services, including—

8 “(aa) flexibility; and

9 “(bb) the integration of
10 intermittent renewable energy.

11 “(VI) SMART ELECTRIC VEHICLE
12 CHARGING.—Projects that—

13 “(aa) demonstrate innova-
14 tive approaches for integrating
15 electric vehicles into grid oper-
16 ations; or

17 “(bb) produce, test, and cer-
18 tify to IEEE/UL standards
19 bidirectional power electronics for
20 electric vehicles.

21 “(VII) OTHER PROGRAM AREA.—
22 Projects in 1 additional program area
23 that the Secretary may identify, by
24 regulation.

1 “(ii) PRIORITY REQUIREMENTS.—In
2 selecting demonstration projects to receive
3 grants under clause (i), the Secretary shall
4 give priority to—

5 “(I) for demonstration projects
6 described in subclause (I) of clause
7 (i), projects that—

8 “(aa) incorporate real-time
9 prices and technologies that allow
10 prices to be directly delivered to
11 end-user devices (an approach
12 commonly known as ‘prices to de-
13 vices’); or

14 “(bb) advance device visi-
15 bility in grid system operations;

16 “(II) for demonstration projects
17 described in subclause (II) of clause
18 (i), projects that address valuation of
19 ancillary services, capacity, and serv-
20 ices offered in price-responsive mar-
21 kets;

22 “(III) for demonstration projects
23 described in subclause (III) of clause
24 (i), projects that assess—

1 “(aa) the impact of the rates
2 described in that subclause on
3 customer electricity consumption
4 patterns;

5 “(bb) customer interest and
6 enrollment in the new rates;

7 “(cc) the impact of rates on
8 the economics of distributed gen-
9 eration and storage;

10 “(dd) the impact of rates on
11 consumer adoption patterns of
12 distributed generation and stor-
13 age; or

14 “(ee) the effectiveness of
15 various educational outreach
16 measures in presenting the rates
17 to customers;

18 “(IV) for demonstration projects
19 described in subclause (IV) of clause
20 (i), projects that—

21 “(aa) investigate the effects
22 on customer participation and
23 satisfaction rates of—

24 “(AA) choice architec-
25 ture, such as defaulting to

1 an opt-in, versus an opt-out,
2 program; and

3 “(BB) enabling tech-
4 nology; or

5 “(bb) demonstrate how the
6 lessons learned from the study
7 described in that subclause can
8 be used to develop a rate transi-
9 tion plan that facilitates signifi-
10 cant and lasting enrollment in
11 the new rates with a high degree
12 of customer satisfaction;

13 “(V) for demonstration projects
14 described in subclause (V) of clause
15 (i), projects that maximize—

16 “(aa) benefits to intermit-
17 tent renewable energy generation;
18 and

19 “(bb) the range of grid serv-
20 ices provided by storage; and

21 “(VI) for demonstration projects
22 described in subclause (VI) of clause
23 (i), projects that demonstrate methods
24 of—

1 “(aa) maximizing the grid
2 services provided by electric vehi-
3 cles; and

4 “(bb) minimizing load spikes
5 and grid costs associated with
6 electric vehicles.”;

7 (iv) in subparagraph (C) (as redesignig-
8 nated by clause (ii))—

9 (I) by striking “subparagraph
10 (A) shall be carried out” and inserting
11 the following: “subparagraph (A) or
12 (B) shall be—

13 “(i) carried out”;

14 (II) by striking the period at the
15 end and inserting “; and”; and

16 (III) by adding at the end the
17 following:

18 “(ii) given priority in selection for as-
19 sistance based on the extent to which the
20 project demonstrates strong collaboration
21 among—

22 “(I) State energy agencies;

23 “(II) State public utility and
24 public service commissions;

25 “(III) electric utilities;

1 “(IV) power aggregators; and

2 “(V) if applicable, independent
3 system operators, regional trans-
4 mission organizations, or wholesale
5 market operators.”;

6 (v) in subparagraph (D) (as redesign-
7 nated by clause (ii)), by striking “subpara-
8 graph (B)” and inserting “subparagraph
9 (C)”;

10 (vi) in subparagraph (E) (as redesign-
11 nated by clause (ii)), by striking the sub-
12 paragraph designation and heading and all
13 that follows through “No person” and in-
14 serting the following:

15 “(E) ELIGIBILITY FOR OTHER FUNDING.—

16 “(i) IN GENERAL.—A person or entity
17 that receives financial assistance for a
18 demonstration project in any program area
19 described in subparagraph (A) or any of
20 subclauses (I) through (VII) of subpara-
21 graph (B)(i) may be eligible to receive as-
22 sistance under any other such program
23 area, if the person or entity establishes to
24 the satisfaction of the Secretary a synergy
25 between the program areas.

1 “(ii) INELIGIBILITY.—No person”;

2 and

3 (vii) in subparagraph (F) (as redesignated by clause (ii))—

4 (I) in the first sentence, by striking
5 (I) in the first sentence, by striking
6 ing “The Secretary” and inserting the
7 following:

8 “(i) ESTABLISHMENT OF CLEARING-
9 HOUSE.—The Secretary”;

10 (II) by striking the second sen-
11 tence and inserting the following:

12 “(ii) PROVISION OF INFORMATION.—
13 As a condition of receiving financial assist-
14 ance under this subsection, a utility or
15 other participant in a smart grid dem-
16 onstration project shall provide such infor-
17 mation as the Secretary may require, to
18 become available through the smart grid
19 information clearinghouse and for purposes
20 of producing the reports described in sub-
21 clauses (IV) and (V) of clause (iv), in such
22 form and at such time as the Secretary
23 may require.”;

1 (III) in the third sentence, by
2 striking “The Secretary shall assure”
3 and inserting the following:

4 “(iii) PROTECTED INFORMATION.—
5 The Secretary shall ensure”; and

6 (IV) by adding at the end the fol-
7 lowing:

8 “(iv) WORKING GROUPS.—

9 “(I) ESTABLISHMENT.—For each
10 program area described in subpara-
11 graph (A) or any of subclauses (I)
12 through (VII) of subparagraph (B)(i),
13 the Secretary shall establish a work-
14 ing group, to be composed of rep-
15 resentatives of each project selected to
16 receive assistance within that program
17 area.

18 “(II) MEETINGS.—Each working
19 group established under subclause (I)
20 shall meet not less frequently than
21 once every 90 days.

22 “(III) PARTICIPATION RE-
23 QUIRED.—As a condition of receiving
24 financial assistance under this sub-
25 section, the owner or operator of a

1 demonstration project shall designate
2 a representative of the project to serve
3 as a member of the applicable working
4 group established under subclause (I),
5 including by attending each meeting
6 of the working group under subclause
7 (II).

8 “(IV) REPORTS.—Each working
9 group established under subclause (I)
10 shall submit to the Secretary reports
11 regarding the demonstrations projects
12 carried out by members of the work-
13 ing group, at such times and con-
14 taining such information as the Sec-
15 retary may require.

16 “(V) PUBLICATION.—The Sec-
17 retary shall periodically publish re-
18 ports and other appropriate informa-
19 tional materials for use, within each
20 program area described in subclause
21 (I), by—

22 “(aa) State regulators;

23 “(bb) wholesale market op-
24 erators;

25 “(cc) electric utilities; and

1 “(dd) such other individuals
2 and entities as the Secretary de-
3 termines to be appropriate.”; and

4 (2) by striking subsection (e) and inserting the
5 following:

6 “(e) AUTHORIZATION OF APPROPRIATIONS.—There
7 are authorized to be appropriated such sums as are nec-
8 essary to carry out this section for each of fiscal years
9 2017 through 2021.”.

10 **SEC. 4. FEDERAL MATCHING FUND FOR SMART GRID IN-**
11 **VESTMENT COSTS.**

12 Section 1306(f) of the Energy Independence and Se-
13 curity Act of 2007 (42 U.S.C. 17386(f)) is amended by
14 striking “fiscal years 2008 through 2012” and inserting
15 “each of fiscal years 2017 through 2021”.

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