

114TH CONGRESS  
2D SESSION

# H. R. 4393

To advance the integration of clean distributed energy into electric grids,  
and for other purposes.

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## IN THE HOUSE OF REPRESENTATIVES

JANUARY 25, 2016

Ms. CASTOR of Florida (for herself and Mr. HANNA) introduced the following bill; which was referred to the Committee on Energy and Commerce, and in addition to the Committee on Science, Space, 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

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## A BILL

To advance the integration of clean distributed energy into  
electric grids, 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 “Clean Distributed En-  
5       ergy Grid Integration Act”.

6       **SEC. 2. FINDINGS.**

7       Congress finds that—

1           (1) research by the Secretary of Energy and the  
2 Administrator of the Environmental Protection  
3 Agency has found that clean distributed energy tech-  
4 nologies can create important values for both the  
5 host facility and the electric grid operator;

6           (2) the values described in paragraph (1) can  
7 include, for the host facility—

8                   (A) energy bill savings;

9                   (B) additional revenue from offering ancil-  
10 lary services to the electric grid operator;

11                  (C) increased electric reliability in the  
12 event of grid outages; and

13                  (D) improved electric power quality;

14           (3) the values described in paragraph (1) can  
15 include, for the electric grid operator—

16                   (A) avoiding the need for transmission and  
17 distribution upgrade investments;

18                   (B) enhanced grid stability by providing  
19 reactive power;

20                   (C) voltage and frequency stabilization;  
21 and

22                   (D) more reliable and stable operation of  
23 the grid by providing dispatchable energy to the  
24 grid during periods of insufficient capacity or  
25 supply; and

1           (4) new advances in intelligent sensing and sim-  
2           ulation and control technologies offer the potential  
3           to enhance the benefits of clean distributed genera-  
4           tion to both the host facility and the electric grid op-  
5           erator from dynamic, adaptive, and anticipatory re-  
6           sponse to changing grid conditions.

7 **SEC. 3. DEFINITIONS.**

8           In this Act:

9           (1) **ANCILLARY SERVICE.**—The term “ancillary  
10          service” means those services necessary to support  
11          the transmission of electric power from seller to pur-  
12          chaser given the obligations of control areas and  
13          transmitting utilities within those control areas to  
14          maintain reliable operations of the interconnected  
15          transmission system.

16          (2) **CLEAN DISTRIBUTED ENERGY.**—The term  
17          “clean distributed energy” means energy tech-  
18          nologies that are located on the customer site oper-  
19          ating on the customer side of the electric meter and  
20          are interconnected with the electric grid.

21          (3) **COMBINED HEAT AND POWER TECH-**  
22          **NOLOGY.**—The term “combined heat and power  
23          technology” means the generation of electric energy  
24          and heat in a single, integrated system that meets  
25          the efficiency criteria in clauses (ii) and (iii) of sec-

1       tion 48(c)(3)(A) of the Internal Revenue Code of  
2       1986, under which heat that is conventionally re-  
3       jected is recovered and used to meet thermal energy  
4       requirements.

5           (4) ENERGY STORAGE.—The term “energy  
6       storage” means technologies that store electric en-  
7       ergy and are able to discharge on demand to meet  
8       customer or grid needs for electric energy.

9           (5) FUEL CELL.—The term “fuel cell” means a  
10       device that produces electric energy directly from a  
11       chemical reaction.

12          (6) GRID.—The term “grid” means the electric  
13       grid that is composed on both distribution and  
14       transmission lines, and associated facilities, includ-  
15       ing substations, sensors, and operational controls.

16          (7) INTELLIGENCE.—The term “intelligence”  
17       means any devices or technologies that manifest  
18       adaptive, anticipatory, and dynamic optimization be-  
19       havior.

20          (8) QUALIFIED WASTE HEAT RESOURCE.—

21            (A) IN GENERAL.—The term “qualified  
22       waste heat resource” means—

23              (i) exhaust heat or flared gas from  
24              any industrial process;

1 (ii) waste gas or industrial tail gas  
2 that would otherwise be flared, incinerated,  
3 or vented;

4 (iii) a pressure drop in any gas for an  
5 industrial or commercial process; or

6 (iv) any other form of waste heat re-  
7 source, as determined by the Secretary.

8 (B) EXCLUSION.—The term “qualified  
9 waste heat resource” does not include a heat re-  
10 source from a process the primary purpose of  
11 which is the generation of electricity using a  
12 fossil fuel.

13 (9) SECRETARY.—The term “Secretary” means  
14 the Secretary of Energy.

15 (10) WASTE HEAT TO POWER TECHNOLOGY.—  
16 The term “waste heat to power technology” means  
17 a system that generates electricity through the re-  
18 covery of a qualified waste heat resource.

19 **SEC. 4. RESEARCH AND DEPLOYMENT PLAN FOR EN-**  
20 **HANCED INTEGRATION OF CLEAN DISTRIB-**  
21 **UTED ENERGY WITH THE GRID.**

22 (a) IN GENERAL.—The Secretary shall carry out ef-  
23 forts for advancing the integration of clean distributed en-  
24 ergy into electric grids.

1 (b) STUDY AND REPORT ON THE STATUS OF GRID  
2 INTEGRATION.—

3 (1) IN GENERAL.—In carrying out the efforts  
4 under subsection (a) and not later than 180 days  
5 after the date of enactment of this Act, the Sec-  
6 retary shall conduct a study on the status of integra-  
7 tion of clean distributed energy into the grid, identi-  
8 fying any issues that require additional research or  
9 regulatory development.

10 (2) INCLUSIONS.—In conducting the study  
11 under paragraph (1), the Secretary shall—

12 (A) identify and quantify the benefits to all  
13 stakeholders of expanded integration of clean  
14 distributed energy resources into the grid;

15 (B) identify any technical issues that re-  
16 quire research to identify solutions; and

17 (C) identify any regulatory barriers that  
18 inhibit the expanded integration of clean dis-  
19 tributed energy resources into the grid.

20 (3) REPORT.—Not later than 1 year after the  
21 date of enactment of this Act, the Secretary shall  
22 submit to Congress a report describing the results of  
23 the study conducted under paragraph (1).

1           (4) FUNDING.—The Secretary shall use unobli-  
2           gated funds of the Department of Energy to carry  
3           out this subsection.

4           (c) RESEARCH INTO THE TECHNICAL BARRIERS TO  
5 THE INTEGRATION OF CLEAN DISTRIBUTED ENERGY  
6 WITH THE GRID.—

7           (1) IN GENERAL.—Not later than 18 months  
8           after the date of enactment of this Act, the Sec-  
9           retary shall—

10                   (A) issue a solicitation for research pro-  
11                   posals to address the technical barriers identi-  
12                   fied in the report submitted under subsection  
13                   (b)(3); and

14                   (B) make grants to those applicants with  
15                   research proposals selected by the Secretary in  
16                   accordance with paragraph (2).

17           (2) CRITERIA.—The Secretary shall select re-  
18           search proposals to receive a grant under this sub-  
19           section on the basis of merit, using criteria identified  
20           by the Secretary, including the likelihood that the  
21           research results will address critical barriers identi-  
22           fied by the Secretary.

23           (3) FUNDING.—Beginning in the first full fiscal  
24           year following the date of enactment of this Act, and  
25           annually thereafter for 2 years, the Secretary may

1 request funding as necessary to carry out this sub-  
2 section, but in no case shall funding exceed  
3 \$5,000,000 in any 1 fiscal year.

4 (d) CREATION OF A STAKEHOLDER WORKING  
5 GROUP.—

6 (1) IN GENERAL.—Not later than 18 months  
7 after the date of enactment of this Act, the Sec-  
8 retary shall convene a working group (referred to in  
9 this subsection as the “Group”) to address regu-  
10 latory barriers to deployment of intelligent grid inte-  
11 gration of clean distributed energy technologies.

12 (2) PURPOSE.—The purpose of the Group is to  
13 provide guidance on how to address the technical,  
14 regulatory and economic factors that limit wide-  
15 spread integration of grid-level clean distributed en-  
16 ergy use in order to advance the integration of clean  
17 distributed energy into electric grids.

18 (3) MEMBERSHIP.—

19 (A) IN GENERAL.—The Group shall be  
20 composed of representatives of all groups deter-  
21 mined by the Secretary to have a material in-  
22 terest in the development, implementation,  
23 siting, and integration of clean distributed en-  
24 ergy technology or systems into the electric  
25 grid.



1 (B) CRITERIA.—Members shall be se-  
2 lected—

3 (i) from representatives that apply as  
4 a result of a public announcement from the  
5 Secretary; and

6 (ii) by the Secretary based on quali-  
7 fications and balance of interests rep-  
8 resented by the selected individuals.

9 (4) DUTIES.—The duties of the Group shall  
10 be—

11 (A) to review the regulatory barriers iden-  
12 tified in the report prepared by the Secretary  
13 under subsection (b)(3);

14 (B) to identify any additional regulatory  
15 barriers that inhibit the installation of distrib-  
16 uted energy; and

17 (C) to recommend to the Secretary any ac-  
18 tions that should be undertaken to remove these  
19 barriers.

20 (5) REPORT.—Not later than 3 years after the  
21 date of enactment of this Act, the Secretary shall  
22 prepare and submit to Congress a report based on  
23 the recommendations of the Group under paragraph  
24 (4)(C), to be made publicly available.

1           (6) FUNDING.—The Secretary may request  
2 funding as necessary to carry out this subsection,  
3 but in no case shall funding exceed \$2,000,000 in  
4 any 1 fiscal year.

5           (e) DEMONSTRATIONS OF INTELLIGENT GRID INTE-  
6 GRATION OF CLEAN DISTRIBUTED ENERGY SYSTEMS.—

7           (1) IN GENERAL.—Based on the findings in the  
8 reports conducted under this section and not later  
9 than 3 years after the date of enactment of this Act,  
10 the Secretary shall issue a solicitation for dem-  
11 onstration of integration of distributed energy re-  
12 sources into the grid.

13           (2) ELIGIBLE ENTITIES.—Any individual entity  
14 or group of entities may submit to the Secretary  
15 proposals for demonstration projects based on the  
16 solicitation described in paragraph (1), including—

17                   (A) State and local agencies;

18                   (B) public institutions;

19                   (C) private companies;

20                   (D) electric utilities; and

21                   (E) equipment manufacturers.

22           (3) GRANTS AUTHORIZED.—The Secretary may  
23 make grants, in amounts not to exceed a total of  
24 \$5,000,000, to eligible entities to carry out dem-  
25 onstration projects, to be selected based on—

1 (A) the technical merits of the demonstra-  
2 tion project;

3 (B) the likelihood that the demonstration  
4 project will address critical barriers identified  
5 by the Secretary under this section; and

6 (C) the share of non-Federal funds for the  
7 demonstration project.

8 (4) FUNDING.—Beginning in the third full fis-  
9 cal year following the date of enactment of this Act,  
10 and annually thereafter for 3 years, the Secretary  
11 may request funding as necessary to carry out this  
12 subsection, but in no case shall funding exceed  
13 \$15,000,000 in any 1 fiscal year.

14 (f) REPORT.—The Secretary annually shall submit to  
15 Congress a report that—

16 (1) describes the progress made in carrying out  
17 this section; and

18 (2) identifies any technical or regulatory issues  
19 that require legislative action.

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