

116TH CONGRESS
1ST SESSION

S. 2422

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

IN THE SENATE OF THE UNITED STATES

AUGUST 1, 2019

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

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 Energy Grid
5 Act of 2019”.

6 **SEC. 2. FINDINGS.**

7 Congress finds that—

8 (1) research by the Secretary of Energy and the
9 Administrator of the Environmental Protection
10 Agency has found that clean distributed energy tech-

1 nologies can create important values for both the
2 host facility and the electric grid operator;

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

5 (A) energy bill savings;

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

8 (C) increased electric reliability in the
9 event of grid outages; and

10 (D) improved electric power quality;

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

13 (A) avoiding the need for transmission and
14 distribution upgrade investments;

15 (B) enhanced grid stability by providing
16 reactive power;

17 (C) voltage and frequency stabilization;
18 and

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

23 (4) new advances in intelligent sensing and sim-
24 ulation and control technologies offer the potential
25 to enhance the benefits of clean distributed genera-

1 tion to both the host facility and the electric grid op-
2 erator from dynamic, adaptive, and anticipatory re-
3 sponse to changing grid conditions.

4 **SEC. 3. DEFINITIONS.**

5 In this Act:

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

13 (2) **CLEAN DISTRIBUTED ENERGY.**—The term
14 “clean distributed energy” means energy tech-
15 nologies that are located on or near the customer
16 site operating on the customer side of the electric
17 meter and are interconnected with the electric grid,
18 including—

- 19 (A) clean electric generation;
20 (B) customer electric efficiency measures;
21 (C) electric demand flexibility; and
22 (D) energy storage.

23 (3) **GRID.**—The term “grid” means the electric
24 grid that is composed of both distribution and trans-

1 mission lines, and associated facilities, including sub-
 2 stations, sensors, and operational controls.

3 (4) INTELLIGENCE.—The term “intelligence”
 4 means any devices or technologies that manifest
 5 adaptive, anticipatory, and dynamic optimization be-
 6 havior.

7 (5) SECRETARY.—The term “Secretary” means
 8 the Secretary of Energy.

9 **SEC. 4. RESEARCH AND DEPLOYMENT PLAN FOR EN-**
 10 **HANCED INTEGRATION OF CLEAN DISTRIB-**
 11 **UTED ENERGY WITH THE GRID.**

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

15 (b) STUDY AND REPORT ON THE STATUS OF GRID
 16 INTEGRATION.—

17 (1) IN GENERAL.—Not later than 180 days
 18 after the date of enactment of this Act, the Sec-
 19 retary, after consultation with State public utility
 20 commissions, State energy offices, regional trans-
 21 mission organizations, electric and natural gas utili-
 22 ties, independent power producers, clean distributed
 23 energy providers, public interest organizations, and
 24 other appropriate stakeholders, shall conduct a study
 25 on the status of integration of clean distributed en-

1 ergy into the grid, identifying any issues that require
2 additional research or regulatory development.

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

5 (A) identify and quantify the benefits to all
6 stakeholders of expanded integration of clean
7 distributed energy resources into the grid;

8 (B) identify any technical issues (including
9 cybersecurity concerns) that require research to
10 identify solutions; and

11 (C) identify any regulatory barriers that
12 inhibit the expanded integration of clean dis-
13 tributed energy resources into the grid.

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

18 (4) BEST PRACTICES.—Based on the findings
19 of the report described in paragraph (3), the Sec-
20 retary shall establish and distribute to States best
21 practices to encourage the integration of clean dis-
22 tributed energy into the grid.

23 (5) FUNDING.—The Secretary shall use unobli-
24 gated funds of the Department of Energy to carry
25 out this subsection.

1 (c) RESEARCH INTO THE TECHNICAL BARRIERS TO
2 THE INTEGRATION OF CLEAN DISTRIBUTED ENERGY
3 WITH THE GRID.—

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

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

11 (B) make grants to those applicants with
12 research proposals selected by the Secretary in
13 accordance with paragraph (2).

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

20 (3) FUNDING.—Beginning in the first full fiscal
21 year following the date of enactment of this Act, and
22 annually thereafter for 2 years, the Secretary may
23 request funding as necessary to carry out this sub-
24 section, but in no case shall funding exceed
25 \$5,000,000 in any 1 fiscal year.

1 (d) CREATION OF A STAKEHOLDER WORKING
2 GROUP.—

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

9 (2) PURPOSE.—The purpose of the Group is to
10 provide guidance on how to address the regulatory
11 and economic factors that limit widespread integra-
12 tion of grid-level clean distributed energy use in
13 order to advance the integration of clean distributed
14 energy into electric grids.

15 (3) MEMBERSHIP.—The Group shall be com-
16 posed of—

17 (A) representatives from—

- 18 (i) State public utility commissions;
19 (ii) State energy offices;
20 (iii) regional transmission organiza-
21 tions;
22 (iv) electric and natural gas utilities;
23 (v) independent power producers;
24 (vi) clean distributed energy providers;
25 and

1 (vii) public interest organizations; and

2 (B) any other appropriate stakeholders de-
3 termined by the Secretary to have a material
4 interest in the development, implementation,
5 siting, and integration of clean distributed en-
6 ergy technology or systems into the electric
7 grid.

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

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

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

16 (C) to recommend to the Secretary actions
17 that should be considered to remove the bar-
18 riers identified under subparagraphs (A) and
19 (B).

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 and natural gas 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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