

115TH CONGRESS
2D SESSION

H. R. 5069

To establish the Federal Smart Building Program to implement smart building technology and demonstrate the costs and benefits of smart buildings, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 16, 2018

Mr. WELCH (for himself and Mr. KINZINGER) introduced the following bill; which was referred to the Committee on Energy and Commerce, and in addition to the Committees on Transportation and Infrastructure, and 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

A BILL

To establish the Federal Smart Building Program to implement smart building technology and demonstrate the costs and benefits of smart buildings, 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 Building Accel-
5 eration Act of 2018”.

1 **SEC. 2. FINDINGS.**

2 Congress finds that—

3 (1) the building sector uses more than 40 per-
4 cent of the energy of the United States;

5 (2) emerging building energy monitoring and
6 control technologies are enabling a transition of the
7 building sector to “smart” buildings that have dra-
8 matically reduced energy use and improved quality
9 of service to occupants;

10 (3) an analysis of select private-sector smart
11 buildings by the Department of Energy would docu-
12 ment the costs and benefits of the emerging tech-
13 nologies, promote the adoption of the technologies,
14 and accelerate the transition to the technologies;

15 (4) with over 400,000 buildings, the Federal
16 Government is the largest building owner in the
17 United States; and

18 (5) the Federal Government can also accelerate
19 the transition to smart building technologies by dem-
20 onstrating and evaluating emerging smart building
21 technologies using existing programs and funding to
22 showcase selected Federal smart buildings.

23 **SEC. 3. SMART BUILDING ACCELERATION.**

24 (a) DEFINITIONS.—In this section:

25 (1) INTERNET OF THINGS TECHNOLOGY SOLU-
26 TION.—The term “internet of things technology so-

1 lution” means a solution that improves energy effi-
2 ciency and predictive maintenance through cutting-
3 edge technologies that utilize internet connected
4 technologies including sensors, intelligent gateways,
5 and security embedded hardware.

6 (2) PROGRAM.—The term “program” means
7 the Federal Smart Building Program established
8 under subsection (b)(1).

9 (3) SECRETARY.—The term “Secretary” means
10 the Secretary of Energy.

11 (4) SMART BUILDING.—The term “smart build-
12 ing” means a building, or collection of buildings,
13 with an energy system that—

14 (A) is flexible and automated;

15 (B) has extensive operational monitoring
16 and communication connectivity, allowing re-
17 mote monitoring and analysis of all building
18 functions;

19 (C) takes a systems-based approach in in-
20 tegrating the overall building operations for
21 control of energy generation, consumption, and
22 storage;

23 (D) communicates with utilities and other
24 third-party commercial entities, if appropriate;

1 (E) protects the health and safety of occu-
2 pants and workers; and

3 (F) is cybersecure.

4 (5) SMART BUILDING ACCELERATOR.—The
5 term “smart building accelerator” means an initia-
6 tive that is designed to demonstrate specific innova-
7 tive policies and approaches—

8 (A) with clear goals and a clear timeline;
9 and

10 (B) that, on successful demonstration,
11 would accelerate investment in energy effi-
12 ciency.

13 (b) FEDERAL SMART BUILDING PROGRAM.—

14 (1) ESTABLISHMENT.—Not later than 1 year
15 after the date of enactment of this Act, the Sec-
16 retary shall, in consultation with the Administrator
17 of General Services, establish a program to be
18 known as the Federal Smart Building Program—

19 (A) to implement smart building tech-
20 nology; and

21 (B) to demonstrate the costs and benefits
22 of smart buildings.

23 (2) SELECTION.—

24 (A) IN GENERAL.—The Secretary shall co-
25 ordinate the selection of not fewer than 1 build-

1 ing from among each of several key Federal
2 agencies, as described in paragraph (4), to com-
3 pose an appropriately diverse set of smart
4 buildings based on size, type, and geographic lo-
5 cation.

6 (B) INCLUSION OF COMMERCIALY OPER-
7 ATED BUILDINGS.—In making selections under
8 subparagraph (A), the Secretary may include
9 buildings that are owned by the Federal Gov-
10 ernment but are commercially operated.

11 (3) TARGETS.—Not later than 18 months after
12 the date of enactment of this Act, the Secretary
13 shall establish targets for the number of smart
14 buildings to be commissioned and evaluated by key
15 Federal agencies by 3 years and 6 years after the
16 date of enactment of this Act.

17 (4) FEDERAL AGENCY DESCRIBED.—The key
18 Federal agencies referred to in this subsection shall
19 include buildings operated by—

20 (A) the Department of the Army;

21 (B) the Department of the Navy;

22 (C) the Department of the Air Force;

23 (D) the Department;

24 (E) the Department of the Interior;

1 (F) the Department of Veterans Affairs;
2 and

3 (G) the General Services Administration.

4 (5) REQUIREMENT.—In implementing the pro-
5 gram, the Secretary shall leverage existing financing
6 mechanisms including energy savings performance
7 contracts, utility energy service contracts, and an-
8 nual appropriations.

9 (6) EVALUATION.—Using the guidelines of the
10 Federal Energy Management Program relating to
11 whole-building evaluation, measurement, and verifi-
12 cation, the Secretary shall evaluate the costs and
13 benefits of the buildings selected under paragraph
14 (2), including an identification of—

15 (A) which advanced building technolo-
16 gies—

17 (i) are most cost-effective; and

18 (ii) show the most promise for—

19 (I) increasing building energy
20 savings;

21 (II) increasing service perform-
22 ance to building occupants;

23 (III) reducing environmental im-
24 pacts; and

1 (IV) establishing cybersecurity;

2 and

3 (B) any other information the Secretary
4 determines to be appropriate.

5 (7) AWARDS.—The Secretary may expand
6 awards made under the Federal Energy Manage-
7 ment Program and the Better Building Challenge to
8 recognize specific agency achievements in accel-
9 erating the adoption of smart building technologies.

10 (c) SURVEY OF PRIVATE SECTOR SMART BUILD-
11 INGS.—

12 (1) SURVEY.—The Secretary shall conduct a
13 survey of privately owned smart buildings through-
14 out the United States, including commercial build-
15 ings, laboratory facilities, hospitals, multifamily resi-
16 dential buildings, and buildings owned by nonprofit
17 organizations and institutions of higher education.

18 (2) SELECTION.—From among the smart build-
19 ings surveyed under paragraph (1), the Secretary
20 shall select not fewer than 1 building each from an
21 appropriate range of building sizes, types, and geo-
22 graphic locations.

23 (3) EVALUATION.—Using the guidelines of the
24 Federal Energy Management Program relating to
25 whole-building evaluation, measurement, and verifi-

1 cation, the Secretary shall evaluate the costs and
2 benefits of the buildings selected under paragraph
3 (2), including an identification of—

4 (A) which advanced building technologies
5 and systems—

6 (i) are most cost-effective; and

7 (ii) show the most promise for—

8 (I) increasing building energy
9 savings;

10 (II) increasing service perform-
11 ance to building occupants;

12 (III) reducing environmental im-
13 pacts; and

14 (IV) establishing cybersecurity;

15 and

16 (B) any other information the Secretary
17 determines to be appropriate.

18 (d) LEVERAGING EXISTING PROGRAMS.—

19 (1) BETTER BUILDING CHALLENGE.—As part
20 of the Better Building Challenge of the Department,
21 the Secretary, in consultation with major private
22 sector property owners, shall develop smart building
23 accelerators to demonstrate innovative policies and
24 approaches that will accelerate the transition to

1 smart buildings in the public, institutional, and com-
2 mercial buildings sectors.

3 (2) RESEARCH AND DEVELOPMENT.—

4 (A) IN GENERAL.—The Secretary shall
5 conduct research and development to address
6 key barriers to the integration of advanced
7 building technologies and to accelerate the tran-
8 sition to smart buildings.

9 (B) INCLUSION.—The research and devel-
10 opment conducted under subparagraph (A)
11 shall include research and development on—

12 (i) achieving whole-building, systems-
13 level efficiency through smart system and
14 component integration;

15 (ii) improving physical components,
16 such as sensors and controls, to be adapt-
17 ive, anticipatory, and networked;

18 (iii) integration of internet of things
19 technology solutions, including measure to
20 increase water and energy efficiency, im-
21 prove water quality, support real-time util-
22 ity management, and enable actionable
23 analytics and predictive maintenance to
24 improve building systems long-term viabil-
25 ity;

- 1 (iv) reducing the cost of key compo-
2 nents to accelerate the adoption of smart
3 building technologies;
- 4 (v) data management, including the
5 capture and analysis of data and the inter-
6 operability of the energy systems;
- 7 (vi) protecting against cybersecurity
8 threats and addressing security vulnerabili-
9 ties of building systems or equipment;
- 10 (vii) business models, including how
11 business models may limit the adoption of
12 smart building technologies and how to
13 support transactive energy;
- 14 (viii) integration and application of
15 combined heat and power systems and en-
16 ergy storage for resiliency;
- 17 (ix) characterization of buildings and
18 components;
- 19 (x) consumer and utility protections;
- 20 (xi) continuous management, includ-
21 ing the challenges of managing multiple
22 energy systems and optimizing systems for
23 disparate stakeholders; and

1 (xii) other areas of research and de-
2 velopment, as determined appropriate by
3 the Secretary.

4 (e) REPORT.—Not later than 2 years after the date
5 of enactment of this Act, and every 2 years thereafter until
6 a total of 3 reports have been made, the Secretary shall
7 submit to the Committee on Energy and Natural Re-
8 sources of the Senate and the Committee on Energy and
9 Commerce and the Committee on Science, Space, and
10 Technology of the House of Representatives a report on—

11 (1) the establishment of the Federal Smart
12 Building Program and the evaluation of Federal
13 smart buildings under subsection (b);

14 (2) the survey and evaluation of private sector
15 smart buildings under subsection (c); and

16 (3) any recommendations of the Secretary to
17 further accelerate the transition to smart buildings.

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