

114TH CONGRESS
1ST SESSION

S. _____

To accelerate the adoption of smart building technologies in the private sector and key Federal agencies.

IN THE SENATE OF THE UNITED STATES

Ms. CANTWELL introduced the following bill; which was read twice and referred to the Committee on _____

A BILL

To accelerate the adoption of smart building technologies in the private sector and key Federal agencies.

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”.

6 **SEC. 2. FINDINGS.**

7 Congress finds that—

- 8 (1) the building sector uses more than 40 per-
9 cent of the energy of the Nation;

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

6 (3) an analysis of select private-sector smart
7 buildings by the Department of Energy would docu-
8 ment the costs and benefits of those emerging tech-
9 nologies, promote their adoption, and accelerate that
10 transition;

11 (4) with over 400,000 buildings, the Federal
12 Government is the largest building owner in the
13 United States; and

14 (5) the Federal Government can also accelerate
15 the transition to smart building technologies by dem-
16 onstrating and evaluating emerging smart building
17 technologies using existing programs and funding to
18 showcase selected Federal smart buildings.

19 **SEC. 3. DEFINITIONS.**

20 In this Act:

21 (1) **PROGRAM.**—The term “program” means
22 the smart building program established under sec-
23 tion 5(a).

24 (2) **SECRETARY.**—The term “Secretary” means
25 the Secretary of Energy.

1 (3) SMART BUILDING.—The term “smart build-
2 ing” means a building with an energy system that—

3 (A) is flexible and automated;

4 (B) has extensive operational monitoring
5 and communication connectivity, allowing re-
6 mote monitoring and analysis of all building
7 functions;

8 (C) is integrated with the overall building
9 operations for control of energy generation, con-
10 sumption, and storage; and

11 (D) communicates with utilities and other
12 third party commercial entities where appro-
13 priate.

14 **SEC. 4. SURVEY OF PRIVATE SECTOR SMART BUILDINGS.**

15 (a) SURVEY.—The Secretary shall conduct a survey
16 of privately owned smart buildings throughout the Nation,
17 including commercial buildings and buildings owned by
18 nonprofit organizations and institutions of higher edu-
19 cation.

20 (b) SELECTION.—From among the smart buildings
21 surveyed under subsection (a), the Secretary shall select
22 at least 1 building each from an appropriate range of
23 building sizes and types.

24 (c) EVALUATION.—Using the guidelines of the Fed-
25 eral Energy Management Program relating to whole-build-

1 ing evaluation, measurement, and verification, the Sec-
2 retary shall evaluate the costs and benefits of the buildings
3 selected under subsection (b), including an identification
4 of—

- 5 (1) which advanced building technologies—
 - 6 (A) are most cost-effective; and
 - 7 (B) show the most promise for—
 - 8 (i) increasing building energy savings;
 - 9 (ii) increasing service performance to
10 building occupants; and
 - 11 (iii) reducing environmental impacts;
- 12 and
- 13 (2) any other information the Secretary deter-
14 mines to be appropriate.

15 **SEC. 5. FEDERAL SMART BUILDING PROGRAM.**

16 (a) **ESTABLISHMENT.**—The Secretary shall establish
17 a program to establish 1 or more smart buildings under
18 the jurisdiction of several key Federal agencies, including
19 buildings that are owned by the Federal Government but
20 are commercially operated, to demonstrate the costs and
21 benefits of smart buildings.

22 (b) **FEDERAL AGENCY DESCRIBED.**—The key Fed-
23 eral agencies referred to in subsection (a) shall include—

- 24 (1) the Department of Defense;
- 25 (2) the Department of Energy;

1 (3) the Department of Veterans Affairs; and

2 (4) the General Services Administration.

3 (c) REQUIREMENT.—In carrying out the program,
4 the Secretary shall leverage existing procurement mecha-
5 nisms.

6 (d) EVALUATION.—Using the guidelines of the Fed-
7 eral Energy Management Program relating to whole-build-
8 ing evaluation, measurement, and verification, the Sec-
9 retary shall evaluate the costs and benefits of the buildings
10 selected under this section including an identification of—

11 (1) which advanced building technologies—

12 (A) are most cost-effective; and

13 (B) show the most promise for—

14 (i) increasing building energy savings;

15 (ii) increasing service performance to
16 building occupants; and

17 (iii) reducing environmental impacts;

18 and

19 (2) any other information the Secretary deter-
20 mines to be appropriate.

21 **SEC. 6. LEVERAGING EXISTING PROGRAMS.**

22 (a) BETTER BUILDING CHALLENGE.—As part of the
23 Better Building Challenge of the Department of Energy,
24 the Secretary shall develop a smart building accelerator
25 in consultation with major private sector property owners

1 to demonstrate innovative policies and approaches that
2 will accelerate the transition to smart buildings.

3 (b) RESEARCH AND DEVELOPMENT.—

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

8 (2) INCLUSION.—The research and development
9 conducted under paragraph (1) shall include re-
10 search and development on—

11 (A) physical components, such as sensors
12 and controls;

13 (B) reducing the cost of key components to
14 accelerate the adoption of smart building tech-
15 nologies;

16 (C) data management, including the cap-
17 ture and analysis of data and the interoper-
18 ability of the energy systems;

19 (D) business models, including how busi-
20 ness models may limit the adoption of smart
21 building technologies and how to support
22 transactive energy;

23 (E) characterization of buildings and com-
24 ponents;

25 (F) consumer and utility protections;

1 (G) continuous management, including the
2 challenges of managing multiple energy systems
3 and optimizing systems for disparate stake-
4 holders, and

5 (H) other areas of research and develop-
6 ment, as determined appropriate by the Sec-
7 retary.

8 **SEC. 7. REPORT.**

9 Not later than 18 months after the date of enactment
10 of this Act, the Secretary shall submit to the Committee
11 on Energy and Natural Resources of the Senate and the
12 Committee on Energy and Commerce of the House of
13 Representatives a report on—

14 (1) the survey and evaluation of private sector
15 smart buildings carried out under section 4;

16 (2) the evaluation of Federal smart buildings
17 carried out under section 5; and

18 (3) any recommendations of the Secretary to
19 further accelerate the transition to smart buildings.