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114TH CONGRESS
1ST SESSION

S. 1046

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

IN THE SENATE OF THE UNITED STATES

APRIL 22, 2015

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

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A BILL

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

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Smart Building Acceleration Act''.

SEC. 2. FINDINGS.

Congress finds that—

(1) the building sector uses more than 40 percent of the energy of the Nation;

(2) emerging building energy monitoring and control technologies are enabling a transition of the building sector to ''smart'' buildings that have dramatically reduced energy use and improved quality of service to occupants;

(3) an analysis of select private-sector smart buildings by the Department of Energy would document the costs and benefits of those emerging technologies, promote their adoption, and accelerate that transition;

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

(5) the Federal Government can also accelerate the transition to smart building technologies by demonstrating and evaluating emerging smart building technologies using existing programs and funding to showcase selected Federal smart buildings.

SEC. 3. DEFINITIONS.

In this Act:

(1) PROGRAM.—The term ''program'' means the smart building program established under section 5(a).

(2) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(3) SMART BUILDING.—The term ''smart building'' means a building with an energy system that—

(A) is flexible and automated;

(B) has extensive operational monitoring and communication connectivity, allowing remote monitoring and analysis of all building functions;

(C) is integrated with the overall building operations for control of energy generation, consumption, and storage; and

(D) communicates with utilities and other third party commercial entities where appropriate.

SEC. 4. SURVEY OF PRIVATE SECTOR SMART BUILDINGS.

(a) SURVEY.—The Secretary shall conduct a survey of privately owned smart buildings throughout the Nation, including commercial buildings and buildings owned by nonprofit organizations and institutions of higher education.

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

(c) EVALUATION.—Using the guidelines of the Federal Energy Management Program relating to whole-build-

ing evaluation, measurement, and verification, the Secretary shall evaluate the costs and benefits of the buildings selected under subsection (b), including an identification of—

(1) which advanced building technologies—

(A) are most cost-effective; and

(B) show the most promise for—

(i) increasing building energy savings;

(ii) increasing service performance to building occupants; and

(iii) reducing environmental impacts; and

(2) any other information the Secretary determines to be appropriate.

SEC. 5. FEDERAL SMART BUILDING PROGRAM.

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

(b) FEDERAL AGENCY DESCRIBED.—The key Federal agencies referred to in subsection (a) shall include—

(1) the Department of Defense;

(2) the Department of Energy;

(3) the Department of Veterans Affairs; and

(4) the General Services Administration.

(c) REQUIREMENT.—In carrying out the program, the Secretary shall leverage existing procurement mechanisms.

(d) EVALUATION.—Using the guidelines of the Federal Energy Management Program relating to whole-building evaluation, measurement, and verification, the Secretary shall evaluate the costs and benefits of the buildings selected under this section including an identification of—

(1) which advanced building technologies—

(A) are most cost-effective; and

(B) show the most promise for—

(i) increasing building energy savings;

(ii) increasing service performance to building occupants; and

(iii) reducing environmental impacts; and

(2) any other information the Secretary determines to be appropriate.

SEC. 6. LEVERAGING EXISTING PROGRAMS.

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

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

(b) RESEARCH AND DEVELOPMENT.—

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

(2) INCLUSION.—The research and development conducted under paragraph (1) shall include research and development on—

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

(B) reducing the cost of key components to accelerate the adoption of smart building technologies;

(C) data management, including the capture and analysis of data and the interoperability of the energy systems;

(D) business models, including how business models may limit the adoption of smart building technologies and how to support transactive energy;

(E) characterization of buildings and components;

(F) consumer and utility protections;

(G) continuous management, including the challenges of managing multiple energy systems and optimizing systems for disparate stakeholders; and

(H) other areas of research and development, as determined appropriate by the Secretary.

SEC. 7. REPORT.

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

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

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

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

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