116TH CONGRESS
1ST SESSION

S. 2335

To accelerate smart building development, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JULY 30, 2019

Ms. CANTWELL (for herself and Ms. SMITH) 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 smart building development, and for other purposes.

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 of 2019''.

SEC. 2. FINDINGS.

Congress finds that—

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

(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 the emerging technologies, promote the adoption of the technologies, and accelerate the transition to the technologies;

(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) DEPARTMENT.—The term ''Department'' means the Department of Energy.

(2) PROGRAM.—The term ''program'' means the Federal Smart Building Program established under section 4(a).

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

(4) SMART BUILDING.—The term ''smart building'' means a building, or collection of buildings, 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) takes a systems-based approach in integrating the overall building operations for control of energy generation, consumption, and storage;

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

(E) protects the health and safety of occupants and workers; and

(F) is cybersecure.

(5) SMART BUILDING ACCELERATOR.—The term ''smart building accelerator'' means an initiative that is designed to demonstrate specific innovative policies and approaches—

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

(B) that, on successful demonstration, would accelerate investment in energy efficiency.

SEC. 4. FEDERAL SMART BUILDING PROGRAM.

(a) ESTABLISHMENT.—Not later than 1 year after the date of enactment of this Act, the Secretary shall, in consultation with the Administrator of General Services, establish a program to be known as the ''Federal Smart Building Program''—

(1) to implement smart building technology; and

(2) to demonstrate the costs and benefits of smart buildings.

(b) SELECTION.—

(1) IN GENERAL.—The Secretary shall coordinate the selection of not fewer than 1 building from among each of several key Federal agencies, as described in subsection (d), to compose an appropriately diverse set of smart buildings based on size, type, and geographic location.

(2) INCLUSION OF COMMERCIALLY OPERATED BUILDINGS.—In making selections under paragraph (1), the Secretary may include buildings that are owned by the Federal Government but are commercially operated.

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

(d) FEDERAL AGENCY DESCRIBED.—The key Federal agencies referred to subsection (b)(1) shall include buildings operated by—

(1) the Department of the Army;

(2) the Department of the Navy;

(3) the Department of the Air Force;

(4) the Department of Energy;

(5) the Department of the Interior;

(6) the Department of Veterans Affairs; and

(7) the General Services Administration.

(e) REQUIREMENT.—In implementing the program, the Secretary shall leverage existing financing mechanisms including energy savings performance contracts, utility energy service contracts, and annual appropriations.

(f) 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 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;

(iii) reducing environmental impacts; and

(iv) establishing cybersecurity; and

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

(g) AWARDS.—The Secretary may expand awards made under the Federal Energy Management Program and the Better Building Challenge to recognize specific agency achievements in accelerating the adoption of smart building technologies.

SEC. 5. SURVEY OF PRIVATE SECTOR SMART BUILDINGS.

(a) SURVEY.—The Secretary shall conduct a survey of privately owned smart buildings throughout the United States, including commercial buildings, laboratory facilities, hospitals, multifamily residential 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

not fewer than 1 building each from an appropriate range of building sizes, types, and geographic locations.

(c) 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 subsection (b), including an identification of—

(1) which advanced building technologies and systems—

(A) are most cost-effective; and

(B) show the most promise for—

(i) increasing building energy savings;

(ii) increasing service performance to building occupants;

(iii) reducing environmental impacts; and

(iv) establishing cybersecurity; 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, the Secretary, in consultation with major private sector property owners, shall develop smart building accelerators to dem-

onstrate innovative policies and approaches that will accelerate the transition to smart buildings in the public, institutional, and commercial buildings sectors.

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

(B) improving physical components, such as sensors and controls, to be adaptive, anticipatory, and networked;

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

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

(E) protecting against cybersecurity threats and addressing security vulnerabilities of building systems or equipment;

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

(G) integration and application of combined heat and power systems and energy storage for resiliency;

(H) characterization of buildings and components;

(I) consumer and utility protections;

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

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

SEC. 7. REPORT.

Not later than 2 years after the date of enactment of this Act, and every 2 years thereafter until a total of 3 reports have been made, the Secretary shall submit to the Committee on Energy and Natural Resources of the

Senate and the Committee on Energy and Commerce and the Committee on Science, Space, and Technology of the House of Representatives a report on—

(1) the establishment of the Federal Smart Building Program and the evaluation of Federal smart buildings under section 4;

(2) the survey and evaluation of private sector smart buildings under section 5; and

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

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