118TH CONGRESS
1ST SESSION

S. 646

To amend the Energy Policy Act of 2005 to establish a Hydrogen Technologies for Heavy Industry Demonstration Program, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MARCH 2, 2023

Mr. COONS (for himself, Mr. CORNYN, Mr. HICKENLOOPER, Mr. CASSIDY, Mr. HEINRICH, and Mr. LUJÁN) 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 amend the Energy Policy Act of 2005 to establish a Hydrogen Technologies for Heavy Industry Demonstration Program, 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 ''Hydrogen for Industry Act of 2023''.

SEC. 2. HYDROGEN TECHNOLOGIES FOR HEAVY INDUSTRY DEMONSTRATION PROGRAM.

(a) EMISSION REDUCTION PROGRAM.—Subtitle F of title IX of the Energy Policy Act of 2005 (42 U.S.C.

16291 et seq.) is amended by adding at the end the following:

"SEC. 969E. HYDROGEN TECHNOLOGIES FOR HEAVY INDUSTRY DEMONSTRATION PROGRAM.

"(a) DEFINITION OF LOW-INCOME OR DISADVANTAGED COMMUNITY.—The term 'low-income or disadvantaged community' means a community (including a city, town, county, or reasonably isolated and divisible segment of a larger municipality) with an annual median household income that is less than 100 percent of the statewide annual median household income for the State in which the community is located, according to the most recent decennial census.

"(b) PROGRAM.—Not later than 180 days after the date of enactment of the Hydrogen for Industry Act of 2023, the Secretary shall establish a program, to be known as the 'Hydrogen Technologies for Heavy Industry Demonstration Program' (referred to in this section as the 'Program'), under which the Secretary shall provide grants or cooperative agreements to demonstrate industrial end-use applications of hydrogen for—

"(1) iron, steel, and metals manufacturing;

"(2) cement manufacturing;

"(3) glass manufacturing;

"(4) ammonia and fertilizer production;

''(5) industrial food processes;

''(6) production of synthetic fuels from hydrogen, such as with carbon oxides;

''(7) fuel refining, such as biorefining;

''(8) chemical synthesis, such as synthesis of methanol and ethylene;

''(9) process heaters, including hydrogen combustion with environmental controls;

''(10) cogeneration to make electricity or heat to support industrial processes; or

''(11) any other use of hydrogen for heavy industry, as determined by the Secretary.

''(c) PURPOSE.—The purpose of the Program is to support the adoption of hydrogen as an emissions reduction technology for heavy industry, including in applications where hydrogen is blended with other fuels or feedstocks.

''(d) DEMONSTRATION PROJECTS AND OTHER AUTHORIZED PROJECTS.—

''(1) IN GENERAL.—The Secretary shall provide grants or cooperative agreements on a competitive basis for commercial-scale demonstration projects for end-use applications of hydrogen and other authorized projects, as described in paragraph (5).

''(2) AMOUNT OF GRANT OR COOPERATIVE AGREEMENT.—The amount of a grant or cooperative agreement provided to an eligible entity under this subsection shall be not more than $400,000,000.

''(3) APPLICATION.—An entity seeking a grant or cooperative agreement to conduct a demonstration project or other authorized project under this subsection shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require, including a description of the manner in which the project—

''(A) will contribute to the reduction of greenhouse gas emissions at the applicable facility; and

''(B) in the case of a project for industrial end-use application that already uses hydrogen at scale, will reduce or avoid emissions of greenhouse gases.

''(4) SELECTION.—

''(A) CONSIDERATIONS.—In providing a grant or cooperative agreement under this subsection, the Secretary shall review each applicant and application under paragraph (3) with respect to—

"(i) the financial strength of the applicant;

"(ii) the proposed construction schedule;

"(iii) the market risk of the technology that the applicant seeks to demonstrate, as applicable; and

"(iv) the contractor history of the applicant.

"(B) PRIORITY.—In providing a grant or cooperative agreement under this subsection, the Secretary shall give priority to projects that will provide greater net impact in avoiding or reducing emissions of greenhouse gases.

"(C) OTHER CONSIDERATIONS.—In providing a grant or cooperative agreement under this subsection, the Secretary shall, to the maximum extent practicable, provide a grant or cooperative agreement for projects that—

"(i) represent a variety of end uses of hydrogen;

"(ii) will use at least 50 percent hydrogen blends by volume;

"(iii) demonstrate existing or planned regional availability of hydrogen;

''(iv) will generate the greatest benefit to low-income or disadvantaged communities; and

''(v) will maximize creation or retention of domestic jobs and provide the highest job quality.

''(5) AUTHORIZED PROJECTS.—A grant or cooperative agreement provided under this subsection may be used—

''(A) to carry out demonstration projects for end uses of hydrogen;

''(B) to construct a new commercial-scale facility that will use hydrogen as a fuel or feedstock; or

''(C) to retool, retrofit, or expand an existing facility determined to be qualified by the Secretary to enable use of hydrogen as a fuel or feedstock in industrial end-use applications of hydrogen, including at multiple points within a larger facility.

''(6) REQUIREMENTS.—A demonstration project receiving a grant or cooperative agreement under this subsection shall—

"(A) use technologies that have completed pilot-scale testing or the equivalent, as determined by the Secretary;

"(B) on completion, demonstrate hydrogen technologies used by heavy industry; and

"(C) conduct hydrogen leakage monitoring, reporting, and verification programs and leak detection and repair programs.

"(7) COST SHARING.—The non-Federal share of the cost of a demonstration project carried out using a grant or cooperative agreement under this subsection shall be not less than 50 percent.

"(8) ENGINEERING AND DESIGN STUDIES.—The Secretary may fund front-end engineering and design studies in addition to, or in advance of, providing a grant or cooperative agreement for a demonstration project or other authorized project under this subsection.

"(e) APPLICABILITY.—No technology, or level of emission reduction, shall be treated as adequately demonstrated for purposes of section 111 of the Clean Air Act (42 U.S.C. 7411), achievable for purposes of best available control technologies (as defined in section 169 of that Act (42 U.S.C. 7479)), or achievable in practice for purposes of the terms defined in section 171 of that Act (42 U.S.C.

7501) solely by reason of the identification of that technology or level of emission reduction in programs established under this Act.

''(f) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Secretary to carry out the Program $1,200,000,000 for the period of fiscal years 2024 through 2028, to remain available until expended.''.

(b) CLERICAL AMENDMENT.—The table of contents of the Energy Policy Act of 2005 (Public Law 109–58; 119 Stat. 600) is amended by inserting after the item relating to section 969D the following:

''Sec. 969E. Hydrogen Technologies for Heavy Industry Demonstration Program.''.

SEC. 3. STUDY.

(a) IN GENERAL.—Not later than 270 days after the date of enactment of this Act, the Secretary of Energy, the Secretary of Commerce, and the Secretary of Transportation shall jointly conduct and submit to Congress a report describing the results of a study—

(1) to examine the potential for emissions reductions at industrial facilities through hydrogen applications, including—

(A) the potential use of levelized cost of carbon abatement, or a similar metric, in analyzing industrial uses of hydrogen; and

(B) the feasibility and impact of incorporating levelized cost of carbon abatement to compare the costs of technology options to reduce emissions across a range of industrial applications;

(2) to fully address existing challenges with respect to ensuring the safe use and handling of hydrogen and hydrogen-based fuels and blends in industrial systems, including health and environmental impacts associated with the leakage of hydrogen and hydrogen carriers;

(3) to identify and evaluate the feasibility, safety, and best practices of the use of hydrogen and ammonia as industrial fuel and feedstock, including ways that current procedures, training, and handoffs with supply chain partners should be augmented to ensure safety for workers and neighboring communities;

(4) to examine the feasibility of blending increasing levels of hydrogen with natural gas to supplement process heat requirements;

(5) to examine the environmental impacts of hydrogen combustion in hydrogen-fueled gas turbines as pure hydrogen or at different ratios if used in blended fuel; and

(6) to identify and evaluate considerations for transport and storage of hydrogen and hydrogen carriers for use at industrial facilities.

(b) REQUIREMENTS.—In conducting the study under subsection (a), the Secretary of Energy and the Secretary of Commerce shall—

(1) take into account lessons learned from demonstration projects in other industries and projects in other countries; and

(2) evaluate the applicability of the lessons described in paragraph (1) to the use of hydrogen in industrial applications.

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