

117TH CONGRESS  
1ST SESSION

# S. 3112

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

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IN THE SENATE OF THE UNITED STATES

OCTOBER 28, 2021

Mr. COONS (for himself, Mr. CORNYN, 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 Grant Program, 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 “Hydrogen for Industry  
5 Act of 2021”.

6 **SEC. 2. HYDROGEN TECHNOLOGIES FOR HEAVY INDUSTRY**  
7 **GRANT PROGRAM.**

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

1 16291 et seq.) is amended by adding at the end the fol-  
 2 lowing:

3 **“SEC. 969E. HYDROGEN TECHNOLOGIES FOR HEAVY INDUS-**  
 4 **TRY GRANT PROGRAM.**

5 “(a) DEFINITION OF LOW-INCOME OR DISADVAN-  
 6 TAGED COMMUNITY.—The term ‘low-income or disadvan-  
 7 tagged community’ means a community (including a city,  
 8 town, county, or reasonably isolated and divisible segment  
 9 of a larger municipality) with an annual median household  
 10 income that is less than 100 percent of the statewide an-  
 11 nual median household income for the State in which the  
 12 community is located, according to the most recent decen-  
 13 nial census.

14 “(b) PROGRAM.—Not later than 180 days after the  
 15 date of enactment of the Hydrogen for Industry Act of  
 16 2021, the Secretary shall establish a program, to be  
 17 known as the ‘Hydrogen Technologies for Heavy Industry  
 18 Grant Program’ (referred to in this section as the ‘Pro-  
 19 gram’), under which the Secretary shall award grants to  
 20 demonstrate industrial end-use applications of hydrogen  
 21 for—

22 “(1) iron, steel, and metals manufacturing;

23 “(2) cement manufacturing;

24 “(3) glass manufacturing;

25 “(4) ammonia and fertilizer production;

1           “(5) industrial food processes;

2           “(6) production of synthetic fuels from hydro-  
3           gen, including with carbon oxides;

4           “(7) fuel refining, including biorefining;

5           “(8) chemical synthesis, including synthesis of  
6           methanol and ethylene;

7           “(9) process heaters, including hydrogen com-  
8           bustion with environmental controls; and

9           “(10) any other use of hydrogen for heavy in-  
10          dustry, as determined by the Secretary.

11          “(c) PURPOSE.—The purpose of the Program is to  
12          support the adoption of hydrogen as an emissions reduc-  
13          tion technology for heavy industry, including in applica-  
14          tions where hydrogen is blended with other fuels or feed-  
15          stocks.

16          “(d) DEMONSTRATION PROJECTS AND OTHER AU-  
17          THORIZED PROJECTS.—

18                 “(1) IN GENERAL.—The Secretary shall provide  
19                 grants to commercial-scale demonstration projects  
20                 for end-use applications of hydrogen and other au-  
21                 thorized projects, as described in paragraph (5).

22                 “(2) AMOUNT OF GRANT.—The amount of a  
23                 grant provided under this subsection shall be not  
24                 more than \$400,000,000.

1           “(3) APPLICATION.—An entity seeking a grant  
2 to conduct a demonstration project or other author-  
3 ized project under this subsection shall submit to the  
4 Secretary an application at such time, in such man-  
5 ner, and containing such information as the Sec-  
6 retary may require, including a description of the  
7 manner in which the project—

8           “(A) will contribute to the reduction of  
9 carbon emissions at the applicable facility; and

10           “(B) in the case of a project for industrial  
11 end-use application that already uses hydrogen  
12 at scale, will reduce or avoid emissions of green-  
13 house gases.

14           “(4) SELECTION.—

15           “(A) LIMITATIONS.—The Secretary shall  
16 only provide a grant under this subsection after  
17 reviewing each applicant and application under  
18 paragraph (3) with respect to—

19           “(i) the financial strength of the ap-  
20 plicant;

21           “(ii) the proposed construction sched-  
22 ule;

23           “(iii) the market risk of the tech-  
24 nology that the applicant seeks to dem-  
25 onstrate, as applicable; and

1                   “(iv) the contractor history of the ap-  
2                   plicant.

3                   “(B) PRIORITY.—In providing grants  
4                   under this subsection, the Secretary shall give  
5                   priority to projects that will provide greater net  
6                   impact in avoiding or reducing emissions of  
7                   greenhouse gases.

8                   “(C) OTHER CONSIDERATIONS.—In pro-  
9                   viding grants under this subsection, the Sec-  
10                  retary shall, to the maximum extent practicable,  
11                  award grants for projects that—

12                   “(i) represent a variety of end uses of  
13                   hydrogen;

14                   “(ii) will use at least 50 percent hy-  
15                   drogen blends;

16                   “(iii) will generate the greatest benefit  
17                   to low-income or disadvantaged commu-  
18                   nities; and

19                   “(iv) will maximize creation or reten-  
20                   tion of domestic jobs and provide the high-  
21                   est job quality.

22                   “(5) AUTHORIZED PROJECTS.—Grant amounts  
23                   provided under this subsection may be used—

24                   “(A) to carry out demonstration projects  
25                   for end uses of hydrogen;

1           “(B) to construct a new commercial-scale  
2 facility that will use hydrogen as a fuel or feed-  
3 stock; or

4           “(C) to retool, retrofit, or expand an exist-  
5 ing facility determined to be qualified by the  
6 Secretary to enable use of hydrogen as a fuel or  
7 feedstock in industrial end-use applications of  
8 hydrogen, including at multiple points within a  
9 larger facility.

10          “(6) REQUIREMENTS.—A demonstration project  
11 receiving a grant under this subsection shall—

12           “(A) use technologies that have completed  
13 pilot-scale testing or the equivalent, as deter-  
14 mined by the Secretary;

15           “(B) on completion, demonstrate hydrogen  
16 technologies used by heavy industry; and

17           “(C) conduct hydrogen leakage monitoring,  
18 reporting, and verification programs and leak  
19 detection and repair programs.

20          “(7) COST SHARING.—The non-Federal share  
21 of the cost of a demonstration project carried out  
22 using a grant under this subsection shall be not less  
23 than 20 percent.

24          “(8) ENGINEERING AND DESIGN STUDIES.—  
25 The Secretary may fund front-end engineering and

1 design studies in addition to, or in advance of, pro-  
2 viding a grant for a demonstration project or other  
3 authorized project under this subsection.

4 “(e) APPLICABILITY.—No technology, or level of  
5 emission reduction, shall be treated as adequately dem-  
6 onstrated for purposes of section 111 of the Clean Air Act  
7 (42 U.S.C. 7411), achievable for purposes of best available  
8 control technologies (as defined in section 169 of that Act  
9 (42 U.S.C. 7479)), or achievable in practice for purposes  
10 of the terms defined in section 171 of that Act (42 U.S.C.  
11 7501) solely by reason of the identification of that tech-  
12 nology or level of emission reduction in programs estab-  
13 lished under this Act.

14 “(f) AUTHORIZATION OF APPROPRIATIONS.—There  
15 is authorized to be appropriated to the Secretary to carry  
16 out the Program \$1,200,000,000 for the period of fiscal  
17 years 2022 through 2026.”.

18 (b) CLERICAL AMENDMENT.—The table of contents  
19 of the Energy Policy Act of 2005 (Public Law 109–58;  
20 119 Stat. 600) is amended by inserting after the item re-  
21 lating to section 969D the following:

“Sec. 969E. Hydrogen Technologies for Heavy Industry Grant Program.”.

22 **SEC. 3. STUDY.**

23 (a) IN GENERAL.—Not later than 270 days after the  
24 date of enactment of this Act, the Secretary of Energy,  
25 the Secretary of Commerce, and the Secretary of Trans-

1 portation shall jointly conduct and submit to Congress a  
2 report describing the results of a study—

3 (1) to examine the potential for emissions re-  
4 ductions at industrial facilities through hydrogen ap-  
5 plications, including—

6 (A) the potential use of levelized cost of  
7 carbon abatement, or a similar metric, in ana-  
8 lyzing industrial uses of hydrogen; and

9 (B) the feasibility and impact of incor-  
10 porating levelized cost of carbon abatement to  
11 compare the costs of technology options to re-  
12 duce emissions across a range of industrial ap-  
13 plications;

14 (2) to fully address existing challenges with re-  
15 spect to ensuring the safe use and handling of hy-  
16 drogen and hydrogen-based fuels in industrial sys-  
17 tems, including health and environmental impacts  
18 associated with the leakage of hydrogen and hydro-  
19 gen carriers;

20 (3) to identify and evaluate the feasibility, safe-  
21 ty, and best practices of the use of hydrogen and  
22 ammonia as industrial fuel and feedstock;

23 (4) to examine the feasibility of blending in-  
24 creasing levels of hydrogen with natural gas to sup-  
25 plement process heat requirements;

1           (5) to examine the environmental impacts of  
2           hydrogen combustion in hydrogen-fueled gas tur-  
3           bines as pure hydrogen or at different ratios if used  
4           in blended fuel; and

5           (6) to identify and evaluate considerations for  
6           transport and storage of hydrogen and hydrogen  
7           carriers, including—

8                   (A) at industrial facilities;

9                   (B) in salt caverns, hard rock caverns, and  
10           other dedicated geological storage systems; and

11                   (C) in pipelines.

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

15                   (1) take into account lessons learned from dem-  
16           onstration projects in other industries and projects  
17           in other countries; and

18                   (2) evaluate the applicability of the lessons de-  
19           scribed in paragraph (1) to the use of hydrogen in  
20           industrial applications.

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