

114TH CONGRESS  
1ST SESSION

# S. 1422

To require the Secretary of Energy to establish a comprehensive program to improve education and training for energy- and manufacturing-related jobs to increase the number of skilled workers trained to work in energy and manufacturing-related fields, and for other purposes.

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## IN THE SENATE OF THE UNITED STATES

MAY 21, 2015

Mr. HEINRICH (for himself and Mr. BOOKER) 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 require the Secretary of Energy to establish a comprehensive program to improve education and training for energy- and manufacturing-related jobs to increase the number of skilled workers trained to work in energy and manufacturing-related fields, 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 “Energy Workforce for  
5 the 21st Century Act of 2015”.

6       **SEC. 2. DEFINITIONS.**

7       In this Act:

1           (1) COMMUNITY COLLEGE.—The term “commu-  
2           nity college” has the meaning given the term “junior  
3           or community college” in section 312 of the Higher  
4           Education Act of 1965 (20 U.S.C. 1058).

5           (2) DEPARTMENT.—The term “Department”  
6           means the Department of Energy.

7           (3) ELEMENTARY SCHOOL.—The term “elemen-  
8           tary school” has the meaning given the term in sec-  
9           tion 9101 of the Elementary and Secondary Edu-  
10          cation Act of 1965 (20 U.S.C. 7801).

11          (4) INSTITUTION OF HIGHER EDUCATION.—The  
12          term “institution of higher education” has the  
13          meaning given the term in section 101 of the Higher  
14          Education Act of 1965 (20 U.S.C. 1001).

15          (5) MINORITY-SERVING INSTITUTION.—The  
16          term “minority-serving institution” means—

17                (A) a historically Black college or univer-  
18                sity, which shall have the meaning given the  
19                term “part B institution” in section 322 of the  
20                Higher Education Act of 1965 (20 U.S.C.  
21                1061);

22                (B) a Predominantly Black Institution, as  
23                defined in section 318(b) of such Act (20  
24                U.S.C. 1059e(b));

1 (C) a Hispanic-serving institution, as de-  
2 fined in section 502(a) of such Act (20 U.S.C.  
3 1101a(a)); or

4 (D) a Tribal College or University, as de-  
5 fined in section 316(b) of such Act (20 U.S.C.  
6 1059c(b)).

7 (6) NATIONAL LABORATORY.—The term “Na-  
8 tional Laboratory” has the meaning given the term  
9 in section 2 of the Energy Policy Act of 2005 (42  
10 U.S.C. 15801).

11 (7) PROGRAM.—The term “program” means  
12 the program established under section 3(a).

13 (8) SECONDARY SCHOOL.—The term “sec-  
14 ondary school” has the meaning given the term in  
15 section 9101 of the Elementary and Secondary Edu-  
16 cation Act of 1965 (20 U.S.C. 7801).

17 (9) SECRETARY.—The term “Secretary” means  
18 the Secretary of Energy.

19 (10) STEM.—The term “STEM” means  
20 science, technology, engineering, and mathematics.

21 **SEC. 3. ENERGY AND MANUFACTURING WORKFORCE DE-**  
22 **VELOPMENT.**

23 (a) IN GENERAL.—The Secretary shall establish and  
24 carry out a comprehensive program to improve education  
25 and training for energy- and manufacturing-related jobs

1 in order to increase the number of skilled workers trained  
2 to work in energy- and manufacturing-related fields, in-  
3 cluding by—

4 (1) encouraging underrepresented groups, in-  
5 cluding ethnic minorities, women, veterans, and  
6 socioeconomically disadvantaged individuals to enter  
7 into the STEM fields;

8 (2) encouraging leaders in the education system  
9 of the United States to equip students with the  
10 skills, mentorships, training, and technical expertise  
11 necessary to fill the employment opportunities vital  
12 to managing and operating the energy- and manu-  
13 facturing-related industries of the United States;

14 (3) providing students and other candidates for  
15 employment with the opportunity to gain necessary  
16 skills and certifications for skilled, semiskilled, and  
17 highly skilled energy and manufacturing-related  
18 jobs; and

19 (4) strengthening and more fully engaging pro-  
20 grams of the Department and the National Labora-  
21 tories in carrying out the Minorities in Energy Ini-  
22 tiative of the Department.

23 (b) PRIORITY.—The Secretary shall make providing  
24 education and training underrepresented groups for en-

1 ergy and manufacturing-related jobs a national priority  
2 under the program.

3 (c) DIRECT ASSISTANCE.—

4 (1) IN GENERAL.—In carrying out the program,  
5 the Secretary shall provide direct assistance (includ-  
6 ing financial assistance awards, technical expertise,  
7 mentorships, internships, and partnerships) to sec-  
8 ondary schools, community colleges, workforce devel-  
9 opment organizations, nonprofit organizations, labor  
10 organizations, apprenticeship programs, tribal col-  
11 leges and universities, and minority-serving institu-  
12 tions.

13 (2) DISTRIBUTION.—The Secretary shall dis-  
14 tribute direct assistance under the program in a  
15 manner proportional to the needs and demand for  
16 jobs in the energy- and manufacturing-related indus-  
17 try, consistent with information obtained under sub-  
18 sections (e)(3) and (i).

19 (d) CLEARINGHOUSE.—In carrying out the program,  
20 the Secretary shall establish a clearinghouse—

21 (1) to maintain and update information and re-  
22 sources on training and workforce development pro-  
23 grams for energy- and manufacturing-related jobs;  
24 and

1           (2) to act as a resource, and provide guidance,  
2           for secondary schools, institutions of higher edu-  
3           cation (including community colleges and minority-  
4           serving institutions), workforce development organi-  
5           zations, labor management organizations, and indus-  
6           try organizations that would like to develop and im-  
7           plement energy- and manufacturing-related training  
8           programs.

9           (e) COLLABORATION.—

10           (1) IN GENERAL.—In carrying out the program,  
11           the Secretary shall—

12                   (A) collaborate with secondary schools, in-  
13                   stitutions of higher education (including com-  
14                   munity colleges, minority-serving institutions,  
15                   and tribal colleges and universities), workforce  
16                   training organizations, labor organizations, Na-  
17                   tional Laboratories, State energy offices, State  
18                   boards and local boards (as such terms are de-  
19                   fined in section 3 of the Workforce Innovation  
20                   and Opportunity Act (29 U.S.C. 3102)), and  
21                   energy- and manufacturing-related industries;

22                   (B) in order to share best practices and  
23                   approaches that best suit national, State, and  
24                   local needs, encourage and foster collaboration,  
25                   mentorships, and partnerships among—

1 (i) entities (including labor organiza-  
2 tions, industries, secondary schools, insti-  
3 tutions of higher education (including com-  
4 munity colleges), and workforce develop-  
5 ment organizations) that provide effective  
6 job training programs in energy- and man-  
7 ufacturing-related fields; and

8 (ii) entities (including secondary  
9 schools, institutions of higher education  
10 (including community colleges), and work-  
11 force development programs) that seek to  
12 establish similar job training programs;  
13 and

14 (C) collaborate with the Commissioner of  
15 the Bureau of Labor Statistics, the Secretary of  
16 Commerce, the Director of the Bureau of the  
17 Census, and energy- and manufacturing-related  
18 industries to develop a comprehensive and de-  
19 tailed understanding of the workforce needs and  
20 opportunities of energy- and manufacturing-re-  
21 lated industries.

22 (2) REPORT.—The Secretary shall publish an  
23 annual report on energy- and manufacturing-related  
24 job creation as determined as a result of the collabo-  
25 ration under paragraph (1)(C) and sorted—

1 (A) by the sectors described in subsection  
2 (i); and  
3 (B) by State and region.

4 (f) GUIDELINES FOR EDUCATIONAL INSTITU-  
5 TIONS.—

6 (1) IN GENERAL.—In carrying out the program,  
7 the Secretary, in consultation with the Secretary of  
8 Education, the Secretary of Commerce, the Sec-  
9 retary of Labor, the Director of the National Science  
10 Foundation, and industry, shall develop guidelines  
11 for educational institutions of all levels, including for  
12 elementary schools, secondary schools, community  
13 colleges, and undergraduate and postbaccalaureate  
14 programs of study at institutions of higher edu-  
15 cation, to help provide graduates with the skills nec-  
16 essary to work in energy- and manufacturing-related  
17 jobs.

18 (2) INPUT.—In developing guidelines under  
19 paragraph (1), the Secretary shall solicit input from  
20 the oil, gas, coal, renewable, nuclear, utility, energy-  
21 intensive and advanced manufacturing, and pipeline  
22 industries.

23 (3) ENERGY AND MANUFACTURING EFFICIENCY  
24 AND CONSERVATION INITIATIVES.—The guidelines  
25 developed under paragraph (1) shall include grade-



1 specific guidelines for teaching energy and manufac-  
2 turing efficiency and conservation initiatives to pro-  
3 vide education to students and families.

4 (4) STEM EDUCATION.—The guidelines devel-  
5 oped under paragraph (1) shall promote STEM edu-  
6 cation as STEM relates to job opportunities in  
7 energy- and manufacturing-related fields of study in  
8 elementary schools, secondary schools, and institu-  
9 tions of higher education (including community col-  
10 leges) nationally.

11 (g) OUTREACH TO MINORITY-SERVING INSTITU-  
12 TIONS.—In carrying out the program, the Secretary  
13 shall—

14 (1) give special consideration to increasing out-  
15 reach to minority-serving institutions;

16 (2) make resources available to minority-serving  
17 institutions with the objective of increasing the num-  
18 ber of skilled minorities and women trained to go  
19 into the energy- and manufacturing-related sectors;

20 (3) encourage industry to improve the opportu-  
21 nities available for students of minority-serving insti-  
22 tutions to participate in industry internships and co-  
23 operative work-study programs; and

24 (4) partner with the National Laboratories to  
25 increase the participation of underrepresented

1 groups in internships, fellowships, traineeships, and  
2 employment at the National Laboratories.

3 (h) OUTREACH TO DISPLACED AND UNEMPLOYED  
4 ENERGY AND MANUFACTURING WORKERS.—In carrying  
5 out the program, the Secretary shall—

6 (1) give special consideration to increasing out-  
7 reach to employers and job trainers preparing dis-  
8 placed and unemployed energy and manufacturing  
9 workers for emerging energy- and manufacturing-re-  
10 lated jobs;

11 (2) make resources available to entities serving  
12 displaced and unemployed energy and manufac-  
13 turing workers with the objective of training individ-  
14 uals to reenter the energy and manufacturing work-  
15 force; and

16 (3) encourage the energy- and manufacturing-  
17 related industries to improve opportunities for dis-  
18 placed and unemployed energy and manufacturing  
19 workers to participate in internships and cooperative  
20 work-study programs.

21 (i) GUIDELINES TO DEVELOP SKILLS FOR AN EN-  
22 ERGY AND MANUFACTURING INDUSTRY WORKFORCE.—In  
23 carrying out the program, the Secretary shall consult with  
24 representatives from energy- and manufacturing-related  
25 industries (including the oil, gas, coal, nuclear, utility,

1 pipeline, renewable, petrochemical, manufacturing, and  
2 electrical construction industries) to identify the areas of  
3 highest need in each sector and to develop guidelines for  
4 the skills necessary to develop a workforce trained to go  
5 into the following sectors of the energy- and manufac-  
6 turing-related industries:

7           (1) The energy efficiency industry, including  
8           work—

9                   (A) in energy efficiency, conservation,  
10                   weatherization, or retrofitting; or

11                   (B) as inspectors or auditors.

12           (2) The pipeline industry, including work—

13                   (A) in pipeline construction and mainte-  
14                   nance; or

15                   (B) as engineers or technical advisors.

16           (3) The utility industry, including work as util-  
17           ity workers, linemen, electricians, pole workers, re-  
18           pairmen, scientists, engineers, or mathematicians.

19           (4) The alternative fuels industry, including  
20           work in biofuel development and production.

21           (5) The nuclear industry, including work as sci-  
22           entists, engineers, technicians, mathematicians, or  
23           security personnel.

1           (6) The oil and gas industry, including work as  
2 scientists, engineers, technicians, mathematicians,  
3 petrochemical engineers, or geologists.

4           (7) The renewable energy industry, including  
5 work in the development, manufacturing, and pro-  
6 duction of renewable energy sources (such as solar,  
7 hydropower, wind, or geothermal energy).

8           (8) The coal industry, including work as coal  
9 miners, engineers, developers and manufacturers of  
10 state-of-the-art coal facilities, technology vendors,  
11 coal transportation workers and operators, or mining  
12 equipment vendors.

13           (9) The manufacturing industry, including work  
14 as operations technicians, operations and design in  
15 additive manufacturing, 3-D printing, and advanced  
16 composites, industrial energy efficiency management  
17 systems, including power electronics, and other inno-  
18 vative technologies.

19           (10) The chemical manufacturing industry, in-  
20 cluding work—

21                   (A) in construction (such as welders, pipe-  
22 fitters, or tool and die makers); or

23                   (B) as instrument and electrical techni-  
24 cians, machinists, chemical process operators,

1 chemical engineers, quality and safety profes-  
2 sionals, or reliability engineers.

3 (j) ENROLLMENT IN TRAINING AND APPRENTICE-  
4 SHIP PROGRAMS.—In carrying out the program, the Sec-  
5 retary shall consult with industries, labor organizations,  
6 and community-based workforce organizations to help  
7 identify students and other candidates, including from  
8 underrepresented communities such as minorities, women,  
9 and veterans, to enroll in training and apprenticeship pro-  
10 grams for energy- and manufacturing-related jobs.

11 (k) AUTHORIZATION OF APPROPRIATIONS.—There  
12 are authorized to be appropriated to carry out this section  
13 such sums as are necessary.

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