

113TH CONGRESS  
2D SESSION

# H. R. 4526

To require the Secretary of Energy to establish and carry out a comprehensive program to improve education and training for energy-related jobs.

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## IN THE HOUSE OF REPRESENTATIVES

APRIL 30, 2014

Mr. RUSH (for himself, Mr. WHITFIELD, and Mr. JOHNSON of Ohio) introduced the following bill; which was referred to the Committee on Education and the Workforce

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## A BILL

To require the Secretary of Energy to establish and carry out a comprehensive program to improve education and training for energy-related jobs.

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 “21st Century Energy  
5 Workforce Development Jobs Initiative Act of 2014”.

6 **SEC. 2. FINDINGS.**

7 The Congress finds the following:

8 (1) There are, currently and for well into the  
9 future, significant opportunities for African-Ameri-

1       cans and Hispanic-Americans throughout the energy  
2       industry at each level of education and training, but  
3       raising the educational achievement for large seg-  
4       ments of the upcoming generation is resource inten-  
5       sive and will take decades to achieve, although the  
6       payoff of an increased skilled labor pool would be  
7       enormous to society in general and United States in-  
8       dustry in particular.

9               (2) African-Americans and Hispanic-Americans  
10       represent an important talent pool to help meet the  
11       demands of the projected growth in the energy in-  
12       dustry, and workforce training and education in  
13       business, finance, science, technology, engineering,  
14       and mathematics will prove vital in achieving this  
15       growth, as noted by the American Petroleum Insti-  
16       tute.

17              (3) Improving minority preparation in science,  
18       technology, engineering, and mathematics related  
19       disciplines at the primary and secondary school lev-  
20       els is crucial to increasing the share of minority  
21       science-based degree attainment in 4-year and 2-  
22       year programs of higher education, as well as for in-  
23       creasing attainment of vocational certificates.

24              (4) The rates at which African-Americans and  
25       Hispanic-Americans attain employment in the en-

1       ergy industry is in part related to the choice of the  
2       field of study for college degrees (4-year or 2-year)  
3       and vocational certificates.

4               (5) Data from the National Center for Edu-  
5       cation Statistics suggest that, over the 2001 through  
6       2010 period, African-American and Hispanic-Amer-  
7       ican students chose and completed 4-year college de-  
8       grees applicable to employment in the oil and nat-  
9       ural gas industry at rates one-fifth and one-half, re-  
10      spectively, the rates of the total student population.

11              (6) With respect to 2-year associate degrees  
12      and certificates, data from the National Center for  
13      Education Statistics suggest that over the same time  
14      period, African-American and Hispanic-American  
15      students chose and completed programs of study/  
16      training applicable to employment in the oil and nat-  
17      ural gas industry at rates roughly one-tenth above  
18      and one-third below, respectively, the rates of the  
19      total student population.

20              (7) The American Petroleum Institute projects  
21      525,000 new job opportunities in the oil and natural  
22      gas industry by 2020, with 166,000, or 31 percent  
23      of such jobs, expected to be held by African-Amer-  
24      ican and Hispanic-American workers, and, with for-  
25      ward looking policies, that number could increase to

1 a projected 811,000 new job opportunities, with  
2 more than 285,000, or 35 percent, of such jobs  
3 being filled by minorities, by 2030.

4 (8) The American Petroleum Institute projects  
5 that more than 50 percent of all jobs created in the  
6 oil and natural gas industry by 2020 would be high-  
7 paying skilled and semiskilled blue collar jobs, with  
8 a significant range of opportunities at the scientific/  
9 managerial level requiring a college degree.

10 (9) The American Petroleum Institute projects  
11 that over half of the future potential job growth in  
12 the oil and natural gas industry, approximately  
13 417,000 jobs, is expected in the Gulf region, with  
14 the East region expected to contribute nearly  
15 140,000 job opportunities, the Rockies region nearly  
16 116,000 job opportunities, and the West, Alaska,  
17 and Central regions expected to contribute approxi-  
18 mately 138,000 job opportunities combined.

19 (10) The National Mining Association reports  
20 that the coal mining industry supported a total of  
21 805,680 jobs in 2011. That includes 204,580 direct  
22 jobs, including mine workers (143,520), support ac-  
23 tivities (7,280), and transportation (53,780).

1           (11) Broad occupational categories of potential  
2 job creation in the upstream oil and gas industry in-  
3 clude—

4           (A) management, business, and financial  
5 jobs;

6           (B) professional and related jobs;

7           (C) service jobs;

8           (D) sales and related jobs;

9           (E) office and administrative support jobs;

10          (F) skilled blue collar jobs;

11          (G) semiskilled blue collar jobs; and

12          (H) unskilled blue collar jobs.

13          (12) Potential job creation in the upstream oil  
14 and gas industry by selected detailed occupational  
15 category include—

16          (A) derrick, rotary drill, and service unit  
17 operators;

18          (B) oil and gas roustabouts;

19          (C) operating engineers and other con-  
20 struction workers;

21          (D) equipment operators;

22          (E) construction laborers;

23          (F) first-line supervisors/managers of con-  
24 struction and extraction workers;

25          (G) heavy and tractor-trailer truck drivers;

- 1 (H) pump operators and wellhead pump-  
2 ers;  
3 (I) helpers and other extraction workers;  
4 (J) petroleum engineers; and  
5 (K) secretaries.

6 (13) The National Petroleum Council estimates  
7 that over the next decade 30,000 miles of new long-  
8 distance natural gas pipelines will be needed to man-  
9 age the new sources of shale natural gas supply,  
10 while a 2007 Census Bureau's Survey of Business  
11 Owners estimated that a very small percentage of  
12 pipelines were owned by minority-owned and woman-  
13 owned firms compared to the total owned by non-  
14 minority males.

15 (14) In 2013, the Energy Information Adminis-  
16 tration estimated that relatively low natural gas  
17 prices, maintained by growing shale natural gas pro-  
18 duction, will spur increased use of natural gas in the  
19 industrial and electric power sectors by 16 percent,  
20 from 6.8 trillion cubic feet per year in 2011 to 7.8  
21 trillion cubic feet per year in 2025, while total con-  
22 sumption of natural gas in the United States will  
23 continue to grow in the electric power sector from  
24 16 percent of generation in 2000 to 30 percent in

1       2040, which will lead to a significant number of new  
2       jobs in the natural gas sector.

3           (15) The Energy Information Administration  
4       estimates natural gas production in the United  
5       States will increase annually, outpacing domestic  
6       consumption and making the United States a net ex-  
7       porter of natural gas by 2019, while continued low  
8       levels of liquefied natural gas imports, combined  
9       with increased United States exports of domestically  
10      sourced liquefied natural gas, position the United  
11      States as a net exporter of liquefied natural gas by  
12      2016, creating an abundance of new jobs and invest-  
13      ment opportunities.

14          (16) The Energy Information Administration  
15      estimates that coal-fired electricity generation will  
16      remain a dominant resource in the Nation's total  
17      generation portfolio, representing 34 percent of  
18      United States baseload electricity in 2035.

19          (17) In 2013, a report by the Bloomberg New  
20      Energy Finance research team estimated that clean  
21      energy investment is most likely to grow by 230 per-  
22      cent to a projected \$630 billion annually in 2030,  
23      driven by further improvements in the cost-competi-  
24      tiveness of wind and solar technologies and an in-  
25      crease in the roll-out of non-intermittent clean en-

1       energy sources including hydropower, geothermal, and  
2       biomass, requiring additional investment in science,  
3       technology, engineering, and mathematics education.

4               (18) A 2013 report by the Bloomberg New En-  
5       ergy Finance research team estimated that renew-  
6       able energy projects including wind, solar, hydro-  
7       power, and biomass will account for 70 percent of  
8       new power generation capacity between 2012 and  
9       2030, and, by 2030, renewable energy will account  
10      for half of the generation capacity worldwide, up  
11      from 28 percent in 2012, requiring additional invest-  
12      ment in supporting infrastructure, including long  
13      distance transmission systems, smart grids, storage,  
14      and demand response.

15              (19) The Energy Information Administration  
16      states that since 2005 renewable energy has gar-  
17      nered more than \$1.3 trillion worth of investment  
18      and the Energy Information Administration esti-  
19      mates that global energy consumption will increase  
20      by 47 percent between 2010 and 2035, with clean  
21      energy providing more than half of that new capac-  
22      ity and attracting up to \$5.9 trillion worth of invest-  
23      ment, leading to new employment and investment  
24      opportunities.



1 **SEC. 3. COMPREHENSIVE PROGRAM FOR ENERGY-RELATED**  
2 **JOBS FOR THE 21ST CENTURY.**

3 (a) IN GENERAL.—The Secretary of Energy (in this  
4 Act referred to as the “Secretary”) shall establish and  
5 carry out a comprehensive program to improve education  
6 and training for energy-related jobs in order to increase  
7 the number of skilled minorities and women trained to  
8 work in energy-related jobs, including by—

9 (1) encouraging minority and women students  
10 to enter into the energy science, technology, engi-  
11 neering, and mathematics (in this Act referred to as  
12 “STEM”) fields;

13 (2) ensuring that the Nation’s education system  
14 is equipping students with the skills, training, and  
15 technical expertise necessary to fill the employment  
16 opportunities vital to managing and operating the  
17 Nation’s energy industry; and

18 (3) providing students and other candidates  
19 with the necessary skills and certifications for  
20 skilled, semiskilled, and highly skilled energy-related  
21 jobs.

22 (b) PRIORITY.—The Secretary shall make educating  
23 and training minorities and other workers for energy-re-  
24 lated jobs a national priority under the program estab-  
25 lished under subsection (a).

1           (c) DIRECT ASSISTANCE.—In carrying out the pro-  
2 gram established under subsection (a), the Secretary shall  
3 provide direct assistance (including grants, technical ex-  
4 pertise, mentorships, and partnerships) to community col-  
5 leges, workforce development organizations, and minority-  
6 serving institutions.

7           (d) CLEARINGHOUSE.—In carrying out the program  
8 established under subsection (a), the Secretary shall estab-  
9 lish a clearinghouse to—

10           (1) maintain and update information and re-  
11 sources on training and workforce development pro-  
12 grams for energy-related jobs; and

13           (2) act as a resource, and provide guidance, for  
14 schools, community colleges, universities, workforce  
15 development programs, and industry organizations  
16 that would like to develop and implement energy-re-  
17 lated training programs.

18           (e) COLLABORATION.—In carrying out the program  
19 established under subsection (a), the Secretary—

20           (1) shall collaborate with schools, community  
21 colleges, universities, workforce training organiza-  
22 tions, national laboratories, unions, State energy of-  
23 fices, and the energy industry;

24           (2) shall encourage and foster collaboration,  
25 mentorships, and partnerships among organizations

1 (including unions, industry, schools, community col-  
2 leges, workforce development organizations, and uni-  
3 versities) that currently provide effective job training  
4 programs in the energy field and institutions (in-  
5 cluding schools, community colleges, workforce devel-  
6 opment programs, and universities) that seek to es-  
7 tablish these types of programs in order to share  
8 best practices and approaches that best suit local,  
9 State, and national needs; and

10 (3) shall collaborate with the Energy Informa-  
11 tion Administration and the Bureau of the Census  
12 to develop a comprehensive and detailed under-  
13 standing of the energy workforce needs and opportu-  
14 nities by State and by region.

15 (f) GUIDELINES FOR EDUCATIONAL INSTITU-  
16 TIONS.—

17 (1) IN GENERAL.—In carrying out the program  
18 established under subsection (a), the Secretary, in  
19 collaboration with the Secretary of Education and  
20 the Secretary of Labor, shall develop guidelines for  
21 educational institutions of all levels, including for el-  
22 elementary and secondary schools and community col-  
23 leges and for undergraduate, graduate, and post-  
24 graduate university programs, to help provide grad-

1 uates with the skills necessary to work in energy-re-  
2 lated jobs.

3 (2) INPUT.—The Secretary shall solicit input  
4 from the oil, gas, coal, renewable, nuclear, utility,  
5 and pipeline industries in developing guidelines  
6 under paragraph (1).

7 (3) ENERGY EFFICIENCY AND CONSERVATION  
8 INITIATIVES.—The guidelines developed under para-  
9 graph (1) shall include grade-specific guidelines for  
10 teaching energy efficiency and conservation initia-  
11 tives to educate students and families.

12 (4) STEM EDUCATION.—The guidelines devel-  
13 oped under paragraph (1) shall promote STEM edu-  
14 cation as it relates to job opportunities in energy-re-  
15 lated fields of study in schools, community colleges,  
16 and universities nationally.

17 (g) OUTREACH TO MSIS.—In carrying out the pro-  
18 gram established under subsection (a), the Secretary  
19 shall—

20 (1) give special consideration to increasing out-  
21 reach to minority serving institutions (including his-  
22 torically black colleges and universities, predomi-  
23 nantly black institutions, Hispanic serving institu-  
24 tions, and tribal institutions);

1           (2) make resources available to minority serving  
2           institutions with the objective of increasing the num-  
3           ber of skilled minorities and women trained to go  
4           into the energy sector; and

5           (3) encourage industry to improve the opportu-  
6           nities for students of minority serving institutions to  
7           participate in industry internships and cooperative  
8           work/study programs.

9           (h) GUIDELINES TO DEVELOP SKILLS FOR AN EN-  
10          ERGY INDUSTRY WORKFORCE.—In carrying out the pro-  
11          gram established under subsection (a), the Secretary shall  
12          collaborate with representatives from the energy industry  
13          (including the oil, gas, coal, nuclear, utility, pipeline, re-  
14          newable, and nuclear sectors) to identify the areas of high-  
15          est need in each sector and to develop guidelines for the  
16          skills necessary to develop a workforce trained to go into  
17          the following sectors of the energy industry:

18                 (1) Energy efficiency industry, including work  
19                 in energy efficiency, conservation, weatherization, or  
20                 retrofitting, or as inspectors or auditors.

21                 (2) Pipeline industry, including work in pipeline  
22                 construction and maintenance or work as engineers  
23                 or technical advisors.

1           (3) Utility industry, including as utility work-  
2           ers, linemen, electricians, pole workers, or repair-  
3           men.

4           (4) Alternative fuels, including work in biofuel  
5           development and production.

6           (5) Nuclear industry, including work as sci-  
7           entists, engineers, technicians, mathematicians, or  
8           security personnel.

9           (6) Oil and gas industry, including work as sci-  
10          entists, engineers, technicians, mathematicians, pe-  
11          trochemical engineers, or geologists.

12          (7) Renewable industry, including work in the  
13          development and production of renewable energy  
14          sources (such as solar, hydropower, wind, or geo-  
15          thermal energy).

16          (8) Coal industry, including work as coal min-  
17          ers, engineers, developers and manufacturers of  
18          state-of-the-art coal facilities, technology vendors,  
19          coal transportation workers and operators, and min-  
20          ing equipment vendors.

21          (i) ENROLLMENT IN TRAINING AND APPRENTICE-  
22          SHIP PROGRAMS.—In carrying out the program estab-  
23          lished under subsection (a), the Secretary shall work with  
24          organized labor and community-based workforce organiza-  
25          tions to help identify students and other candidates, in-

- 1 cluding from historically underserved communities such as
- 2 minorities, women, and veterans, to enroll into training
- 3 and apprenticeship programs for energy-related jobs.

