

[DISCUSSION DRAFT]

**TITLE II—21ST CENTURY
WORKFORCE**

**SEC. 2101. ENERGY AND MANUFACTURING WORKFORCE DE-
VELOPMENT.**

(a) IN GENERAL.—The Secretary of Energy (in this section referred to as the “Secretary”) shall establish and carry out a comprehensive program to improve education and training for energy and manufacturing-related jobs in order to increase the number of skilled workers trained to work in energy and manufacturing-related fields, including by—

(1) encouraging underrepresented groups, including religious and ethnic minorities, women, veterans, and socioeconomically disadvantaged individuals to enter into the science, technology, engineering, and mathematics (in this section referred to as “STEM”) fields;

(2) encouraging the Nation’s education system to equip students with the skills, mentorships, training, and technical expertise necessary to fill the employment opportunities vital to managing and oper-

1 ating the Nation's energy and manufacturing indus-
2 tries;

3 (3) providing students and other candidates for
4 employment with the necessary skills and certifi-
5 cations for skilled, semiskilled, and highly skilled en-
6 ergy and manufacturing-related jobs; and

7 (4) strengthening and more fully engaging De-
8 partment of Energy programs and labs in carrying
9 out the Department's Minorities in Energy Initia-
10 tive.

11 (b) PRIORITY.—The Secretary shall make educating
12 and training underrepresented groups for energy and
13 manufacturing-related jobs a national priority under the
14 program established under subsection (a).

15 (c) DIRECT ASSISTANCE.—In carrying out the pro-
16 gram established under subsection (a), the Secretary shall
17 provide direct assistance (including financial assistance
18 awards, technical expertise, mentorships, internships, and
19 partnerships) to schools, community colleges, workforce
20 development organizations, nonprofit organizations, labor
21 organizations, apprenticeship programs, and minority
22 serving institutions. The Secretary shall distribute direct
23 assistance in a manner proportional to energy and manu-
24 facturing industry needs and demand for jobs, consistent

1 with information obtained under subsections (e)(3) and
2 (i).

3 (d) CLEARINGHOUSE.—In carrying out the program
4 established under subsection (a), the Secretary shall estab-
5 lish a clearinghouse to—

6 (1) maintain and update information and re-
7 sources on training and workforce development pro-
8 grams for energy and manufacturing-related jobs;
9 and

10 (2) act as a resource, and provide guidance, for
11 schools, community colleges, universities (including
12 minority serving institutions), workforce develop-
13 ment programs, labor management organizations,
14 and industry organizations that would like to de-
15 velop and implement energy and manufacturing-re-
16 lated training programs.

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

19 (1) shall collaborate with schools, community
20 colleges, universities (including minority serving in-
21 stitutions), workforce training organizations, na-
22 tional laboratories, unions, State energy offices,
23 workforce investment boards, and the energy and
24 manufacturing industries;

1 (2) shall encourage and foster collaboration,
2 mentorships, and partnerships among organizations
3 (including unions, industry, schools, community col-
4 leges, workforce development organizations, and col-
5 leges and universities) that currently provide effec-
6 tive job training programs in the energy and manu-
7 facturing fields and institutions (including schools,
8 community colleges, workforce development pro-
9 grams, and colleges and universities) that seek to es-
10 tablish these types of programs in order to share
11 best practices and approaches that best suit local,
12 State, and national needs; and

13 (3) shall collaborate with the Bureau of Labor
14 Statistics, the Department of Commerce, the Bureau
15 of the Census, and the energy and manufacturing
16 industries to develop a comprehensive and detailed
17 understanding of the energy and manufacturing
18 workforce needs and opportunities by State and by
19 region, and publish an annual report on energy and
20 manufacturing job creation by the sectors enumer-
21 ated in subsection (i).

22 (f) GUIDELINES FOR EDUCATIONAL INSTITU-
23 TIONS.—

24 (1) IN GENERAL.—In carrying out the program
25 established under subsection (a), the Secretary, in

1 collaboration with the Secretary of Education, the
2 Secretary of Commerce, the Secretary of Labor, the
3 National Science Foundation, and industry shall de-
4 velop guidelines for educational institutions of all
5 levels, including for elementary and secondary
6 schools and community colleges and for under-
7 graduate, graduate, and postgraduate university pro-
8 grams, to help provide graduates with the skills nec-
9 essary to work in energy and manufacturing-related
10 jobs.

11 (2) INPUT.—The Secretary shall solicit input
12 from the oil, gas, coal, renewable, nuclear, utility,
13 energy-intensive and advanced manufacturing, and
14 pipeline industries in developing guidelines under
15 paragraph (1).

16 (3) ENERGY AND MANUFACTURING EFFICIENCY
17 AND CONSERVATION INITIATIVES.—The guidelines
18 developed under paragraph (1) shall include grade-
19 specific guidelines for teaching energy and manufac-
20 turing efficiency and conservation initiatives to edu-
21 cate students and families.

22 (4) STEM EDUCATION.—The guidelines devel-
23 oped under paragraph (1) shall promote STEM edu-
24 cation as it relates to job opportunities in energy

1 and manufacturing-related fields of study in schools,
2 community colleges, and universities nationally.

3 (g) OUTREACH TO MINORITY SERVING INSTITU-
4 TIONS.—In carrying out the program established under
5 subsection (a), the Secretary shall—

6 (1) give special consideration to increasing out-
7 reach to minority serving institutions (including his-
8 torically black colleges and universities, predomi-
9 nantly black institutions, Hispanic serving institu-
10 tions, and tribal institutions);

11 (2) make resources available to minority serving
12 institutions with the objective of increasing the num-
13 ber of skilled minorities and women trained to go
14 into the energy and manufacturing sectors;

15 (3) encourage industry to improve the opportu-
16 nities for students of minority serving institutions to
17 participate in industry internships and cooperative
18 work/study programs; and

19 (4) partner with the Department of Energy lab-
20 oratories to increase underrepresented groups' par-
21 ticipation in internships, fellowships, traineeships,
22 and employment at all Department of Energy lab-
23 oratories.

24 (h) OUTREACH TO DISPLACED AND UNEMPLOYED
25 ENERGY AND MANUFACTURING WORKERS.—In carrying

1 out the program established under subsection (a), the Sec-
2 retary shall—

3 (1) give special consideration to increasing out-
4 reach to employers and job trainers preparing dis-
5 placed and unemployed energy and manufacturing
6 workers for emerging energy and manufacturing
7 jobs;

8 (2) make resources available to institutions
9 serving displaced and unemployed energy and manu-
10 facturing workers with the objective of training indi-
11 viduals to re-enter the energy and manufacturing
12 workforce; and

13 (3) encourage the energy and manufacturing in-
14 dustries to improve opportunities for displaced and
15 unemployed energy and manufacturing workers to
16 participate in internships and cooperative work/study
17 programs.

18 (i) GUIDELINES TO DEVELOP SKILLS FOR AN EN-
19 ERGY AND MANUFACTURING INDUSTRY WORKFORCE.—In
20 carrying out the program established under subsection (a),
21 the Secretary shall collaborate with representatives from
22 the energy and manufacturing industries (including the
23 oil, gas, coal, nuclear, utility, pipeline, renewable, petro-
24 chemical, manufacturing, and electrical construction sec-
25 tors) to identify the areas of highest need in each sector

1 and to develop guidelines for the skills necessary to de-
2 velop a workforce trained to go into the following sectors
3 of the energy and manufacturing sectors:

4 (1) Energy efficiency industry, including work
5 in energy efficiency, conservation, weatherization, or
6 retrofitting, or as inspectors or auditors.

7 (2) Pipeline industry, including work in pipeline
8 construction and maintenance or work as engineers
9 or technical advisors.

10 (3) Utility industry, including as utility work-
11 ers, linemen, electricians, pole workers, repairmen,
12 scientists, engineers, or mathematicians.

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

15 (5) Nuclear industry, including work as sci-
16 entists, engineers, technicians, mathematicians, or
17 security personnel.

18 (6) Oil and gas industry, including work as sci-
19 entists, engineers, technicians, mathematicians, pe-
20 trochemical engineers, or geologists.

21 (7) Renewable industry, including work in the
22 development, manufacturing, and production of re-
23 newable energy sources (such as solar, hydropower,
24 wind, or geothermal energy).

1 (8) Coal industry, including work as coal min-
2 ers, engineers, developers and manufacturers of
3 state-of-the-art coal facilities, technology vendors,
4 coal transportation workers and operators, or mining
5 equipment vendors.

6 (9) Manufacturing industry, including work as
7 operations technicians, operations and design in ad-
8 ditive manufacturing, 3-D printing, and advanced
9 composites, industrial energy efficiency management
10 systems, including power electronics, and other inno-
11 vative technologies.

12 (10) Chemical manufacturing industry, includ-
13 ing work in construction (such as welders, pipe-
14 fitters, and tool and die makers) or as instrument
15 and electrical technicians, machinists, chemical proc-
16 ess operators, chemical engineers, quality and safety
17 professionals, and reliability engineers.

18 (j) ENROLLMENT IN TRAINING AND APPRENTICE-
19 SHIP PROGRAMS.—In carrying out the program estab-
20 lished under subsection (a), the Secretary shall work with
21 industry, organized labor, and community-based workforce
22 organizations to help identify students and other can-
23 didates, including from underrepresented communities
24 such as minorities, women, and veterans, to enroll into

- 1 training and apprenticeship programs for energy and
- 2 manufacturing-related jobs.