[DISCUSSION DRAFT]

TITLE II—21ST CENTURY WORKFORCE

SEC. 2101. ENERGY AND MANUFACTURING WORKFORCE DEVELOPMENT.

(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-
ating the Nation’s energy and manufacturing industries;

(3) providing students and other candidates for employment with the necessary skills and certifications for skilled, semiskilled, and highly skilled energy and manufacturing-related jobs; and

(4) strengthening and more fully engaging Department of Energy programs and labs in carrying out the Department’s Minorities in Energy Initiative.

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

(c) DIRECT ASSISTANCE.—In carrying out the program established under subsection (a), the Secretary shall provide direct assistance (including financial assistance awards, technical expertise, mentorships, internships, and partnerships) to schools, community colleges, workforce development organizations, nonprofit organizations, labor organizations, apprenticeship programs, and minority serving institutions. The Secretary shall distribute direct assistance in a manner proportional to energy and manufacturing industry needs and demand for jobs, consistent
with information obtained under subsections (e)(3) and (i).

(d) CLEARINGHOUSE.—In carrying out the program established under subsection (a), the Secretary shall establish a clearinghouse to—

(1) maintain and update information and resources on training and workforce development programs for energy and manufacturing-related jobs; and

(2) act as a resource, and provide guidance, for schools, community colleges, universities (including minority serving institutions), workforce development programs, labor management organizations, and industry organizations that would like to develop and implement energy and manufacturing-related training programs.

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

(1) shall collaborate with schools, community colleges, universities (including minority serving institutions), workforce training organizations, national laboratories, unions, State energy offices, workforce investment boards, and the energy and manufacturing industries;
(2) shall encourage and foster collaboration, mentorships, and partnerships among organizations (including unions, industry, schools, community colleges, workforce development organizations, and colleges and universities) that currently provide effective job training programs in the energy and manufacturing fields and institutions (including schools, community colleges, workforce development programs, and colleges and universities) that seek to establish these types of programs in order to share best practices and approaches that best suit local, State, and national needs; and

(3) shall collaborate with the Bureau of Labor Statistics, the Department of Commerce, the Bureau of the Census, and the energy and manufacturing industries to develop a comprehensive and detailed understanding of the energy and manufacturing workforce needs and opportunities by State and by region, and publish an annual report on energy and manufacturing job creation by the sectors enumerated in subsection (i).

(f) GUIDELINES FOR EDUCATIONAL INSTITUTIONS.—

(1) IN GENERAL.—In carrying out the program established under subsection (a), the Secretary, in
collaboration with the Secretary of Education, the Secretary of Commerce, the Secretary of Labor, the National Science Foundation, and industry shall develop guidelines for educational institutions of all levels, including for elementary and secondary schools and community colleges and for undergraduate, graduate, and postgraduate university programs, to help provide graduates with the skills necessary to work in energy and manufacturing-related jobs.

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

(3) Energy and Manufacturing Efficiency and Conservation Initiatives.—The guidelines developed under paragraph (1) shall include grade-specific guidelines for teaching energy and manufacturing efficiency and conservation initiatives to educate students and families.

(4) STEM Education.—The guidelines developed under paragraph (1) shall promote STEM education as it relates to job opportunities in energy
and manufacturing-related fields of study in schools, community colleges, and universities nationally.

(g) **OUTREACH TO MINORITY SERVING INSTITUTIONS.—** In carrying out the program established under subsection (a), the Secretary shall—

(1) give special consideration to increasing outreach to minority serving institutions (including historically black colleges and universities, predominantly black institutions, Hispanic serving institutions, and tribal institutions);

(2) make resources available to minority serving institutions with the objective of increasing the number of skilled minorities and women trained to go into the energy and manufacturing sectors;

(3) encourage industry to improve the opportunities for students of minority serving institutions to participate in industry internships and cooperative work/study programs; and

(4) partner with the Department of Energy laboratories to increase underrepresented groups’ participation in internships, fellowships, traineeships, and employment at all Department of Energy laboratories.

(h) **OUTREACH TO DISPLACED AND UNEMPLOYED ENERGY AND MANUFACTURING WORKERS.—** In carrying
out the program established under subsection (a), the Secretary shall—

(1) give special consideration to increasing outreach to employers and job trainers preparing displaced and unemployed energy and manufacturing workers for emerging energy and manufacturing jobs;

(2) make resources available to institutions serving displaced and unemployed energy and manufacturing workers with the objective of training individuals to re-enter the energy and manufacturing workforce; and

(3) encourage the energy and manufacturing industries to improve opportunities for displaced and unemployed energy and manufacturing workers to participate in internships and cooperative work/study programs.

(i) Guidelines to Develop Skills for an Energy and Manufacturing Industry Workforce.—In carrying out the program established under subsection (a), the Secretary shall collaborate with representatives from the energy and manufacturing industries (including the oil, gas, coal, nuclear, utility, pipeline, renewable, petrochemical, manufacturing, and electrical construction sectors) to identify the areas of highest need in each sector
and to develop guidelines for the skills necessary to develop a workforce trained to go into the following sectors of the energy and manufacturing sectors:

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

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

(3) Utility industry, including as utility workers, linemen, electricians, pole workers, repairmen, scientists, engineers, or mathematicians.

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

(5) Nuclear industry, including work as scientists, engineers, technicians, mathematicians, or security personnel.

(6) Oil and gas industry, including work as scientists, engineers, technicians, mathematicians, petrochemical engineers, or geologists.

(7) Renewable industry, including work in the development, manufacturing, and production of renewable energy sources (such as solar, hydropower, wind, or geothermal energy).
(8) Coal industry, including work as coal miners, engineers, developers and manufacturers of state-of-the-art coal facilities, technology vendors, coal transportation workers and operators, or mining equipment vendors.

(9) Manufacturing industry, including work as operations technicians, operations and design in additive manufacturing, 3-D printing, and advanced composites, industrial energy efficiency management systems, including power electronics, and other innovative technologies.

(10) Chemical manufacturing industry, including work in construction (such as welders, pipe-fitters, and tool and die makers) or as instrument and electrical technicians, machinists, chemical process operators, chemical engineers, quality and safety professionals, and reliability engineers.

(j) ENROLLMENT IN TRAINING AND APPRENTICESHIP PROGRAMS.—In carrying out the program established under subsection (a), the Secretary shall work with industry, organized labor, and community-based workforce organizations to help identify students and other candidates, including from underrepresented communities such as minorities, women, and veterans, to enroll into
training and apprenticeship programs for energy and manufacturing-related jobs.