

Draft comments for state-specific groups to tailor and submit on state-level WIOA and Perkins V plans –

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Incorporating sustainability, climate and environmental skills into secondary career and technical education (CTE) programming and related higher education partnerships.

Developed by:

The Campaign for Environmental Literacy

and

The North American Association for Environmental Education.

The following comments were drafted for submission by consortia of state and local environmental and climate education organizations to encourage state-level education agencies and workforce development councils to comprehensively build green skills in career and technical education programs. The comments can be adapted to the particular educational circumstances and workforce priorities of that state.

Dear _____

We the undersigned organizations respectfully offer the following comments, supporting research and recommendations regarding the incorporation of sustainability and environmental knowledge, skills and abilities into the ____ name of state _____ Perkins V statewide career and technical education (CTE) plan and state Workforce Innovation and Opportunity Act (WIOA) plan.

We have two basic reasons for offering these comments:

First, employers across the U.S. including in _____ name of state _____ are placing a greater emphasis on hiring employees with sustainability and environmental skills, and

Second, various analytic reports indicate that there is a growing gap between this hiring emphasis and the availability of adequately prepared and skilled employee prospects to fill this emerging need.

On the first point, surveys show that employers in most economic sectors, but particularly energy, transportation, manufacturing and logistics, agriculture, food and forestry, architecture and construction, information and computing technology, waste management, science (STEM), financing and insurance, are seeking employees and leadership with knowledge, skills and abilities in sustainability and the environment.

On the second point, studies show that employers of large companies and small and medium sized enterprises (SMEs) are seeking employees with these “green” skills in greater numbers than the current employment training pipeline is providing. There are many of these green skills that are specific to certain industries such as wind and solar energy or electric vehicle production but

there are many more job sectors in which more general and transferrable green skills will be needed.

Our detailed comments are as follows:

The value and reach of CTE in secondary and higher education.

As you know, in 2023, some 12 million high school students were enrolled in career and technical education courses with close to 40% being core CTE students. As you also know, CTE is the heart of _____ name of state’s _____ school-to-work programming and has curricula organized around career themes. CTE also often offers internships, pre-apprenticeships, apprenticeships and other work-based practicums and learning experiences, and provides opportunities to earn industry-recognized credentials and college credits while still in high school. CTE programs also appear to work particularly well, according to the MRDC Cater for Career and Technical Education, for students “who have lagged in educational attainment, including young men and students with disabilities.” It can also be an effective pathway out of poverty conditions for many lower income students. CTE programs reach across the U.S. economy. Examples of CTE common career clusters include:

- *Advanced Manufacturing*
- *Agriculture, Food, and Natural Resources*
- *Architecture and Construction*
- *Arts, Audio/Visual Technology, and Communications*
- *Business Management and Administration*
- *Education and Training*
- *Finance*
- *Government and Public Administration*
- *Health Science*
- *Hospitality and Tourism*
- *Human Services*
- *Information Technology*
- *Law, Public Safety, Corrections, and Security*
- *Marketing, Distribution and Logistics*
- *STEM (science, technology, engineering, and mathematics)*
- *Transportation*

Our organizations, working on the sound economics of environmental and sustainability education, recognize the many academic and life skills that are developed via CTE programs. It is well [documented](#) that students with CTE backgrounds earn significantly higher incomes eight years after graduation. They also have higher high school graduation rates and significantly higher employment rates. CTE students are also more likely to achieve higher education degrees and advanced certifications. CTE is particularly able to, among other things, provide future workers with the professional technician skills. These technician positions comprise 30 million jobs in the U.S. These “middle skilled” jobs are seeing a significant supply gap in recent years and it is well-documented that CTE is well-positioned to address this need.

The accelerating U.S. economic shift toward sustainability and environmental conservation.

J.P. Morgan, in a January 2024 round-up report entitled [Where is Sustainability Headed in 2024](#), surveyed financial experts across the Company about what they are seeing with regard to business opportunities in sustainability and the environment. They noted that it is evident that the economy is undergoing major changes in energy production, efficiency and management, changes in financing and risk assessment and management, and a general shift toward corporate environment, social and governance (ESG) strategies. Analysts are also seeing that the technology sector, utilities, and capital markets including supply chains, are all advancing in the direction of becoming more sustainable. The movement toward sustainability and a greener economy will require an army of well-trained workers. To build a healthy pipeline of skilled labor, policymakers should apply lessons from a robust body of evidence about successful career and technical education programs for high school students and how they create pathways for careers in the green economy.

New research says employers are actively seeking skills in sustainability and the environment.

An important 2023 study by LinkedIn, entitled [Global Green Skills Report 2023](#), looked at the filling of more than 15,000 jobs as a sample of what is occurring with respect to jobs and skills in the environment and sustainability or what they define as green jobs and green job skills. The study found that “the increase in employer demand for green skills is outpacing the supply, raising the prospect of an imminent green skills shortage. Between 2022 and 2023 alone, the share of green talent in the workforce rose by a median of 12.3% across the 48 countries they examined, while the share of job postings requiring at least one green skill grew nearly twice as quickly — by a median of 22.4%.”

LinkedIn says that “our study reveals that just one in eight workers have green skills.” This is contributing to a gap in skills that employers are hoping to see in their workers. LinkedIn is recommending that the most promising path forward is through a skills-based (compared to a job-based) approach to greening the workforce. By breaking down roles into specific skill sets and capabilities, educators and job preparation programs can develop talent strategies that recognize individuals for the capabilities they possess. And, by thinking of climate-related jobs as collections of skills, specifically “green skills,” they can expand the talent pool available to address growing sustainability needs. LinkedIn says: “just as most roles now require digital skills, jobs ranging from procurement specialist to fleet manager to product designer to head chef can be performed in a more sustainable way if workers have green skills.”

According to [Forbes](#), the LinkedIn data also suggests that having green skills makes jobs especially resilient during times of economic uncertainty. LinkedIn notes: “even as overall hiring slowed over the past year, green hiring bucked that trend. While overall hiring slowed globally between February 2022 and February 2023, job postings requiring at least one green skill have grown by a median of 15.2% over the same period.” The report found that the concentration of ‘green talent’ in the workforce—those who hold a green job or list at least one green skill on their

LinkedIn profile—is growing in every one of the 48 countries included in the study, including in the U.S. The share of green talent grew by 5.4% per year over that period, while the share of jobs requiring at least one green skill grew by 9.2%. The median LinkedIn hiring rate for workers with at least one green skill is 29% higher than the workforce average.

Definitions of sustainability and environmental skills

There is no single definition or list of what is meant by skills in sustainability and the environment or “green skills” but most analysts seem to place them in two categories. The first is in systems management and leadership skills. Green skills involve having the ability to connect the dots on many cause-and-effect relationships as the environment and weather patterns become more volatile and less predictable. These changing patterns will influence farming, silviculture, water management, home and building development, logistics, and more. Workers, particularly in management, will need to understand hazards and risks, insurance and investing, supply chains, and ancillary business impacts.

The second set of skills are more technical in nature and include skills that can help employees’ transition to green jobs as such jobs become more common. They include skills in such areas as: carbon accounting, drinking water quality measurement, energy engineering, energy conservation, carbon credit measurement, carbon emissions assessment, energy auditing, hazard and risk management and communication, environmental monitoring and protection programming, emissions testing, water conservation and efficient agricultural irrigation, soil conservation, solar, wind and geothermal energy, land conservation approaches, waste management and disposal, landscape management, tree preservation, and greener product and service procurement.

MDRC’s Center for Effective Career and Technical Education calls for a [more coordinated](#) nationwide educational effort at the federal and state level. This is also supported by Advance CTE which, in 2022, announced the relaunch of an initiative to modernize the National Career Clusters Framework. This work is led by two national partners and supported by a National Advisory Committee, Industry Advisory Groups and other avenues to receive input from all stakeholders involved in delivering and experiencing the [Framework](#). A new Framework will be unveiled in late 2024.

Work on the greening of CTE career clusters traces back decades but certainly to 2010 when the National Association of State Directors of CTE piloted the Green/Sustainability Knowledge and Skills Statements project, providing [supplemental skill standards](#) that could complement the Career Clusters™ Knowledge and Skills Statements of CTE programs. The initiative developed additional standards specifically for six Career Clusters™ that, as of 2012, were the most likely to experience the greatest need for green workers and significant impact by technological advancement. Broad standards were developed for all 16 Career Clusters™ and industry-specific standards were created for Agriculture, Food & Natural Resources; Architecture & Construction;

Information Technology Manufacturing; Science, Technology, Engineering & Mathematics; and Transportation, Distribution & Logistics. The notion of the standards is to infuse the green trends that are impacting already existing sectors and jobs. A student in an Architecture & Construction CTE program, for instance, would learn the knowledge and skills involved with building a home. With the green standards infused, that student would also learn about using recycled materials or designing energy-efficient features for the home. standards. The standards were designed to frame what teachers should use in their CTE programs so that students can have the knowledge and skills to work with the green-industry components of their potential careers.

Growing student interest in sustainability, energy and environmental solutions.

Research [indicates](#) that one half of U.S. high school-aged students are worried or very worried about the future of the environment, climate and weather stability. High schoolers' demand for climate education in the classroom, for example, has been [documented](#) at 80% to 90% levels. Educating young people on how to comprehend and work on science and technology-based solutions to these issues is a particularly effective way for CTE programs to address this concern and be relevant to students. Understanding business growth, merchandizing, risk management, financing and other economic principles can also be helpful to turning environmental concerns into professions and prosperity.

We have the following recommendations for _____ name of state's _____ Perkins V and WIOA plans:

- Infuse sustainability and environment goals into the vision and goals statements of statewide workforce development boards and the statewide comprehensive workforce needs assessments,
- Assess the significance of having skills in sustainability and the environment in overall statewide employability skills and incorporate those skill statements into official state definitions of employability skills,
- Support sustainability and environment skills development via workforce development scholarship programs and other grants and financial support,
- Conduct state-level review, refinement, and adoption of green skills standards in career clusters in accordance with leading industries and employment sectors in the state (such as: agriculture and forestry, energy, manufacturing, construction and engineering, STEM and health care and more.) This review should include: detailed identification of sustainability and environmental skills that are appropriate for those sectors such as skills in greener technologies, environmental risk assessment, waste management, energy and water conservation, green procurement and more.

- Support public and stakeholder awareness of the increasing role that having skills in sustainability and the environment will have future job markets and employability.
- Develop facts sheets and guidance to local education agencies (LEAs) on tools and techniques for the inclusion of green skills development in localized CTE instruction and workplace programming and financial support to include:
 - Support for CTE educator professional development for the infusion of basic green skills into ongoing instructional work in accordance with career clusters and appropriate job and career development.
 - Support and guidance to efforts for CTE educators to work with employers to incorporate green skills into work-based programs and worksite activities including pre-apprenticeship and apprenticeship programs,
 - Support for policies that support formal connections between high schools, community colleges and/or other institutions of higher education, that support green skills education and training as part of dual certification and concurrent enrollment programs,
 - Support efforts to use school facilities, engineering systems, grounds management, food services, and other physical plant elements for development of skills in sustainability and the environment.
 - Support for efforts of school-based career counselors to learn more about basic and transferable green skills and how they fit with career cluster-based instruction, student employability and local employer expectations,
 - Support green skills education for those engaged in official and sanctioned CTE-related mentoring relationships.
 - Support LEAs in assessments of localized employment markets and the role of green skills in fulfilling current and future employer needs.
 - Support efforts of LEAs to include green skills experts on business advisory committees and local workforce development boards.

We strongly support the above rationale and recommendations and appreciate the opportunity to submit these comments. Know that we stand ready to meet with you and discuss our concerns and recommendations in more detail and to continue to work with you though plan implementation.

Sincerely,

List of organizations

