

ENERGY EFFICIENCY AND CONSERVATION
BLOCK GRANT (EECBG) PROGRAM

Key Activities Summary

Blueprint 6: Workforce Development

This Key Activities Summary provides a concise overview of the **Workforce Development**. DOE plans to provide technical assistance support to all entities who select this Blueprint, which may include one-on-one attention from DOE or national lab experts, webinars, and peer learning opportunities.



What

Workforce development is a planned approach to enhance and broaden the skills of individuals outside the workforce seeking employment, entry-level workers looking for job growth, and experienced workers in changing industries. The aim of workforce development is to foster prosperity for individuals, communities, and businesses. In practice, workforce development means providing individuals with training, continuing education, and professional development opportunities to maximize their job success and career pathway. Successful approaches to workforce development engage multiple stakeholders from the community, educational institutions, and potential employers. Initiatives should consider areas of the clean energy industry most in need of trained workers and be designed to lead successful participants to quality jobs.



Justice and Equity

Fostering local job opportunities for people in disadvantaged communities is essential to creating a fairer and more just economy.

Why

The nature of energy jobs is evolving over time, with fewer news jobs being created each year in the fossil fuel industries (like coal mining or in petroleum) and a growing number of jobs in the clean energy technology areas (like installation of rooftop solar or energy efficient appliances).¹ From an individual's perspective, workforce development may support transitioning from one industry to another, perhaps from a shrinking industry to one with more opportunities. It could lead to increased income, improved fringe benefits (e.g., medical insurance or retirement savings), increased job security, and more options for long-term, high quality career pathways. For employers the benefits could include greater operational efficiency and increases in employee productivity, satisfaction and retention. Governments may benefit from new income tax revenue and reduced human services expenditures.

According to the White House, the Bipartisan Infrastructure Investment and Jobs Act (IIJA) will create “good-paying, union jobs. With the President’s Build Back Better Agenda, these investments will add, on average, around 2 million jobs per year over the course of the decade, while accelerating America’s path to full employment and increasing labor force participation.”²



¹Source:

**Updated Fact Sheet: Bipartisan
Infrastructure Investment and Jobs Act**

²Source:

United States Energy and Employment Report

Key Activities

These selected Key Activities are suggestions of important steps a government could take to begin or make progress on their workforce development journey. EECBG Program awardees that utilize a blueprint will receive expedited application review from DOE. Applicants must execute at least one of the key activities listed under each selected blueprint but should avoid going beyond the recommended activities. Going beyond these key activities may trigger additional reviews of your EECBG Program project to ensure you're meeting National Environmental Policy Act (NEPA), historic preservation, and/or other federal regulations. While each step is important, they should be seen as a guide. Awardees should determine their own priority activities based on their local context.

- 1 **Workforce Needs Assessment**
- 2 **Program Design and Curriculum Development**
- 3 **Stakeholder Engagement**
- 4 **Paying Trainers and Trainees Including Supplemental (Wraparound) Services**



1

Workforce Needs Assessment

2

3

4

Strategic planning is critical to the long-term success of any workforce development effort. A needs assessment or gap analysis can be a good place to start before a program is designed or a curriculum is fully developed. Understanding the gaps in your community's labor force, the current and future needs for certain skills, and whether certain types of clean energy industries are better suited than others for your region will be good to understand before designing a workforce development program and curriculum.

Most of the occupations involved in the delivery of clean energy are familiar ones requiring upgraded skills. Some occupations like wind turbine technician and solar photovoltaic installers, have been created from emerging clean energy technologies. Traditional construction occupations, like electrician; heating, air conditioning, and refrigeration mechanics and installers; and carpenters are critical to implementing clean energy and energy efficiency technologies and are thus in greater demand.³

The transferability of skills for workers in traditional energy occupations falls into three categories⁴:

- » **Direct:** Essentially the same core qualifications, technical knowledge, skills, and work environment, with a high likelihood of recruitment and retention in the sector.
- » **Refocus:** Similar work, but some skill or knowledge upgrading is likely required to increase the chance of a successful transition.
- » **Reboot:** The work is very different; there is a need to invest significant effort to qualify for a position.

Key Resource

[Assess Your Career Change \(Careers in Energy\)](#): This resource provides insight into how oil and natural gas skills may transfer to other careers within the energy industry.

Key Resource

Sample needs assessments can help EECBG Program awardees consider their own communities and provide examples of how a needs assessment could be structured:

- » [2021 PENNSYLVANIA CLEAN ENERGY INDUSTRY: Workforce Development Needs Assessment & Gap Analysis](#)
- » [Clean Energy Workforce Assessment for Western New York \(2019\)](#)
- » [Clean Energy & Clean Transportation in NC: A Workforce Assessment \(2019\)](#)

³Source:

[O*NET Resource Center](#)

⁴Source:

[Careers in Energy: Assess Your Career Change](#)

KEY ACTIVITIES

1

2

3

4

Program Design and Curriculum Development

Program design should consider needs of the community and the members who will participate. Sector-specific strategies should be part of the design – depending on target industries, from solar PV to wind, to building electrification or energy efficiency retrofits, the emphasis of your program design will vary to meet the unique needs of those different industries.

Very few occupations in the energy or construction trades require a full reboot of skills and training to transition to clean energy generation and delivery. Knowledge, skills, and abilities (KSAs) required for conventional jobs like carpenters, electricians, plumbers/pipefitters/steamfitters, roofers, and HVAC installers have several key commonalities and some differences with clean energy jobs. Working with training and job skills organizations to grow and/or augment their offerings to include clean energy KSAs could be an effective approach to workforce development. Mathematics, critical thinking, critical problem recognition and solving, and deductive reasoning are all common skills future clean energy workers will need. More specific interest or skill in building and construction, mechanics, and design are useful as well.

Source: Content in the table on the right side of this page is adapted from: [California's Clean Energy Workforce, California Skilled Energy Workforce Market Assessment \(The Energy Skills Collaborative\)](#); and [O*NET Resource Center](#).

Key Resource

[Solar Workforce Development Resources \(DOE\)](#)

[Grid Engineering Training \(DOE\)](#)

[Wind Energy Education and Training Programs\(DOE\)](#)

[Industrial Assessment Centers \(DOE\)](#)

[Inspirational video/ case study from Philadelphia](#)

Clean Energy Occupations	Select Foundational Knowledge, Skills and Abilities (KSA)	Clean Energy KSAs
Carpenters or Weatherization/Energy Efficiency/Building Performance Technicians	Reading and understanding blueprints and drawings	Experience in air sealing, insulation, venting to exterior, and other remodeling to make homes energy efficient.
Electricians	U.S. Occupational Safety and Health Administration (OSHA) training; Ability to interpret electrical schematics and blueprints.	Technical knowledge of electric vehicle chargers, solar power installations, or other applicable power electronics. Electrical upgrades to enable beneficial electrification.
Plumbers, Pipefitters, and Steamfitters	Mechanically inclined with a preferred background in technical skills; Perform physical activity with no restrictions in various climate conditions; Ability to use power and hand tools	HVAC experience; Heat pump installation
Roofers	Assess site prior to project start to obtain measurements; Ability to withstand different climates and temperatures; Knowledge of basic roofing tools	Make various repairs to home from solar installation including siding and drywall.
Heating, Ventilation, and Air Conditioning, (HVAC), Refrigeration Mechanics, and Installers	Basic math computations needed to perform in the HVAC trade; Working with hand and power tools; Ability to lift up to 50 lbs., stand, bend, stoop, sit, reach from heights and crawl spaces; Possess strong mechanical aptitude.	Possess an understanding of the refrigeration cycle and how to properly diagnose or install heat pump; Possess CFC/EPA certification & Apprenticeship license for non-helper positions.
Building Energy Auditor/Modeler	Understanding different building systems, equipment types, and power sources; reliable tracking and monitoring of equipment records and settings.	Understanding of how building automation systems and controls, integration of solar energy systems and battery storage, and energy efficient technologies and behaviors affect energy use and occupant comfort.

KEY ACTIVITIES

1

2

3

4

Stakeholder Engagement

As you plan for a workforce development program, it is important to also convene clean energy employers, relevant community-based organization officers, local Workforce Development Board leaders, economic development officials, education and training providers, workers' rights organizations (including but not limited to unions), and representatives of institutions of higher education to collaboratively develop the community's energy workforce development vision, mission, and strategic plan.

There are five primary entities involved in publicly funded workforce development programs:

1. Government, which fund and sometimes operate employment and training initiatives to support economic growth and prosperity.
2. Public, private, and non-profit employers, which can support workforce development by participating in training and apprentice programs and opening employment opportunities to individuals with underdeveloped skills or nontraditional backgrounds.
3. Individuals seeking a first job, new job, or a way to advance their careers.
4. Training providers such as institutions of higher education, proprietary entities, career and technical education providers, and community-based organizations that can implement a training program.
5. Intermediaries that may connect employers with open jobs, individuals who are seeking job opportunities, training providers with workforce programs, and access to public funding to support workforce development programs.

Cost Estimates: \$0 to \$10,000 depending on time and materials to develop a meeting agenda, create meeting materials, invite participants, secure meeting space, use audio and video equipment, provide refreshments for participants, post-meeting follow-up, and memorialize strategic planning efforts and outcomes. Strategic planning can be the foundation for public, private, and philanthropic funding.

Key Resource

[NYSERDA's Clean Energy Workforce Development \(Clean Heat Connect\)](#) program supports heat pump installers and distributors looking to grow their businesses. Partners of the Clean Heat Connect network receive focused support navigating these programs and following through on the application requirements.

Key Resource

[Workforce Development Board \(WDB\) Finder \(CareerOneStop\)](#) can help you find a WDB in your area with this searchable tool.

1

2

3

4

KEY ACTIVITIES

Paying Trainers and Trainees Including Supplemental (Wraparound) Services

Individuals interested in participating in workforce development efforts may face circumstances that prevent them from easily taking advantage of education and training opportunities. Barriers like childcare, viable transportation, or forfeited wages from time spent in training may preclude interested individuals from being able to participate in an occupational training program. Planning for and/or integrating ways to address these barriers for participants (and in some cases trainers) could help improve the chances for success.

Additionally, the aim of the workforce development program should be to match successful trainees with actual jobs. Employers engaged in your program should know and understand the concept of “high road” jobs, which emphasize living wages, providing benefits such as paid leave and workplace flexibility, keeping workplaces safe, and supporting workers’ development through training (including on-the-job or registered apprenticeships). Case studies point to positive internal rates of return on apprenticeship programs in a variety of industries. It is also important to maintain respectful relationships with workers. Such “high road” employers are more likely to attract and keep talented and productive workers, which generates more revenue for the firm as they can produce more or higher-quality output in the same amount of time (Source: White House Council for Economic Advisors, 2022).

Key Resource

[Building Pathways to Infrastructure Careers: Framework for Preparing an Infrastructure Workforce \(DOL\)](#) is a Training and Employment Notice that provides a framework and vision for the role of the public workforce system as a strategic partner in creating and supporting pathways to millions of good-paying infrastructure jobs with high labor standards, including prevailing wages and the free and fair choice to join a union and collectively bargain, as the historic Bipartisan Infrastructure Law (BIL) investments ramp up.

Key Resource

[WorkforceGPS Resources \(WorkforceGPS\)](#) offers thousands of resources on Education & Training; Employment, Retention & Advancement; Management & Operations; Programs/Major Funding Streams; reaching Target Populations; and geographic location.

Key Resource

[Blocking the Low Road and Paving the High Road: Management Practices to Improve Productivity \(The White House Council of Economic Advisors\)](#) provides a review of the administrations perspective and arguments for “high road” jobs and how these can help bolster the economy.

Learn More

[Department of Energy | EECBG Program](#)

