



**CEJA ILLINOIS**

Returning Residents Clean  
Jobs Training Program

Clean Jobs Curriculum Framework for  
Returning Residents

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**Illinois**  
**Department of Commerce**  
& Economic Opportunity

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# INTRODUCTION

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## Background

The Illinois Climate and Equitable Jobs Act (20 ILCS 730) establishes several new workforce programs, administered by the Illinois Department of Commerce and Economic Opportunity (DCEO), to expand the clean energy workforce in Illinois and accelerate the adoption of clean energy sources, electric vehicles, and energy efficiency efforts. One of these programs is the Returning Residents Clean Jobs Program (“Returning Residents Program”). This program will provide clean jobs training and a career pipeline for people who are in the custody of the Illinois Department of Corrections.

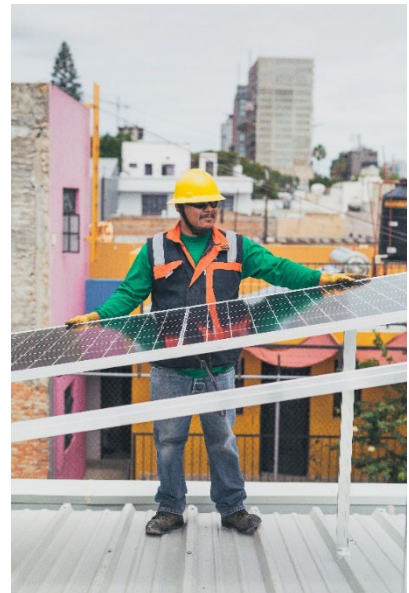
The main objective of the Returning Residents Program is to increase access to and opportunities for education, training, and support services to help returning residents succeed in the labor market generally and the clean energy sector specifically.

Equity is crucial to this objective. Equity has always been at the root of the CEJA legislation, and it is a significant foundation of the Returning Residents Program. All grantees will ensure and uphold the core values of Diversity, Inclusion, Accessibility, and Equity in accordance with this curriculum and associated workplace culture guidelines.

CEJA requires that the Returning Residents Clean Jobs Program utilize a standard Clean Jobs Curriculum Framework (“curriculum framework”), developed through a stakeholder process to identify the career pathways and training curriculum needed for participants to be skilled, work ready, and able to enter clean energy jobs. The Returning Residents Program will implement the curriculum framework to provide training; certification preparation; job readiness; skill development, including soft skills, math skills, technical skills; certification test preparation, and other development needed, to program participants.

The curriculum framework:

- Identifies the core training curricular competency areas needed to prepare people to enter clean energy and related sector jobs.
- Identifies a set of required core cross-training competencies to provide a foundation for pursuing a career composed of multiple clean energy job types.
- Integrates broad occupational training to provide entry into clean energy careers and addresses student support services to promote success.
- Identifies suggested trainer certification standards, where relevant.



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- Recommends best practices to ensure equity and cultivate safe, dynamic, enjoyable, successful working environments for all.

The legislation's inclusive definition of "clean energy jobs" includes jobs in the solar energy, wind energy, energy efficiency, energy storage, solar thermal, green hydrogen, geothermal, electric vehicle industries, other renewable energy industries, industries achieving emission reductions, and other related sectors including related industries that manufacture, develop, build, maintain, or provide ancillary services to renewable energy resources or energy efficiency products or services, including the manufacture and installation of healthier building materials that contain fewer hazardous chemicals. Clean energy jobs also include administrative, sales, other support functions within these industries and other related sector industries.

## Curriculum framework development

### Clean energy jobs and training inventory

The [Clean Energy Jobs and Training Program Inventory Report](#) informs the design of the Clean Jobs Curriculum Framework for Returning Residents. This report assesses existing clean energy training and skills development programs in Illinois. It evaluates industry employment trends to identify in-demand career opportunities for clean energy workforce training participants. Finally, it identifies best practices and programmatic gaps that will need to be addressed to support the industry requirements of in-demand clean energy occupations. Public input on this report and its findings was requested through a Request for Information process. The report was revised based on this feedback. Key highlights include:

- A list of in-demand clean energy jobs in Illinois, based on data from the Department of Labor and the Illinois Department of Employment Security. In-demand jobs included those in renewable technologies (solar and wind), automotive electric vehicle technologies, electrical, green building construction and maintenance, and the manufacturing of clean energy technologies.
- Training, skill and knowledge requirements for in-demand clean energy jobs. The report outlines top employability skills, technical skills, and knowledge requirements as well as technical skill gaps in clean energy training.
- Workforce system challenges, including 1) a lack of communication and coordination; 2) a lack of awareness and/or negative perceptions of clean energy jobs; 3) workforce trainees with inadequate skills for emerging clean energy jobs; and 4) failure to reach and support diverse, underserved populations.
- A clean energy training program inventory that identifies 1,157 training programs for clean energy-related jobs in Illinois.
- Curriculum framework recommendations, such as which jobs to prioritize and what skills to be taught.
- Program delivery recommendations, including gathering more data on clean energy jobs and training and increased collaboration among training providers, employers, and other stakeholders.

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#### Stakeholder outreach and engagement

DCEO's implementation team conducted stakeholder engagement in the fall of 2022 to inform the development of the curriculum framework. The stakeholder engagement process comprised eight virtual and in-person listening sessions, 15 individual interviews or meetings, submission of written feedback, and administration of an online survey. 381 people attended listening sessions, and 161 people completed the survey. Stakeholders discussed training priorities, curricular recommendations, and significant programmatic supports to guide CEJA implementation. Key findings include the following:

- Training priorities. Stakeholders indicated that solar and electrical jobs were most in-demand, followed by HVAC and building maintenance, wind, and automobile (electric vehicle focus).
- Training outcomes. Stakeholders highlighted the need for programs to provide well-rounded and flexible training so graduates can apply to a variety of jobs and advance in their careers. They agreed that short, stackable, industry-recognized, and employer-sought certificates would best serve program participants.
- Curriculum content. Stakeholders wanted curriculum to be holistic, not just focused on the technical aspects of the job. In discussing technical skill needs across different clean energy jobs, stakeholders centered safety, basic construction skills, and electrical basics. They recommended aligning curriculum with established, respected curricula and certifications.
- Curriculum delivery. Stakeholders emphasized hands-on and contextualized learning, as well as different learning and delivery methods to account for the diversity of adult learning preferences. They preferred flexibility in program delivery to reach equity eligible individuals.

#### Compilation of curriculum framework

After analyzing the results of the stakeholder engagement process and the Clean Energy Jobs and Training Program Inventory report, the curriculum framework was compiled by an expert team including representatives from DCEO, the University of Illinois, the Illinois Community College Board, Southern Illinois University at Carbondale, Northern Illinois University, Western Illinois University, and Governor's State University. The curriculum framework consists of 1) a bridge program curriculum outline; 2) a set of job-specific curricula; and 3) general standards and minimum requirements for inclusion of other clean energy training curricula to be offered through the Clean Jobs Workforce Network Program and the Returning Residents Clean Jobs Training Program.

The team shared drafts of the clean jobs curriculum framework with clean energy employers, representative community-based organizations, industry leaders, and training providers. A Diversity, Equity, and Inclusion committee was formed to provide feedback on the framework and program design. Committee members included community-based organizations that serve equity eligible communities, community college equity initiative leaders, minority-led business owners, and more. This committee met biweekly for 3 months to provide feedback. The framework was modified based on feedback.

## Returning Residents Clean Jobs Training Program

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## Overview of the curriculum framework

The curriculum framework is intended to be used as a set of guidelines, standards, and minimum requirements for curricula offered by training providers of the Returning Residents Clean Jobs Program. As such, the framework outlines the overall program objectives, content, and certifications and provides recommendations and guidelines for how the curriculum should be taught, but it is not intended to be a detailed curriculum. The table below describes what the curriculum framework does and does not do.

Table 1: Curriculum framework: What it does and does not do

The curriculum framework <i>does</i> . . .	The curriculum framework <i>does not</i> . . .
Provide a set of objectives and main topics that must be covered. Examples and resources are provided for reference, but training providers can select the specific training materials and curriculum they want to use.	Provide detailed lesson plans and tell programs exactly what should be taught.
Allow training providers to teach additional content or offer additional certifications, beyond the required topics and certifications.	Limit the content that can be taught.
Provide suggestions for the learning environment and equipment needed, how long the program should take, and how skills and knowledge should be assessed.	Require that programs deliver the curriculum in a certain way.
Provide instructor credential, knowledge and skill requirements and recommendations.	Tell programs <i>who</i> should teach the program.
Provide a training framework for a few of the most in-demand entry-level clean energy jobs in Illinois.	Provide a training framework for all clean jobs in Illinois.
Allow flexibility in training delivery. It allows participants to test out of portions of the curriculum and be placed in a variety of existing or new clean energy training programs or on-the-job training, depending on their needs and interests.	Require that all participants follow the same training and career path.

The figure below describes the main elements of the Curriculum Framework and how it should be delivered. It provides a high-level overview of how the curriculum framework works and how people flow through the program, from enrollment to job placement. The different components of the curriculum framework (pre-assessments, bridge program, and job-specific training options) will be described in more detail below. Transition services (job placement and retention) will be discussed in the Notice of Funding Opportunity.

## Returning Residents Clean Jobs Training Program

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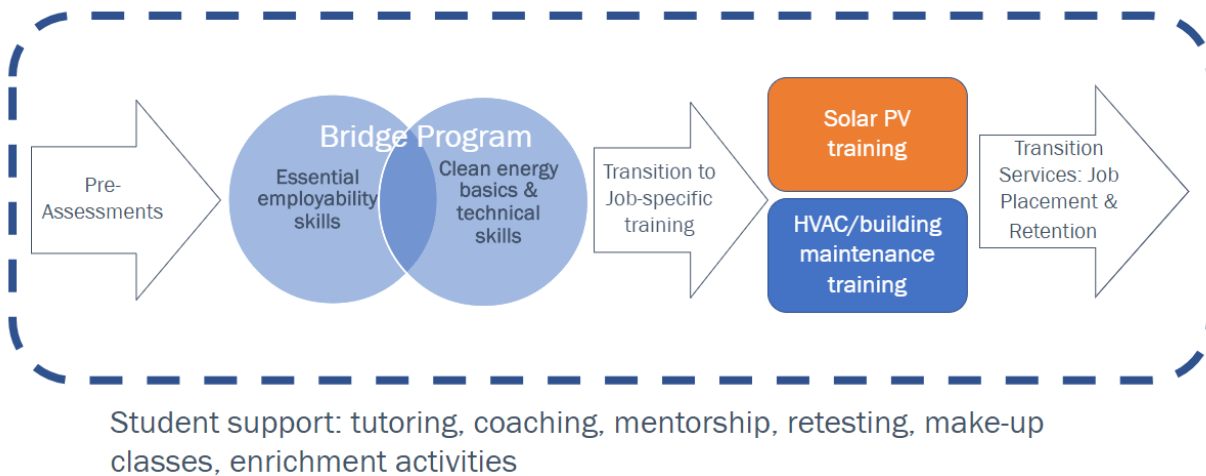


Figure 1: Overview of Clean Jobs Curriculum Framework

### Bridge program training

The bridge program is a portion of the overall clean energy jobs curriculum framework (see Figure 1 above) that provides training in essential employability skills and clean energy basics to help participants succeed in an array of clean energy industries and workplaces. It prepares participants for the job-specific technical training options that follow the bridge program.

### Job-specific training

Following the completion of the bridge program, participants will proceed to the job-specific training in either solar/construction or HVAC/building maintenance or an alternative job-specific training option selected by the grantee. Training Providers may propose to offer one of these job-specific training options at the correctional facility. Some participants may be released after the bridge program training and may receive job-specific training following their release, through connection with a Clean Jobs Workforce Network Hub in their home community. Returning Residents Program Administrators will facilitate a warm hand-off to the Workforce Hubs.

The curriculum framework contains requirements and training guidelines for both options, with guidance on program delivery and content to be taught. Training providers must align their curriculum with these guidelines and requirements.

### Student supports

Training Providers of the Returning Residents Program will provide student support services to help participants successfully complete the training. Support services may include tutoring, mentoring/coaching, make-up classes, retesting, and educational enrichment. They will also provide certification testing support.

### Transition services and wrap-around supports

Following program completion and release, the Returning Residents Program Administrators will provide transition services and help connect participants to wrap-around supports through the Clean  
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Jobs Workforce Network Program Hubs. They will work with employers to help facilitate participant job placement. Transition services and wrap-around supports are not described in this curriculum framework but will be required elements of the program. More information can be found in the Notice of Funding Opportunity.

### Audience

Eligible individuals for the Returning Residents Clean Jobs training program are:

- 17 years of age or older
- in the physical custody of the Department of Corrections
- scheduled to be re-entering society within 36 months.

Participants must score a minimum of a 6.0 or above on the Test for Adult Basic Education or the Illinois Community College Board approved assessment for determining basic skills deficiency.

### Equity focused program culture

Training Providers of the Returning Residents Program should utilize an equity lens when delivering the Clean Jobs Curriculum to participants by upholding the core values of Diversity, Inclusion, Accessibility, and Equity ("DIAE"). Welcoming others and making room for difference not only helps create a dynamic, creative, productive workplace, but it also encourages a comfortable and enjoyable environment for all. Recognizing, embracing, and celebrating difference can foster a safe, supportive, and successful environment for disadvantaged and underserved groups that have been and continue to be subject to prejudice and systemic discrimination. Programs that embrace such a culture have better outcomes.

Core equity values, as defined in the Illinois Office of Equity "Illinois Toward Equity Action Framework," include the following:

- **Diversity** is the representation of people from a variety of backgrounds and experiences. This includes race, ethnicity, and gender, but also a number of other traits and characteristics that encompass difference.
- **Inclusion** means authentically bringing representatives of disadvantaged and underserved individuals and/or groups into processes, activities, and decision/policy making in a way that shares power and influence. To be inclusive means more than having these individuals and/or groups in the room; it means listening to them and taking their input seriously in a way that can impact decisions. True inclusion brings an empowered sense of belonging to each individual within a group or organization.
- **Accessibility** is the degree to which an environment, service, or product is understandable, meaningful, and useable by as many people as possible. According to the Office for Civil Rights at the U.S. Department of Education, accessibility is "when a person with a disability is afforded the opportunity to acquire the same information, engage in the same interactions, and enjoy the same services as a person without a disability in an equally integrated and equally effective manner, with substantially equivalent ease of use." The Office of Equity extends accessibility



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beyond disability to include the creation of financially, technologically, and linguistically accessible systems, resources, and services so that all can thrive in a society.

- Each of these three foundational elements contributes to **Equity**: The state, quality, or ideal of being just, impartial, and fair. Equity must also be both structural and systemic and comprised of a robust infrastructure and dynamic process that produce equitable ideas, power, and resources. Equity is NOT the same as equality; equality implies everyone gets the same, whereas equity allows an accounting for each person's individual needs.

Commitment to these values means upholding them in all elements of the workforce program and intentionally pursuing policies and practices to support all program participants and team members. The recommendations below provide specific guidance on centering equity in the delivery of the Clean Jobs Curriculum.

#### Staffing

- Develop a set of written DIAE principles for your organization. Consider seeking expert help.
- Make sure that all policies, procedures, and processes are in writing and are aligned with the DIAE principles. This can be a reference to make sure that you are following your intentions, and can also be used for accountability. Consider seeking expert help.
- Identify and utilize instructors, mentors and coaches who are from disadvantaged and underserved groups and have shared or similar experiences with potential participants.
- Ensure ALL program staff are trained on Diversity, Inclusion, Accessibility, and Equity. Explain why this is important. This is key: people can attend training, but if they have not bought in then it can fail to have the intended benefits.
- Ensure ALL program staff model behaviors aligned with equity values and practices.

#### Recruitment and intake

- Make all program requirements easily accessible.
- As early as the program orientation, instructors and facilitators should take the time to learn who the participants are and how they self-identify with respect to their specific groups.
- Identify and leverage strengths in diverse participants and build on those strengths. Consciously acknowledge all sexes, genders, and ethnicities in educational settings. Positively affirm contributions and inquire about relevant personal experience.
- Use supportive communication that frames participants as members of a professional community (the clean energy industry), not just a participant in a program.
- Validate participants' self-worth, inherent ability, and creativity to help counter "imposter syndrome" and respond positively and affirmatively to their internal questions, "Am I supposed to be here?" "Do I belong here?" "Can I be successful here?"
- Strengthen the voices of underrepresented groups by participating in meaningful engagement, problem-solving, and empowerment with participants who have not historically had power in the current environment (the clean energy industry).

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#### **Training**

- Encourage participants to incorporate their current body of knowledge and utilize their lived experiences and personal expertise to achieve personal success.
- Recognize, welcome, and elevate participant contributions.
- Develop genuine and quality relationships between and among all levels of staff and program participants. Encourage mutual trust.
- Show participants how their cultural values, current knowledge, and experiences are transferable and reflected in the clean energy industry. Tell relatable stories during training.
- Intentionally communicate positive cultural and social messages regarding their career choice in the clean energy industry and emphasize the value of participants' contributions to the industry.
- Be willing to discuss and address difficult/taboo topics and work to find equitable solutions. Acknowledge in the curriculum, among staff, and on worksites the environmental and historical factors that impact underrepresented groups.
- Eliminate exclusionary practices within the learning environment and on worksites (for example, negatively singling out participants, overlooking or ignoring certain participants, verbally insulting or marginalizing membership in certain groups, or otherwise discounting participants).
- Provide additional instruction, coaching, mentoring, and sponsorship, as needed, for individuals who require supplementary or different supports to be successful.
- Represent diverse cultures in instructional materials and curricula, in physical spaces, and in online and print materials.
- Proactively and equitably share insights and wisdom, as well as influence and power, with all participants to develop skills, confidence, and leadership.
- Provide participants with multiple ways to demonstrate knowledge and capability. Not all ways of learning and means of assessment have been a significant part of everyone's educational background.

# BRIDGE PROGRAM FRAMEWORK

The bridge program is a portion of the overall curriculum framework (see Figure 1) that provides training in job readiness skills and clean energy basics to help participants succeed in an array of clean energy industries and workplaces. It prepares participants for the job-specific technical training options that will be taught after the bridge program. The bridge program training should be taught before starting job-specific technical training, though aspects may be taught concurrently with the technical training component.

Returning Residents Program Training Providers must provide all elements of the bridge program training, as described below. The bridge program should be tailored to participants' needs.

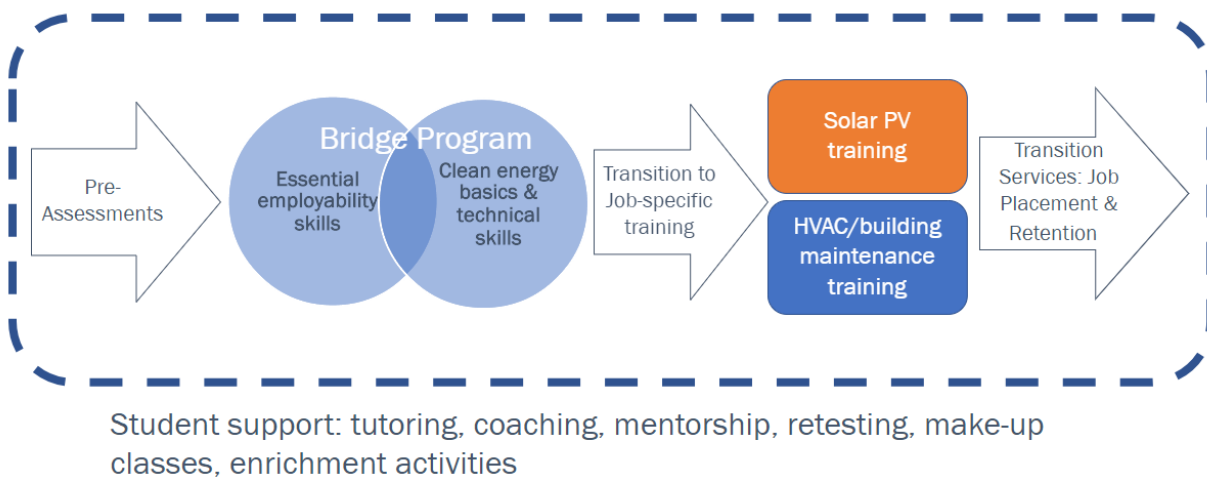


Figure 2: Overview of Clean Jobs Curriculum Framework

## Pre-assessments

Prior to beginning the bridge program training, Training Providers will help participants complete the following pre-assessments.

- **Needs assessment:** The purpose of this assessment is to identify the student supports needed for participants to attend training and successfully complete it. Grantees will utilize a standard needs assessment questionnaire.
- **Career assessment:** The purpose of this assessment is to explore participants' interests in clean energy jobs. Grantees will utilize a standard career assessment questionnaire.
- **TABE:** Participants are required to have a TABE score of 6 or higher to be eligible to participate. Because the solar training component requires higher math and reading levels, TABE scores will be utilized to identify whether additional math or reading training should be offered during the bridge program.

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For participants who do not have at least an 8<sup>th</sup> grade math or reading score, based on the results of their TABE test, Training Providers should offer math tutoring or other instruction to ensure that participants can develop the math skills needed to be successful in the solar training portion. See Illinois [ABE/ASE Math and Language Arts Modules](#) for example adult basic education curriculum participants may receive.

## Bridge program training overview

### Training outcomes

Upon completion of the bridge program, participants will have the essential employability and clean energy basics skills to proceed to job-specific technical training.

Organizations must offer bridge program training that covers essential employability skills and clean energy basics.

The clean energy basics curriculum covers a wide range of technical skills that are broadly applicable to construction and maintenance jobs in the clean energy sector. This curriculum provides a foundation for many clean energy jobs, including but not limited to:

- Solar jobs (installer, designer, supervisor, sales)
- Wind energy jobs (installation, technician)
- Energy efficiency jobs (carpentry, construction, building maintenance, HVAC installation and maintenance, weatherization, energy auditor, etc.)
- Electrician jobs

The bridge program curriculum will help participants become more broadly employable, not just in one narrow industry (such as solar installation). The bridge program will help returning residents access more job and training opportunities to advance their careers.

### Learning environment and format

The training will be provided in a classroom/lab environment within the correctional facility that has tables and chairs and space to move about comfortably and engage in hands-on construction training activities. Some hands-on activities may be delivered in outdoor areas or mobile labs where more space is available.

The learning environment should accommodate individuals with disabilities such as hearing loss or diminished vision, and any instructional materials, where applicable, should reflect the broad potential diversity of those enrolled.

Skill development and practice should be integrated into coursework. Participants should work individually and in groups. Training should be contextualized to demonstrate how bridge program skills are needed in typical clean energy jobs. Essential employability skills should be integrated into clean energy basics training to demonstrate how these essential skills can support their ability to perform clean energy tasks.

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Throughout, instructors should create a trusting and supportive environment in which participants feel a sense of belonging to and significance of the clean energy industry. Instructors must reinforce and build from participants' existing knowledge and strengths. The learning environment is a place where participants know their cultural values, current knowledge, and experiences are transferable and reflected in the clean energy industry. Instructors should share relevant examples and tell relatable stories during training.

Undergirding this environment is a willingness to discuss and address difficult topics and work to find equitable solutions. Successful programs will acknowledge the challenges that make it difficult for returning residents to join the clean energy workforce. Exclusionary practices have no place within the learning environment.

### Assessments

In addition to the pre-assessments described above, training programs should utilize assessments during and after the bridge program training is complete to measure learning and identify need for further training. Training Providers are encouraged to use standard assessments that are developed through evidence-based industry-recognized providers or certificate granting institutions. Furthermore, a variety of different assessment strategies are encouraged to account for participants' unique learning styles. After all, not all ways of learning and means of assessment have been a significant part of everyone's educational background.

Suggested assessments include:

- Reflective writing prompts
- Dialogue/informal interviews
- Tests/quizzes
- Role-playing on-the-job scenarios
- Formal demonstrations with evaluation by the instructor

### Student support

Additional instruction, coaching, mentoring, and tutoring may be needed for participants to be successful. Training Providers should allow students to make up missed class time and retake tests. Certification testing support should also be offered.

### Estimated program length

The duration of the bridge program training is 150-200 hours.

### Program size

Recommended cohort size is between 10 and 15 participants.

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#### Instructor requirements

Returning Residents Program Training Providers must have a strong connection to returning residents and the communities they return to and be capable of providing trauma-informed training and support services. All staff must receive Diversity, Inclusion, Accessibility, and Equity training.

Instructors who deliver the clean energy basics curriculum must have an intermediate to advanced knowledge in construction, the building trades, or other clean energy related fields.

Instructors should know how to create learning objectives and learning evaluation criteria, facilitate conversations, involve participants, and communicate clearly. Instructors should be closely connected to support staff to assist with student support services.

The entity providing the Program training must be approved to provide training services by all appropriate accrediting bodies, including, but not limited to, the Illinois Board of Higher Education pursuant to the Private Business and Vocational Schools Act of 2012 (105 ILCS 426), if applicable.

Finally, all instructors or staff who have regular interactions with participants are required to undergo a Department of Corrections background check prior to being approved to deliver Program elements.

#### Tools and equipment

The following tools and equipment are recommended:

- Basic construction tools (hammer, screwdriver, pliers, wire cutters, etc.)
- Access to power tools
- Course materials/books
- Laptops or tablets (Must be approved by IDOC Department of IT—Approval will be easier if the laptops or tablets are NOT connected to the Internet).

## 1. Essential employability skills

### Training objectives

At the end of this training, participants should be able to:

- Set personal and professional goals effectively, utilizing goal-setting skills.
- Demonstrate an understanding of what dependability and reliability mean in a workplace context and the behaviors that are associated with dependability and reliability.
- Develop a personalized time management plan that demonstrates how to productively complete assigned tasks.
- Evaluate various strategies for learning from challenges, setbacks, and failures, and apply them to achieve personal and professional goals.
- Implement emotion management strategies to cope with challenges, trauma, and conflicts and to achieve personal and professional goals.
- Create a sound personal finance plan, encompassing budgeting, savings, and investments, among other elements.

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- Implement effective job application practices, including resume writing and interview techniques, to facilitate successful job searches.
- Enhance communication skills, including active listening, conveying ideas, expressing information effectively, and being understood by colleagues and customers.
- Demonstrate their ability to work cooperatively with others, completing work assignments and achieving mutual goals.
- Utilize various digital tools, including email, keyboarding, word processing, and digital media, to complete job tasks and communicate courteously and directly.
- Interact with customers using role-play to understand their needs, answer questions, resolve issues, and nurture relationships effectively.
- Demonstrate critical thinking and problem-solving skills in a workplace context, using logical and reasoned analysis to address problems, identify root causes, implement appropriate solutions, and communicate solutions.
- Identify their legal right to work in an environment free of discrimination and harassment and understand how to address discrimination and harassment if it is experienced.
- Demonstrate the ability to communicate and work effectively across a range of abilities, cultures, and backgrounds, emphasizing diversity, equity, and inclusion.

### Curriculum content (50+ hours)

Training Providers are encouraged to tailor instruction to participants' individual needs, based on assessment results.

At a minimum, the personal effectiveness training must cover the following topics:

1. **Goal setting:** Employ goal-setting skills to set personal and professional goals.
2. **Dependability and reliability:** Explain how commitment and follow-through can ensure team effectiveness and help to meet collective goals.
3. **Time management:** Develop a time management plan to accomplish assigned tasks.
4. **Adaptability:** Explain different strategies to learn from challenges, setbacks, and failures; apply these strategies to achieve personal and professional goals.
5. **Financial literacy:** Create a personal finance plan and explain how personal finances relate to employability.
6. **Getting a job:** Apply effective job application practices (including resume writing and interviews) to search and apply for jobs.
7. **Emotion management:** Practice recognizing and managing emotions to cope with challenges and achieve personal and professional goals.
8. **Verbal communication skills:** Participants should improve their ability to listen to others, convey ideas, express information, and be understood by colleagues and customers.
9. **Workplace writing skills:** Participants should practice using standard business English to write documents and messages to colleagues and customers that are clear, direct, and courteous.

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10. **Teamwork skills:** Participants should practice working cooperatively with others to complete work assignments and achieve mutual goals.
11. **Digital communication skills:** Participants should practice using email, keyboarding, word processing, and digital media to complete job tasks and communicate directly and courteously.
12. **Customer service skills:** Participants should practice working with customers to understand their needs, answer questions, resolve issues, and nurture relationships.
13. **Critical thinking and problem solving:** Participants should practice critical thinking and problem-solving skills to generate and evaluate solutions as they relate to the needs of the team, customer, and company.
14. **Workplace rights:** Participants should understand their right to work in an environment free of discrimination and harassment and what to do if they experience discrimination or harassment.
15. **Diversity and inclusion:** Participants should practice diversity and inclusion strategies to communicate and work effectively across a multitude of abilities, cultures, and backgrounds.

All essential employability training should be hands-on and scenario-based when possible. It should be contextualized, integrated into clean energy basics, to demonstrate how these skills are needed in typical clean energy jobs. It should allow participants to practice skills, set goals, develop plans and demonstrate mastery.

### Curriculum examples and resources

- [Illinois Essential Employability Skills Framework and Self-Assessment](#)
- [Illinois workNet Job Skills Guide](#)
- [Revolution Learning and Development: Managing Yourself and Personal Effectiveness Training Course](#)
- [Illinois Adult Education: ABE/ASE Curriculum Project](#)
- [Northstar \(digital literacy assessments and training\)](#)

## 2. Clean energy basics

### Training objectives

After completing this training, participants should be able to:

- Identify job opportunities and analyze career pathways for their potential for growth and advancement in the clean energy industry.
- Develop a personalized clean energy pathway based on individual skills, interests, and credentials that leads to promising career advancement opportunities.
- Demonstrate safety practices in construction, electrical and solar fields, and understand safety regulations and codes.
- Explain the skills and responsibilities of construction workers and understand how they apply to the clean energy industry.



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- Interpret basic construction drawings and their components and explain their relevance to clean energy installations.
- Discuss the main components of building materials and building envelope systems, and explain installation procedures and materials of building, as they apply to the clean energy industry.
- Explain the importance of energy use, indoor air quality, and durability of building materials in the clean energy industry.
- Demonstrate the use of basic hand and power tools and understand their proper use and maintenance in the context of clean energy installations.
- Explain the different types of energy, energy conservation, features of green buildings, and principles of sustainability or energy efficiency in the clean energy industry.

Explain basic electricity and clean energy fundamentals, including the principles of energy generation, transmission, and storage, and their applications in the clean energy industry. If participants will be learning portions of the clean energy basics curriculum in the job-specific technical training, those portions may be skipped to avoid duplication of efforts (e.g., they do not need to take OSHA 10 twice).

### Curriculum content (105+ hours)

At a minimum, the clean energy basics training should cover the following topics:

1. **Introduction to clean energy careers** (At least 5 hours).
  - a. Clean energy careers and pathways: Develop a personalized clean energy career pathway leading to promising credentials and career advancement opportunities.
2. **Energy and sustainability fundamentals** (At least 5 hours).
  - a. Clean energy definitions: Explain energy, clean energy, sustainability, energy efficiency, and energy conservation.
  - b. Climate change: Explain how different clean energy careers will help advance state and national climate goals.
  - c. Sample curriculum guide for [energy and sustainability fundamentals](#).
3. **Safety basics** (At least 15 hours). Training includes required certifications in OSHA 10 and First Aid/CPR.
  - a. Safety compliance: Explain safety principles and regulations to maintain a secure work environment and how to comply with local, federal and jobsite health and safety demands.
  - b. Personal protective equipment and safety practices: Demonstrate safety practices and proper use of PPE when navigating a construction environment.
  - c. Working at height: Demonstrate safety practices when using ladders, applying scaffolding, safety harnesses, and rigging when navigating a construction environment.
  - d. First aid/CPR: Demonstrate ability to administer emergency first aid and CPR and know when to call for help.
  - e. Sample curriculum guide for [safety basics](#).

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4. **Building science principles** (At least 10 hours). The topics below align with the Building Performance Institute’s Building Science Principles curriculum, though their actual Building Science Principles curriculum is more comprehensive and leads to a certification exam.
  - a. Home performance and introduction to building science: Explain energy use in terms of building science.
  - b. House-as-a-System: Describe “House-as-a-System” and how the different components work together to impact energy use.
  - c. Energy and the building shell: Identify the main envelope components and control layers. Describe how heat is transferred in and out of the building envelope.
  - d. Residential heating, cooling, and ventilation: Describe whole-house mechanical ventilation systems and combustion science. Identify the main components of mechanical heating and cooling systems.
  - e. Evaluation strategies: Explain evaluation strategies of house performance including building envelopes, mechanical systems, appliances, and lighting.
  - f. Energy efficiency solutions: Describe common energy efficiency strategies to reduce home energy use.
  - g. Sample curriculum guide for [building science principles](#).
5. **Construction basics** (At least 60 hours). The construction topics below align with those in the NCCER Core Construction curriculum, though the NCCER Core curriculum is more comprehensive and leads to a certification exam.
  - a. Intro to hand and power tools: Identify, correctly set up, and operate hand and power tools.
  - b. Intro to schematics and blueprints: Understand how to read basic schematics and blueprints and how to differentiate among schematics needed for different trade areas.
  - c. Intro to design and construction processes: Describe the basic design and construction concepts in a residential construction project. With minimal supervision, safely construct or install an authentic project.
  - d. Intro to construction math and cost estimation:
    - i. Apply measurement systems and scaling concepts to demonstrate proper use of measuring tools (time, temperature, distance, length, width, height, perimeter).
    - ii. Demonstrate how to convert from one measurement to another and between decimals and fraction units.
    - iii. Apply basic cost estimation principles to estimate labor and material costs.
    - iv. Read and understand tables and graphs.
    - v. Calculate perimeters, areas, and volumes of basic shapes and solids.
  - e. Intro to materials handling: Use knowledge of material types, standard sizes and safe handling practices to identify and utilize materials needed for basic project types.
  - f. Sample curriculum guide for [construction basics](#).

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6. **Electrical basics training** (At least 10 hours). The topics below align with those in the Journeyman Electrician exam, though the actual Journeyman Electrician training is much more comprehensive.
  - a. Intro to electricity: Explain where electrical power comes from and how electricity works.
  - b. Intro to direct current and alternating current: Explain the basic difference between AC and DC voltage.
  - c. Intro to circuits: Describe how circuits work, the components of a basic circuit, and three basic types of circuits.
  - d. Intro to conductors: Explain what a conductor is and provide examples of good conductors and poor conductors.
  - e. Intro to electrical safety procedures: Describe and demonstrate how to protect against over-current and electric shock.
  - f. Sample curriculum guide for [electrical basics](#).

All clean energy basics training should be hands-on and scenario based when possible. It should be contextualized to demonstrate how these skills are needed in typical clean energy jobs. It should allow participants to practice skills, set goals, develop plans and demonstrate mastery.

# A. SOLAR PHOTOVOLTAIC TRAINING FRAMEWORK

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The CEJA workforce solar photovoltaic training specialty is designed to prepare individuals for entry level jobs in the solar industry, including solar installer, solar sales representative, and solar site assessor or designer. This training curriculum framework focuses on the basic skills needed to understand, design, and assist in the safe installation of photovoltaic systems and should use both hands-on and classroom environment experiences. Upon completion of the training, individuals will be prepared to take the Photovoltaic Associate exam offered by the North American Board of Certified Energy Practitioners (NABCEP).

## A-1. Training outcomes

Upon completion of the training, students should have obtained basic knowledge related to the design, sales, installation, and operation of Photovoltaic Systems. The students should also have received sufficient instruction to be prepared to take the North American Board of Certified Energy Practitioners (NABCEP) PV Associate Exam. Finally, the students should have sufficient technical and practical knowledge to be prepared to pursue employment opportunities in Solar Photovoltaic system installation, design, or sales.

## A-2. Job(s)/roles trained by this curriculum

- Solar Photovoltaic System Installer
- Solar Photovoltaic System Site Evaluator/Designer
- Solar Photovoltaic System Sales Representative

Commercial, community solar, or large scale industrial solar jobs may be an especially good fit for returning residents because they can work at the same location for longer periods of time, limiting transportation challenges. Commercial or large-scale properties are more likely to have a flat roof, making for an easier early transition into the field. Commercial or industrial projects are also more likely to be acceptable for employers who are reluctant to put returning residents on residential sites.

Residential solar installation jobs may be more challenging (but by no means impossible) for several reasons:

- Need for driver's license and ability to travel across a wide geographic territory. Some returning residents have parole restrictions that limit their ability to travel. Others may not have driver's licenses or they may have had their license suspended.
- Some solar companies may have policies or practices that exclude returning residents with certain offenses from working on residential projects.

### A-3. Career progression

- Solar PV Sales Representative and Site Assessor
- Solar PV Crew Chief
- Solar PV Project Manager
- PV System Inspector
- Solar Field Technician
- Solar Project Developer

For a more detailed solar career progression map, see the Interstate Renewable Energy Council's [Solar Career Map](#)

### A-4. Prerequisites

Before beginning technical training, participants should:

- Be comfortable working in elevated spaces such as rooftops
- Be comfortable using hand and power tools and managing materials
- Be comfortable working in teams and individually
- Possess good communication skills
- Be capable of working 6-8 hours per day in the field (with occasional overtime)
- Have at least an 8<sup>th</sup> grade math level and reading level
- Be able to use computers/tablets to communicate with clients and perform basic calculations
- Have OSHA 10 certification

By completing the bridge program, participants should have met these prerequisites.

### A-5. Learning environment and format

The technical training be offered as an in-person classroom and lab-based course, with extensive hands-on components. Classroom/lab should have enough workspace for students to work individually and in diverse groups. Access to either a computer lab or laptops (if possible) is helpful to support student evaluation/testing and calculations.

Throughout, instructors should create a trusting and supportive environment in which participants feel a sense of belonging to and significance of the clean energy industry. Instructors must reinforce and build from participants' existing knowledge and strengths. The learning environment is a place where participants know their cultural values, current knowledge, and experiences are transferable and reflected in the clean energy industry. Instructors should share relevant examples and tell relatable stories during training.

Undergirding this environment is a willingness to discuss and address difficult topics and work to find equitable solutions. Successful programs will acknowledge in the curriculum and among participants the

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environmental and historical factors that impact underserved and disadvantaged groups. Exclusionary practices have no place within the learning environment.

To the extent possible, the instruction should include hands-on learning activities at simulated work sites where participants have the opportunity to put into practice what they have learned in the classroom.

## A-6. Tools and equipment

The following tools and equipment are recommended:

- Basic construction tools (hammer, screwdriver, pliers, wire cutters, etc.)
- Access to power tools
- Access to diagnostic equipment
  - Multimeters
  - Insulation testing devices (e.g., megohmmeter)
  - Irradiance meter
  - Infrared thermometer (e.g., module, breaker, connection temperature measurement)
  - IV curve tracer
  - Battery capacity testing devices (e.g., load tester)
  - Hydrometer
- Course materials/books
- Access to demonstration PV systems / PV site installations or suitable props for hands-on activities
- Laptops or tablets (Must be approved by IDOC Department of IT—Approval will be easier if the laptops or tablets are NOT connected to the Internet).
- Software for rooftop PV system design and estimator of solar energy collection efficiency

While there are classrooms available at the proposed correctional facilities, training providers will need to bring all necessary equipment to the training facilities. They can purchase a cabinet to store their equipment or they may also consider providing a mobile training unit.

## A-7. Estimated training length

The training for the Solar PV Installer should involve at least 80 hours of instruction. This is in addition to the hours required for the bridge program instruction. Courses with more contact hours, hand-on activities and an instructor with significant current solar PV system installation experience can contribute to a better learning experience.

## A-9. Training size

This training is recommended for cohorts of 10-15 students. Programs can also opt for an open entry/exit model, rather than a cohort model.

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## A-10. Instructor requirements

The curriculum must be delivered by a [NABCEP Associate Registered Training Provider](#). Instructors must have intermediate to expert-level knowledge of the curriculum modules in the Core Curriculum section below.

It is strongly recommended that the instructor have significant *recent* experience in Solar PV system design, sales, and installation. We recommend that the instruction team consist of:

- Lead instructor
- Facilitator, especially during labs
- Training admin/logistics support

Program administrators should endeavor to identify and utilize instructors, mentors, and coaches who are from disadvantaged and underserved groups and have shared or similar experiences with potential participants. All staff, including instructors, must be trained on Diversity, Inclusion, Accessibility, and Equity.

## A-11. Training objectives

By completing this training, students will be able to:

1. Discuss the fundamental concepts of Solar PV systems, including key terminology and different system design options, and apply this knowledge to analyze different solar PV systems.
2. Analyze the landscape of Solar PV system installation, including consumer expectations, system capabilities, and long-term cost-benefit relations, and make informed recommendations based on this analysis.
3. Demonstrate an understanding of governmental regulations and local and state building codes, contract provisions, and construction standards relevant to Solar PV system installation, and comply with them in all aspects of the work.
4. Analyze how Solar PV system design parameters impact overall system performance and make informed decisions to optimize system design based on this analysis.
5. Use technical terminology specific to Solar PV system installation and testing to communicate with team members, customers, and other stakeholders.
6. Effectively and safely use all necessary tools and equipment to assist in the installation, testing, and maintenance of Solar PV systems, and identify potential safety hazards and appropriate safety measures.
7. Contribute effectively as a member of a diverse team to install and test Solar PV systems at various work sites and consider both individual and team safety requirements in all aspects of the work.
8. Effectively scaffold existing strengths, experiential knowledge, and newly established trusting relationships to pursue a meaningful career in the clean energy industry.

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## A-12. Curriculum content overview

The table below summarizes the five domains of content recommended for the Solar Photovoltaic Installer curriculum for Technical Skill. The curriculum and training should align with the *most recent* [NABCEP Photovoltaic Associate Training Job Task Analysis](#) and prepare students to successfully pass the NABCEP Photovoltaic Associate Certification exam. A summary of the tasks found in the Job Task Analysis is shown in the tables below. Up-to-date local or state-wide codes, requirements, design considerations, and economic considerations should be taught. Where applicable, instructional materials should reflect the broad potential diversity of those enrolled.

Table 2: Solar Photovoltaic Association Job Task Analysis Domains

Domain I: Application	Domain II: Sales & Economics	Domain III: Design
Application	Sales & Economics	Design
<ul style="list-style-type: none"> <li>-Describe types of PV system applications</li> <li>-Identify key features and benefits of specific types of PV systems</li> <li>-List the key component of specific types of PV systems</li> <li>-Understand the safety concerns associated with different types of PV systems</li> <li>-List the advantages and disadvantages of PV systems compared to other electricity generation sources</li> </ul>	<ul style="list-style-type: none"> <li>-Determine necessary customer information to collect</li> <li>-Identify the customer’s motivations to install solar</li> <li>-Estimate system size to meet the customer’s financial objective</li> <li>-Identify information from the client on electricity usage relevant to stand-alone solar</li> <li>-Recognize how federal, state, and local policies and available financial benefits affect different PV markets</li> <li>-Identify financial risks associated with PV systems</li> <li>-Identify common financing options and incentives</li> <li>-Identify predictable maintenance costs over the life of the system</li> </ul>	<ul style="list-style-type: none"> <li>-Ensure equipment is appropriate for intended use</li> <li>-Identify relevant codes and requirements that impact PV design and installation, including local codes and requirements</li> <li>-Recognize electrical concepts &amp; terminology</li> <li>-Identify factors impacting solar resource on design and performance</li> <li>-Identify equipment specification data</li> <li>-Describe the function of typical components in PV systems</li> <li>-Explain PV system sizing considerations</li> <li>-Read an electrical diagram of a PV system</li> <li>-Recognize structural requirements of PV systems</li> </ul>

Domain IV	Domain V
Installation	Maintenance and Operation
<ul style="list-style-type: none"> <li>-Identify the elements of a complete site-specific safety plan</li> <li>-Identify the elements of the plan set</li> <li>-Identify the elements of racking installation</li> <li>-Identify the elements of electrical component installation</li> <li>-Identify the elements of energy storage component installation</li> </ul>	<ul style="list-style-type: none"> <li>-Identify commonly used electrical test equipment and its purpose</li> <li>-Demonstrate the ability to analyze simple electrical circuits</li> <li>-Describe the effects of performance parameters that are commonly monitored for PV systems</li> <li>-Describe different types and elements of system</li> </ul>



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-Identify the elements of the system commissioning procedure	performance monitoring equipment -Identify common factors that result in deviations from expected system performance -Describe typical maintenance requirements for PV systems -Identify the safety requirements for operating and maintaining different types of PV systems
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## A-13. Assessment methods

We recommend students be evaluated via the following:

- In-class exams
- In class/lab evaluation
- Training final proficiency and field exams

Additional instruction, coaching, mentoring, and sponsorship, may be needed for individuals who require supplementary or different supports to be successful. A variety of different assessment strategies, such as lab evaluation and demonstrated knowledge proficiency, are encouraged to account for participants' unique learning styles. Importantly, not all ways of learning and means of assessment have been a significant part of everyone's educational background.

## A-14. Certification

Individuals who successfully complete the Solar PV Installer curricula should be prepared to take the NABCEP Photovoltaic Associate Certification exam if they wish to take the exam. Participants are not required to pass the exam to complete the program; participants may need to take the exam multiple times to pass. The Training Providers should assist with test preparation and provide funds to cover the exams.

## A-16. References and example curriculum

- [NABCEP Associate Registered Trainings](#)
- [US Department of Labor's Renewable Energy Competency Model](#)
- [NCCER Solar Photovoltaic Systems Curriculum](#)

## B. HVAC INSTALLER & TECHNICIAN TRAINING FRAMEWORK

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The HVAC installer training specialty is designed to prepare people for a career as an HVAC installer or technician and/or a career in HVAC sales. The course covers the basic skills needed by an HVAC installer or technician to install and service basic HVAC systems. Upon completion of the training, students will have a firm grasp of the skills and competencies needed to be successful in an entry level position installing, servicing and/or selling HVAC systems and be prepared to take the EPA Universal exam (Section 608 Technician Certification), as well as other NATE certification or HVAC Excellence exams. The curriculum should emphasize energy efficient technologies and practices, as well as the electrification of heating and cooling technologies (e.g., electric heat pumps).

### D-1. Training outcomes

Upon completion of the training, students will be prepared to take the EPA Universal certification (Section 608 Technician Certification), as well as other NATE certificate or HVAC Excellence exams, and be qualified for an entry level position in the HVAC industry. They will have a firm grasp of the skills and competencies needed to be successful in installing, servicing, or selling HVAC systems.

### D-2. Job(s)/roles trained by this training

- HVAC installer
- HVAC service technician
- HVAC marketing & sales

While this training focuses primarily on residential HVAC systems, commercial or industrial HVAC jobs may be an especially good fit for returning residents because they can work at the same location for longer periods of time, limiting transportation challenges. However, additional training on the outside may be needed to navigate larger HVAC systems. Commercial or industrial HVAC is also a more suitable option for people whose convictions limit their ability to work at residential sites.

Residential HVAC jobs may be more challenging (but by no means impossible) for several reasons:

- Need for driver's license and ability to travel in a wide geographic territory. Some returning residents have parole restrictions that limit their ability to travel. Others may not have driver's licenses or they may have had their license suspended.
- Some HVAC companies may have policies or practices that exclude returning residents with certain convictions from working on residential projects.

### D-3. Career progression

- Building maintenance technician
- HVAC installation supervisor
- HVAC installation technician (commercial)
- HVAC service technician (residential)
- HVAC service technician (commercial)
- HVAC marketing/sales supervisor
- HVAC instructor

### D-4. Prerequisites

Before beginning technical training, participants should:

- Have professional communication skills with other employees and clients
- Have the ability to read a wiring diagram and blueprints
- Have basic knowledge of a furnace, air conditioner, boiler, heat pumps and willingness to learn
- Be comfortable on ladders and in attics, crawlspaces, and rooftops
- Be comfortable using basic tools
- Be comfortable working in teams and individually
- Be capable of working 6-8 hours per day in the field (with occasional overtime)
- Have a 6<sup>th</sup> grade or higher math and reading level

By completing the bridge program, participants should have these required competencies.

### D-5. Learning environment and format

This training will be offered in a classroom/lab environment, with extensive hands-on components. Classroom/lab spaces should have enough workspace for students to work individually and in groups. Outdoor spaces and mobile training labs may also be utilized.

Access to either a computer lab or laptops/tablets will be helpful to support student evaluation/testing and calculations.

### D-6. Tools and equipment

This training requires the following:

- Classroom or mobile HVAC lab
- HVAC Hand Tools such as Crescent Wrenches, Hammers, Screwdrivers, Pliers, Tape Measure
- HVAC Safety Tools such as Multimeter, Safety Goggles, Footwear
- HVAC Specialty Tools such as Thermometer, Reciprocating Saw, Caulking Gun, HVAC Software
- Laptops, tablets, and/or computer lab
- Course materials/books

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The IDOC facilities will have tables and chairs; all other equipment and tools will need to be provided by grantees. Grantees may wish to purchase a cabinet for storing equipment and tools, or they may bring a mobile lab.

### D-7. Estimated training length

The HVAC training involves a minimum of 80 hours of in-person instruction and practice.

### D-8. Training size

This training is recommended for cohorts of 10-15 students.

### D-9. Instructor requirements

Instructors must have intermediate to expert level knowledge of the curriculum modules in the Core Curriculum section below. It is strongly recommended that the instructor have significant experience in HVAC system design, installation, and maintenance. Likewise, it is strongly recommended that the instructor have strong ties to the target communities and populations served. We recommend that the instruction team consist of:

- Lead instructor
- Facilitator, especially during labs
- Training admin/logistics support to assist with support services, stipends, scheduling

### D-10. Training objectives

Participants should demonstrate their mastery of the following training objectives:

- Identify and evaluate basic and advanced HVAC systems (including heat pumps), and their components, operation, and efficiency.
- Display knowledge of fundamental principles of how HVAC systems (including heat pumps) operate, including basic HVAC troubleshooting, basic electrical concepts, and identification of energy fuel types (e.g., propane, natural gas, all electric systems), and apply this knowledge to analyze HVAC systems.
- Demonstrate an understanding of governmental regulations and local and state building codes, contract provisions, and construction standards relevant to HVAC systems, and comply with them in all aspects of the work.
- Assess building/unit components regarding energy consumption and health and safety-related issues and generate a proposed scope of work based on cost-effectiveness, client priorities, and/or other energy efficiency program requirements, and effectively communicate this to stakeholders.
- Practice basic accounting and cost/energy estimating related to construction/retrofit and building operations and use this knowledge to inform decision-making related to HVAC upgrades.

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- Generate a recommended scope of work, including the cost-effectiveness of the proposed work, and apply this knowledge to inform HVAC system retrofit decision-making.
- Identify and calculate potential savings from green energy retrofits, including HVAC systems and upgrades to high-efficiency retrofits, and use this information to inform decision-making related to energy efficiency upgrades.

## D-11. Curriculum content overview

The table below presents four domains of content recommended for HVAC Mechanics and Installers' Sector-Specific Technical Skills, which are recommended for use in the training. Training should align with the [NFPA 54 \(National Fuel Gas Code\)](#) and [ACCA QI-5 \(HVAC Quality Installations\) standard](#). The content should also align with [NREL's Standard Work Specifications \(SWS\)](#).

Table 3: HVAC content domains

Domain 1	Domain 2
Basic technical knowledge	Basic installation skills
<ul style="list-style-type: none"> <li>-Demonstrate how to operate a basic residential HVAC system.</li> <li>-Identify and describe the function of system components of residential HVAC systems (e.g., furnace, air conditioner, coil, heat pump boiler, geothermal heat pump).</li> <li>-Demonstrate technical knowledge of sizing piping, wiring, fuses and breakers in residential heating and cooling systems.</li> <li>-Demonstrate knowledge of tools required in the HVAC trade and how to operate them.</li> </ul>	<ul style="list-style-type: none"> <li>-Demonstrate and describe installation techniques of residential natural gas heating, heat pump, and cooling equipment according to manufacturer's instructions.</li> <li>-Demonstrate and describe the procedures of measuring, cutting, and joining of copper tubing, black iron pipe, PVC pipe, and CVPC pipe.</li> <li>-Demonstrate and describe the procedures of measuring, cutting, and joining sheet metal.</li> <li>-Demonstrate the ability to troubleshoot HVAC systems</li> <li>-Demonstrate how to read blueprints and wiring diagrams.</li> <li>-Understand how to input and translate a load calculation program.</li> <li>-Follow the specs and P.M.I. of the equipment you are installing.</li> </ul>

Domain 3	Domain 4
Work safety standards and practices	Customer service and sales
<ul style="list-style-type: none"> <li>-Demonstrate and describe proper refrigerant techniques according to EPA 608</li> <li>-Demonstrate and describe ladder and fall prevention safety in accordance with OSHA 29 CFR 1910</li> <li>-Read and execute safety plan for HVAC system installation.</li> </ul>	<ul style="list-style-type: none"> <li>-Construct and deliver a sales presentation</li> <li>-Prepare an HVAC construction/remodel plan for a client</li> <li>-Explain the work order</li> <li>-Perform work order system</li> <li>-Assign work orders to other HVAC technicians</li> <li>-Follow through with technicians to verify work has been complete and work orders closed out properly</li> <li>-Work with outside vendors, engineers and consultants on</li> </ul>

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	projects affecting HVAC systems on buildings and incorporate their designs.
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## D-12. Assessment methods

Students should be evaluated via the following:

- In-class exams
- In-class/lab evaluation
- EPA Section 608 Certification exam
- N.A.T.E. certification exams or HVAC Excellence exams.
- Final exam including hands on demonstrations.

## D-13. Certification

Training must prepare people to take the EPA Section 608 Certification exam.

We recommend that training prepare people for one or more of the following certification exams.

Programs have the flexibility to select the exams that best meet their needs:

### NATE certifications

- NATE Ready-to-Work certificate (fundamentals and safety)
- NATE Core Exam
- Specialty exam: Air to Air Heat Pump (installation or service)
- NATE Certified HVAC Professional exams (5 exams: HVAC Fundamentals, Electrical and Controls, Comfort and Airflow, Installation, and Service).

### HVAC Excellence Employment Ready certifications:

- Air conditioning
- Basic refrigeration and charging procedures
- Electrical
- Electric Heat
- Heat Pumps/Geothermal Heat Pumps
- Building Automation Systems

## D-15. References & example curriculum

- [ACCA QI-5 \(HVAC Quality Installations\) standard](#)
- [EPA refrigerant certification](#)
- [Green Building Career Map](#)
- [NFPA 54 \(National Fuel Gas Code\)](#)
- [Understanding by Design](#)
- [US Department of Labor's Renewable Energy Competency Model](#)

## C. PROPOSING A DIFFERENT JOB-SPECIFIC TRAINING OPTION

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To propose a different job-specific training option, the following criteria must be met:

1. The jobs that the training prepares people for must be in demand throughout Illinois, not just in specific regions. People are often incarcerated far away from their home communities, and people may be released all over Illinois from your program.
2. The jobs that the training prepares people for must be clean energy jobs, defined as jobs in the solar energy, wind energy, energy efficiency, energy storage, solar thermal, green hydrogen, geothermal, electrical vehicle industries, other renewable energy industries, industries achieving emission reductions, and other related sectors including related industries that manufacture, develop, build, maintain, or provide ancillary services to renewable energy resources or energy efficiency products or services, including the manufacture and installation of healthier building materials that contain fewer hazardous chemicals.
3. The jobs that the training prepares people for must have opportunities for returning residents with transportation barriers (such as suspended driver's licenses or lack of vehicle access) or legal barriers (such as offenses that limit their ability to work at residential job sites).
4. The jobs that the training prepares people for should generally provide living wages, steady income, and benefits.
5. The training program cannot be excessively lengthy. Training should not exceed 200 hours (in addition to the bridge program training).
6. The training curriculum should align with an industry-recognized job-task analysis (if possible) and lead to an industry-recognized credential.
7. The training program should be suitable for delivery in a correctional setting, meeting all space and equipment constraints.
8. The training program should not have additional prerequisites, beyond those that can be acquired through the bridge program.

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