

State-Based Home Energy Efficiency Contractor Training Grants Webinar

September 21, 2023

Allison Moe, Sarah Truitt, Taylor Ryan (NREL)

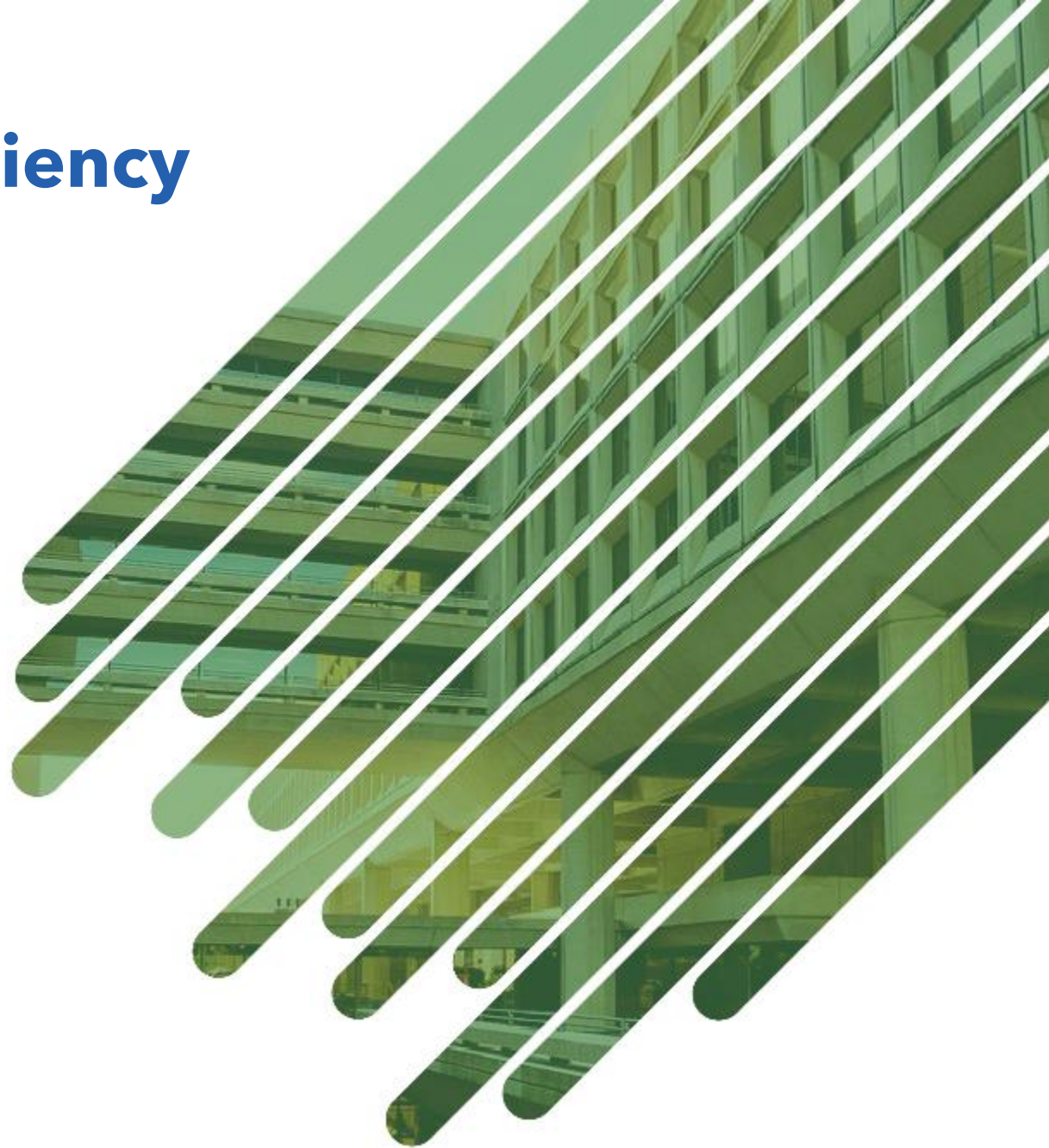
Jeff Wanner (PNNL)

Mary MacPherson (SCEP)



SCEP

STATE & COMMUNITY ENERGY PROGRAMS



Webinar Agenda

1. Overview & General Recommendations
2. State Workforce Development Plan (Part A)
 - Component 1a: Statement of Need
 - Component 1b: Programs for which funds will be used
 - Component 1c: Identifying Existing Programs
 - Component 1d: Labor Market Information
 - Component 1e: Energy Auditor Availability
 - Component 1f: Skills Assessment Report.
3. Support Resources for ALRD Responses
4. Q&A





State-Based Home Energy Efficiency Contractor
Training Grants
Overview

State programs awarded under this ALRD will use funding appropriated by the IRA to: (1) reduce the cost of training contractor employees; **(2) provide access to** workforce development tools for contractors including, but not limited to, **testing and certification;** and **(3) partner with nonprofit organizations** to develop and implement an equitable state program.

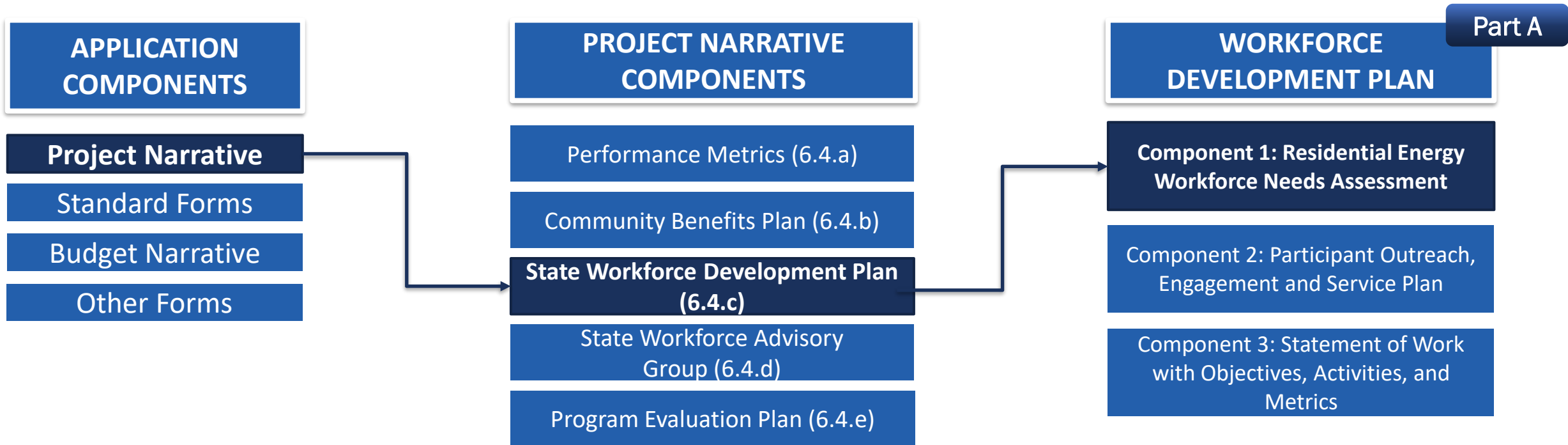
Allowable Activities

(for any of these, funds can be used to create new programs or support existing ones)

- ✓ Hard skills training*
 - Training new and upskilling existing workers
- ✓ Soft skills training
- ✓ Testing and certification*
- ✓ Entrepreneurship and business development support
- ✓ Workforce readiness and job placement
- ✓ Career and industry awareness efforts
- ✓ Promote job quality
- ✓ Support underserved communities.

* Requires DOE recognition through <https://bsesc.energy.gov/submit-recognition>

ALRD Overview



Residential Energy Workforce Needs Assessment (You must address a-d AND either e OR f)

a) Statement of Need (Supply/Demand/Gap Analysis)

b) Energy efficiency programs for which funds will be used to train workers (i.e., HOMES, HEAR, etc.)

c) Identify existing programs that provide training, credentialing, and/or wrap around services.

d) Labor market information AND

e) An assessment of residential and commercial energy auditor availability OR

f) A skills assessment report in existing education and training programs

Support Materials for Grant Development & Submission

Pacific Northwest National Lab is preparing

- Compiled references as best-practice examples of existing workforce programs.
- Narrative Document Template that can be used as framework for ALRD Submissions

DOE's **Building Science Education** Solution Center (<https://bsesc.energy.gov/>) develops and curates training modules that can be leveraged to bolster training programs.

In addition, Building Science Education recognizes exemplary curricula that can be incorporated into your Contractor Training Grant submissions.

Related questions reach out to BSESC@pnnl.gov

Component 1: Residential Energy Workforce Needs Assessment

1a) Statement of Need: Supply/Demand/Gap Analysis

ALRD
Requirement

Provide a **statement of need** that clearly articulates the **current supply** of qualified skilled energy efficiency workers **compared to the projected future demand**.

SUPPLY

DEMAND

Guidance

Partner with State Workforce Agencies Resources for estimating labor market supply **provided in guidance for Section 1d.***

Partner with State Workforce Agencies Resources provided to identify demand associated with IRA investments **using jobs multipliers**

***NOTE:** You must complete section 1d to fully answer 1a.

1. Estimate total building energy efficiency/electrification investment anticipated in your state
 - HOMES & HEAR allocations
 - Consumer contributions
 - Any additional/leveraged funds (utility, state/local programs, etc.)
2. Divide by 1 million
3. Multiply by [your state's energy efficiency jobs multiplier](#)
 - As published in an NREL report, *State-Level Employment Projections for Four Clean Energy Technologies in 2025 and 2030*, Appendix C

This calculation provides a rough estimate of the **total** number of **direct** jobs leveraged by the rebate investment in your state.

Things to consider:

- How many jobs do you expect to be supported **each year**?
- How many jobs do you expect to be **new jobs** versus **existing jobs** that may require upskilling
 - Consider investment in envelope vs electrification projects (HOMES vs HEAR)
- What types of occupations will be supported by your IRA investments?
 - Refer to [ICF analysis](#) of occupations related to ResStock upgrades

Component 1: Residential Energy Workforce Needs Assessment

1b) Programs for which funds will be used

ALRD Requirement

Indicate the program(s) for which the state will use Contractor Training Grants funding to prepare a skilled energy efficiency workforce.

- ✓ IRA Home Energy Performance- Based, Whole House Rebate Program (**HOMES**)
- ✓ IRA Home Electrification and Appliance Rebate Program (**HEAR**)
- ✓ Other federal, state-, and utility-funded incentives and financing programs.

Guidance

NOTE: NREL is not providing guidance on 1b; states will need to determine which programs they intend to use grant funding for.

Component 1: Residential Energy Workforce Needs Assessment

1c) Identify Existing Programs

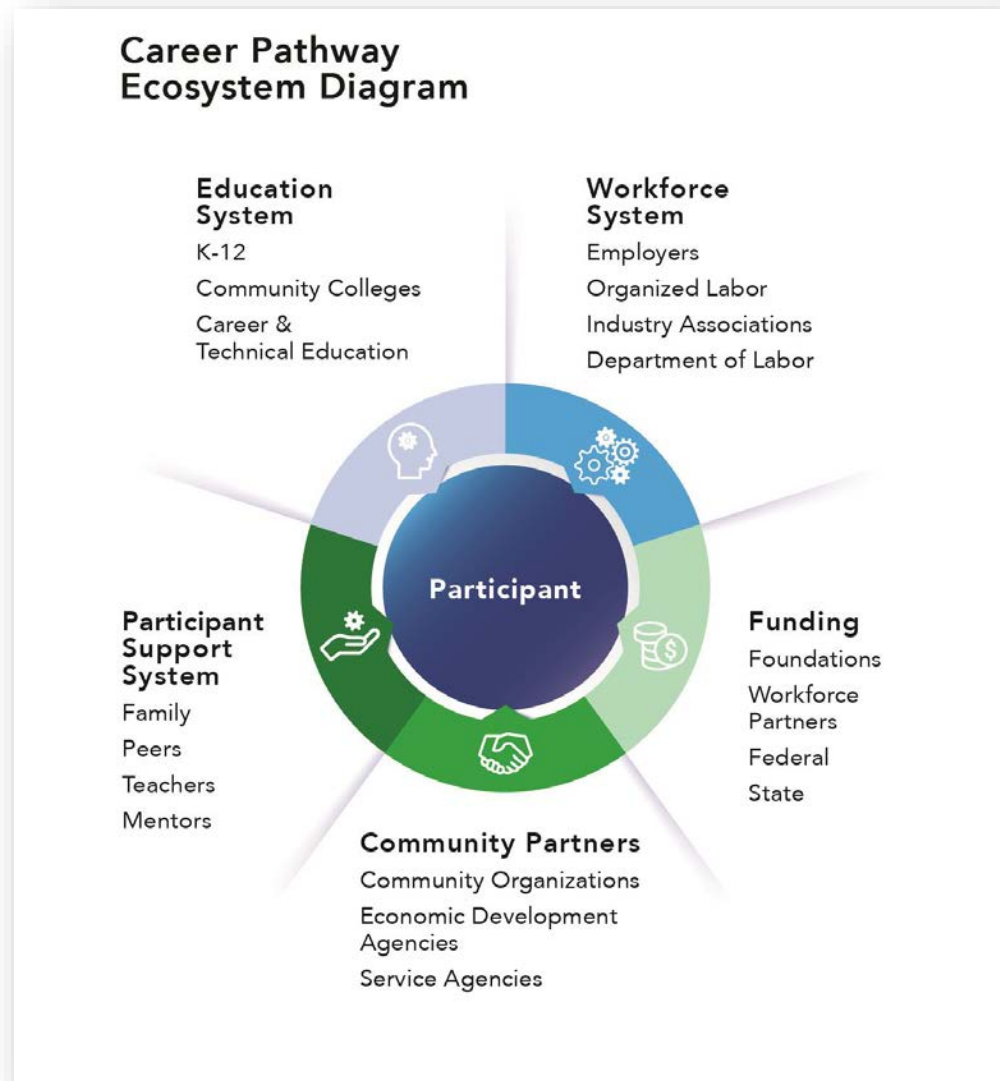
ALRD
Requirement

Identify **existing programs**, within a state's jurisdiction, that meet residential energy contractor and worker needs, including a **list of organizations** that currently provide **training, credentialing, and/or wrap around services**.

Guidance

Resources provided to identify and engage with existing organizations/programs

Workforce Ecosystem



Focus for ALRD:

- ✓ Certifying/testing/training agencies
- ✓ Local community college and trade schools
- ✓ Labor unions
- ✓ General workforce/wraparound services
- ✓ Economic development agencies.

https://betterbuildingsolutioncenter.energy.gov/sites/default/files/attachments/Career%20Pathways%20Fact%20Sheet_Final_map.pdf

Identify Partners in Your State

<https://airtable.com/appCJKowPLSWm4OzL/shrdkGzo5uKsbSJmE>

<input type="checkbox"/>	Organization Type	Organization	Link
1	ALRD – Training and Certification Organizations	ASHRAE Test Centers	https://www.ashrae.org/professional-development/ashrae-certification/certification-types/beap-building-energy-assessment-professional-certi...
2	ALRD – Training and Certification Organizations	AEE- Certified Energy Auditor Certification	https://www.aeecenter.org/aee-training/training-partners/
3	ALRD – Training and Certification Organizations	BPI Testing and Training Centers	https://www.bpi.org/bpi-test-centers
4	ALRD – Training and Certification Organizations	RESNET Training Providers	https://www.resnet.us/providers/accredited-providers/accredited-rater-training-providers/
5	ALRD – Training and Certification Organizations	Home Energy Score Trainers	https://betterbuildingssolutioncenter.energy.gov/home-energy-score/become-assessor
6	ALRD – Training and Certification Organizations	North American Technician Excellence (NATE) testing locations	https://natex.org/locate-a-training-organization
7	ALRD – Training and Certification Organizations	ESCO Accredited Programs	https://www.escogroup.org/accreditation/programs/accredited.aspx
8	ALRD – Training and Certification Organizations	AOSmith	https://university.hotwater.com/onlinecertifications/
9	ALRD – Training and Certification Organizations	Rheem	https://www.rheemacademy.com/
10	ALRD – Training and Certification Organizations	Bradford White	https://www.bradfordwhite.com/training/
11	ALRD – Training and Certification Organizations	Regional Energy Efficiency Organizations (REEOs)	https://eepartnership.org/about/regional-energy-efficiency-organizations-network/
12	Other Training Organizations	Community Colleges/Technical Schools/Colleges and Universities	https://nces.ed.gov/collegenavigator/
13	Other Training Organizations	Searchable database of HVAC training and education providers	https://www.hvacclasses.org/
14	Other Trade Organizations	United Association of Journeymen and Apprentices of the Plumbing and Pipefittin...	https://ua.org/
15	Other Trade Organizations	Sheet Metal, Air, Rail and Transportation Union (SMART)	https://smart-union.org/
16	Other Trade Organizations	Plumbing, Heating, Cooling Contractors Association	https://www.phccweb.org/
17	Other Trade Organizations	Insulators Union	https://www.insulators.org/union-directory
18	Other Trade Organizations	International Brotherhood of Electrical Workers (IBEW)	https://www.ibew.org/Tools/Local-Union-Directory
19	Community/Workforce/Economic Development Organizations	WIOA and Workforce Services	https://www.careeronestop.org/LocalHelp/AmericanJobCenters/american-job-centers.aspx ; https://www.careeronestop.org/LocalHelp/Employ...
20	Community/Workforce/Economic Development Organizations	EDA Economic Development Directory	https://www.eda.gov/economic-development-directory
21	Community/Workforce/Economic Development Organizations	Nonprofit (web search)	National organizations that may provide workforce services include United Way, Goodwill Industries
22	Community/Workforce/Economic Development Organizations	Small Business Development Centers (SBDC)	https://www.sba.gov/local-assistance/resource-partners/small-business-development-centers-sbdc

Engaging with Potential Partners

Before reaching out, identify the role and level of commitment you envision.

Potential roles for partners could include:

- Develop curriculum
- Provide training (hard and/or soft skills)
- Support with advertising/recruiting, especially to specific populations
- Provide supportive/wraparound services
- Support program evaluation
- Connect trainees to jobs
- Employ trainees.



Questions to Consider when Engaging with Potential Partners

For training/certifying/industry organizations:

- What challenges would you have in ramping up training quickly to meet new demand?
- How do you approach recruitment?



Questions to Consider when Engaging with Potential Partners

For workforce/wraparound service providers:

- Do you have existing partnerships with construction/HVAC/Energy employers or training providers?
- What populations does your organization work with?



Questions to Consider when Engaging with Potential Partners

For nonprofit/community partners:

- Does your organization have the capacity to support us in any of the following ways?
 - Advertising training and employment opportunities
 - Recruiting
 - Providing wraparound or support services to trainees.



Questions to Consider when Engaging with Potential Partners

For employer partners:

- How many staff do you employ?
- How many new staff do you intend to bring on in the next 12 months (breakdown by occupation)?
- What is your starting wage for new hires?
- How do you currently train your staff?



Component 1: Residential Energy Workforce Needs Assessment

1d) Labor Market Information (supply)

ALRD
Requirement

Present labor market information produced by federal or state departments of labor including 1) **current rates of employment** in key occupations and 2) **forecasts of growing or declining industries** and 3) **wage distributions** across relevant occupations.

Guidance

Resources provided to identify occupation-specific data available from the US Bureau of Labor Statistics (BLS).*

*NOTE: BLS provides current employment and wage data by state, but forecasts are only available nationally.

Current Employment and Wage Data by Occupation (State level)

1. Select “Multiple occupations for one geographic area”
2. Select “State” – pick your state
3. Select SOC codes (see next slide)
4. Select data types
5. Employment, Annual Mean/Median Wage, Location Quotient
6. Select release date and format

<https://data.bls.gov/oes/#/home>

The screenshot shows the BLS OES data selection interface. It includes several sections for user input:

- Select a search type:** Radio buttons for "Multiple occupations for one geographical area" (selected), "One occupation for multiple geographical areas", "Multiple occupations for one industry", and "One occupation for multiple industries".
- Select a geographic type:** Radio buttons for "National", "State" (selected), and "Metropolitan or Non Metropolitan Area".
- Select one State:** A dropdown menu with "Colorado" selected.
- Select one or more occupations:** A list of checkboxes for various occupations, with "Construction and Building Inspectors" checked.
- Select one or more datatypes:** A list of checkboxes for data types, with "Employment" and "Annual mean wage" selected.
- Select one or more release dates:** A dropdown menu with "May 2022" selected.
- Select an output type:** A dropdown menu with "HTML" selected.

Navigation buttons labeled "Next" and "Submit" are visible on the right side of the form.

Current Employment and Wage Data by Occupation (State level)

Section 6.4,
Pages 25-26

SOC CODES

Under “Construction and Extraction Occupations”

- **Electricians:** 47-2111.00
- **Plumbers:** 47.2152.00
- **Insulation Workers:** 47-2131.00
- **Mechanical Insulation Workers:** 47-2132.00

Under “Installation, Maintenance, and Repair Occupations”

- **HVAC Contractors:** 49-9021.00

Current Employment and Wage Data by Occupation (State level)

Occupational Employment and Wage Statistics Query System



Occupational Employment and Wage Statistics

(For more information or help)

Multiple occupations for one geographical area

[Back to Inputs](#)

Area: Colorado

Period: May 2022

Occupation (SOC code)	Employment(1)	Annual mean wage(2)	Annual median wage(2)	Location Quotient
Electricians(472111)	16500	59280	58990	1.28
Plumbers, Pipefitters, and Steamfitters(472152)	9560	61750	61180	1.19
Construction and Building Inspectors(474011)	4000	68700	66170	1.66
Heating, Air Conditioning, and Refrigeration Mechanics and Installers(499021)	6990	59370	57450	1.00

Footnotes:

(1) Estimates for detailed occupations do not sum to the totals because the totals include occupations not shown separately. Estimates do not include self-employed workers.

(2) Annual wages have been calculated by multiplying the corresponding hourly wage by 2,080 hours.

SOC code: Standard Occupational Classification code -- see <http://www.bls.gov/soc/home.htm>

Data extracted on August 16, 2023

Example query for Colorado

Current Employment and Wage Data by Occupation (State level)

CONSIDERATIONS

BLS data is not available for Energy Auditors (although they have a SOC code)

Only a portion of these workers work on residential buildings

Location quotient compares the share of jobs for each occupation within the selected geography compared to the share of jobs for the entire country.

Employment Projections by Occupation (National Level)

Find **2021-2031** National **Employment Projections** by Occupation

Search by Occupation Title or Code (one by one)

NOTE: Numbers shown are in thousands

EMP

Employment Projections

Occupational Projections Data

Employment in thousands.
Detailed information about the variables displayed here is available in the [Employment Projections Data Overview](#). Files containing these data are available for download at <https://www.bls.gov/emp/data/occupational-data.htm>.

[Download CSV](#)

Show **All** entries

Occupation Title	Occupation Code	Employment 2021	Employment 2031	Employment Change, 2021-2031	Employment Percent Change, 2021-2031
<input type="text" value="Search"/>	<input type="text" value="47-2111"/>				
Total, all occupations	00-0000	158,134.7	166,452.1	8,317.4	5.3
Electricians Show/hide Example Job Titles	47-2111	711.2	761.4	50.2	7.1

Showing 1 to 1 of 1 entries (filtered from 832 total entries) < Previous **1** Next >

[Employment Projections Home](#) | [Occupational Projections Data](#) | [Search by Occupation](#) | [Search by Industry](#) | [Employment Projections Data Overview](#) | [Related Information](#)

<https://data.bls.gov/projections/occupationProj>

Employment Projections by Occupation (National level)

CONSIDERATIONS

Is your state economy similar to the national economy for the identified occupations?

- One place to look is location quotient, which compares the share of jobs for each occupation within the selected geography compared to the share of jobs for the entire country.
Ex: For a given occupation, an LQ of 1 means that that occupation shows up as frequently in the region's total jobs as it does in the nation. An LQ below 1 indicates these jobs are less prevalent in the state economy than they are nationally, and an LQ above one indicates those jobs are more prevalent in the state economy than they are nationally.
- States will need to make decisions about whether they believe their region may expect lower or higher rates of change compared to the country as a whole.

Component 1: Residential Energy Workforce Needs Assessment

1e) Energy auditor availability & readiness

ALRD
Requirement

Provide an assessment of residential and commercial **energy auditor availability** and **readiness**.

Guidance

Resources provided to roughly estimate energy auditor availability by State

NOTE: You can respond to either 1e OR 1f.

Search for Certified Energy Auditors/Assessors

- [ASHRAE - Certified Building Energy Assessment Professionals](#)
 - [AEE – Certified Energy Auditors](#) (select certification type)
 - [BPI – Certified Energy Auditors & Energy Analysts](#)
(select certification types)
 - [RESNET – Certified Home Energy Raters](#)
 - [Home Energy Score – Assessors](#)
- Talk to **utilities/auditors** to **understand availability, readiness** and wait times in your state.

NOTE: Starting in 2024, homeowners looking to claim the [Energy Efficient Home Improvement Credit \(Section 25C\)](#) for home energy audits can also use a company that has met these training requirements (except Home Energy Score Assessors).

Component 1: Residential Energy Workforce Needs Assessment

1f) Skills assessment report

ALRD
Requirement

Provide a **skills assessment report** in **existing education and training programs**, such as on new energy technologies, latest best practices, or newly launching programs.

Guidance

1. Determine the skills and technologies that existing energy efficiency-related education and training programs in your state address.
2. Identify gaps that new programs could fill.

NOTE: You can respond to either 1e OR 1f.

Support Resources for ALRD Responses

Developed by PNNL

Grant Submission Support Materials

Best-practice examples of state-based workforce programs.

- Guidance document with exemplary programs and related content.
- Could be expanded from other agencies in your state or mirrored

Narrative Document Template that can be used as submission framework.

Component 1. Residential Energy Workforce Needs Assessment

a. Provide a statement of need that clearly articulates the current supply of qualified skilled energy efficiency workers compared to the projected future demand (DOE encourages States to partner with State Workforce Agencies to conduct a gap analysis to identify the labor supply needed to meet the labor demands):

b. Indicate the program(s) for which the State will use CTG funds to prepare a skilled energy efficiency workforce. Programs could include the following:

- Inflation Reduction Act Home Energy Performance-Based, Whole House Rebate Programs (HOMES)
- Home Electrification and Appliance Rebate Program (HEAR)
- Other existing or planned Federal, State-, and utility-funded incentives and financing programs, as resources exist:

c. Identify existing programs, within a State's jurisdiction, that meet residential energy contractor and worker needs, including a list of organizations currently provide training, credentialing, and/or wrap around services:

Provide labor market information produced by Federal or State departments of labor, as well as other sources, including current rates of employment in key occupations and

6.4.a Performance Metrics

Metric Targets

Fill in the below table with targets for each performance metric. The project design must address the full purpose of the ALRD within the 48-month period of performance. States should consider all parts of the proposed Project Narrative, Community Benefits Plan; Workforce Development Plan; including the project design, recruitment and outreach activities, identified target audience(s), training type and length of training offered, and other factors relevant to the achievement of each of the targets for performance metrics.

Performance Metric	Target Audience(s)	Planned Numeric Target for the Period of Performance
Number of individuals and/or businesses enrolled in the training program.	New workers	
	Existing workers	
	Contractor firms	
The percentage of individuals that completed the training program.	New workers	
	Existing workers	
	Contractor firms	
The number of individuals that received a certification.	New workers	
	Existing workers	
	Contractor firms	
and type of industry-recognized skill or business certifications through program assistance.	New workers	
	Existing workers	
	Contractor firms	
of underserved or underrepresented populations by type, geographics, and zip code (including returning citizens, veterans, residents of disadvantaged communities, transitional youth, or displaced or at-risk energy workers)	New workers	
	Existing workers	

Workforce Training Resources

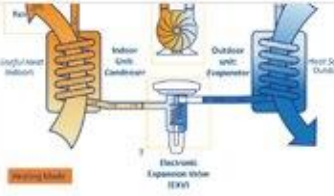
DOE's Building Science Education Solution Center (<https://bsesc.energy.gov/>)

– Provides curated and free training materials on building science.

Instructor Resources: Lecture notes, Problem sets, Slide decks, and Other resources

Topical Content Training Modules such as:

- [Intro to Heat Pumps](#)
- [Smart and Dual-Fuel Thermostats](#)
- [Electrical Panel Assessment](#)
- [Introduction to Heat Pump Water Heaters](#)
- [Installation of Heat Pump Water Heaters](#)
- [Decision Guidance on Heat Pump Water Heaters](#)



HVAC - Introduction to Heat Pumps

Introduction to heat pump systems, including heat pump basics, sizing and design, and customer and...



HVAC - Cold Climate Heat Pump Sizing

Sizing and selection practices for air source heat pumps specified to operate efficiently in cold...



HPWH - Introduction to Heat Pump Water Heaters

Introductory level information on heat pump water heaters.



HPWH - Load Shifting

Educational content on heat pump water heater load shifting and the devices that enable it.

DOE-Recognized Training Programs

Building Science Education

In support of developing a strong Building Systems Workforce, this effort recognizes training certifications that align with DOE goals.

Through this effort, DOE recognizes

- Heat Pump Programs (bsesc.energy.gov/heat-pump-programs)
- Heat Pump Water Heater Programs (bsesc.energy.gov/heat-pump-water-heater-programs)
- Energy Assessment Programs (bsesc.energy.gov/energy-assessment-programs)

Each provide open-source content that any program could use. Existing training programs are recognized based on meeting scoring criteria for job scopes.

Any training program can submit for recognition through the website or email directly to BSESC@pnnl.gov

QUESTIONS?

<https://www.energy.gov/scep/state-based-home-energy-efficiency-contractor-training-grants-questions-and-answers>

Upcoming Office Hours – Register on Zoom

Office Hours for ALRD Guidance Webinar #1

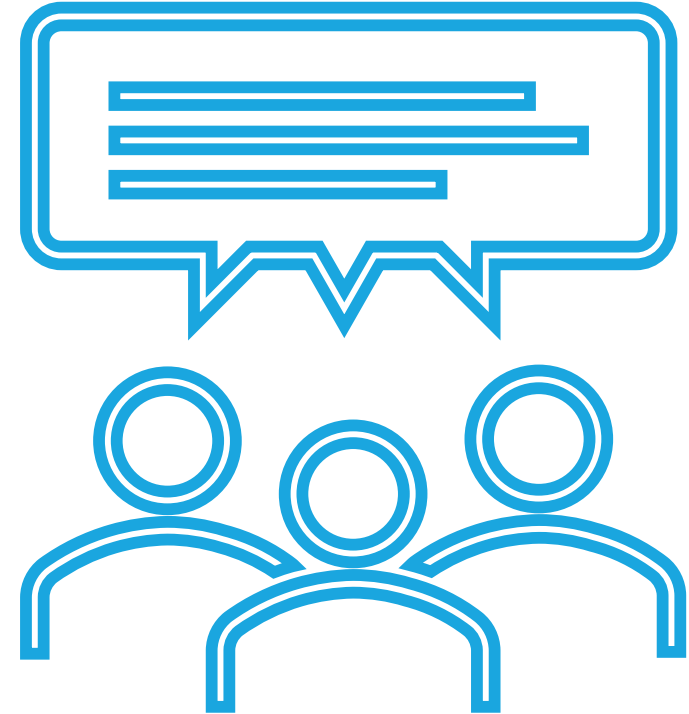
- September 28
- October 5, 3-4 p.m. EDT

ALRD Guidance Webinar #2

- October 26, 3-4 p.m. EDT

Office Hours for ALRD Guidance Webinar #2

- November 2
- November 16, 3-4 p.m. EDT



Thank you!

Email questions to

ee workforce programs@hq.doe.gov



Appendix

Additional Questions for Potential Partners

Questions to Consider when Engaging with Potential Partners

For training/certifying/industry organizations:

- What challenges would you have in ramping up training quickly to meet new demand?
- How do you approach recruitment? Do you/have you done targeted outreach to certain parts of the state, certain populations, etc.? Do you conduct outreach or training in languages other than English?
- What data do you currently collect for your trainees/participants?
- Would you be willing to adjust your enrollment/application forms to include questions we need data for?

Questions to Consider when Engaging with Potential Partners

For workforce/wraparound service providers:

- Do you have existing partnerships with construction/HVAC/Energy employers or training providers?
- What populations does your organization work with?
- What type of supportive services does your agency provide?
 - Job readiness (help with resumes, interview preparation)
 - Work clothing stipends
 - Transportation assistance
 - Childcare assistance
 - Training/employment reimbursement
- Does your organization need access to our program data for your own tracking or reporting? What specific data points will you need?

Questions to Consider when Engaging with Potential Partners

For nonprofit/community partners:

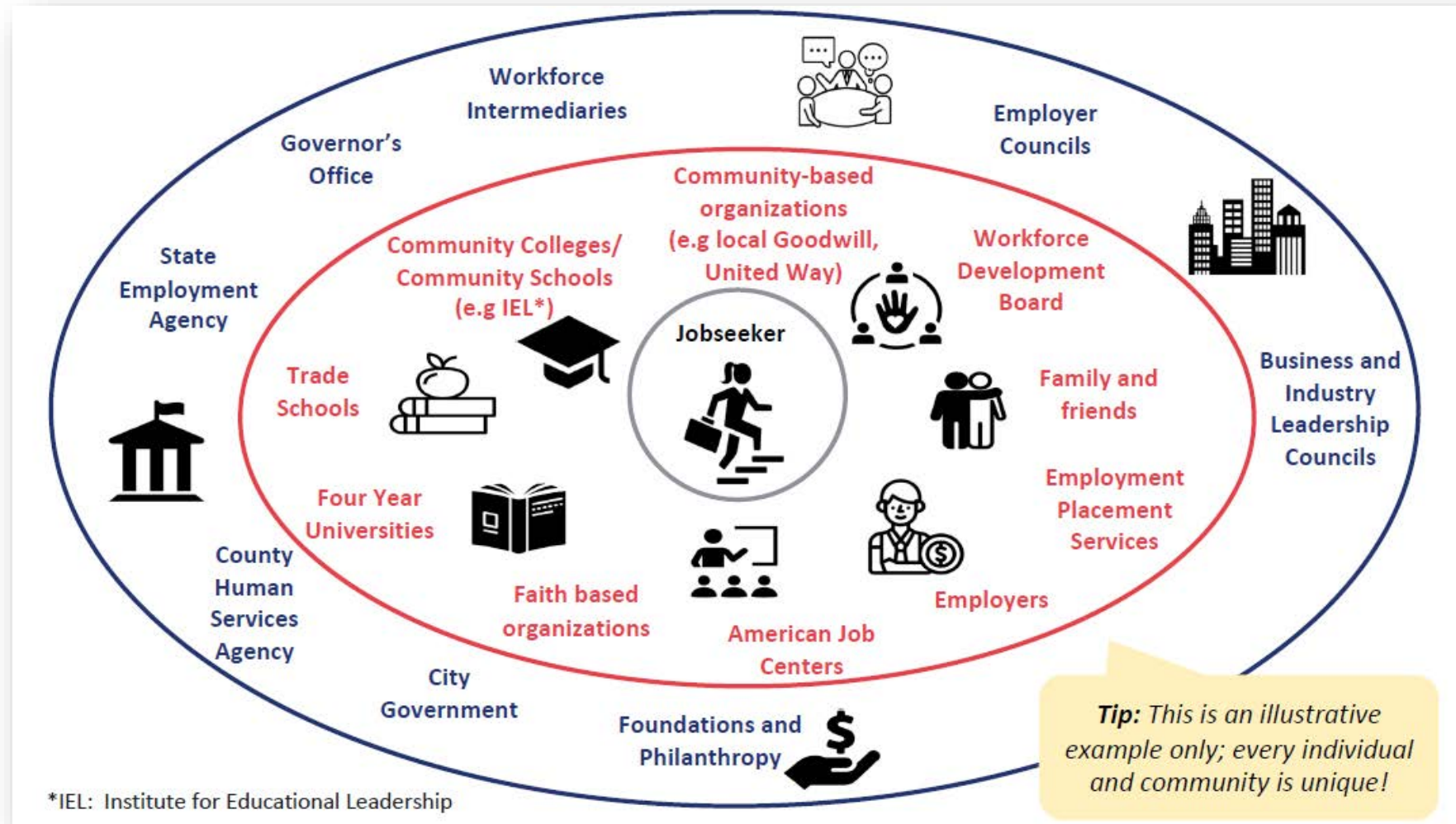
- What populations does your organization work with?
- What challenges do you/the people you work with face regarding accessing training and connecting with jobs?
- Does your organization have the capacity to support us in any of the following ways?
 - Advertising training and employment opportunities
 - Actively recruiting training participants
 - Providing wraparound or support services to trainees
- Does your organization need access to our program data for your own tracking or reporting? What specific data points will you need?

Questions to Consider when Engaging with Potential Partners

For employer partners:

- How many staff do you employ?
- How many new staff do you intend to bring on in the next 12 months (breakdown by occupation)?
- What is your starting wage for new hires?
- Would you be interested in hiring short-term trainees that have been screened and trained?
 - Would you be willing to pay for this short-term employment?
 - Would you be able to make staff available to help mentor these trainees?
- Would you be interested in engaging with trainees in other ways?
 - Meet and greets (virtual or in person)
 - Job shadowing or “ride-alongs”
- Would you be able to share data about any trainees you hire, including wage info?

Workforce Ecosystem – Alternative Graphic



https://betterbuildingsolutioncenter.energy.gov/sites/default/files/attachments/Career%20Pathways%20Fact%20Sheet_Final_map.pdf