



Growing the Solar Workforce in Illinois



School of Labor and Employment Relations

Climate Jobs Institute

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Research*



**Climate Jobs
Institute**

About the Climate Jobs Institute



What we do

We conduct research to guide the State of Illinois towards an equitable clean energy future. Our research prioritizes the needs of workers and their communities.

**Climate Jobs
Institute**



Exploring Illinois' solar workforce needs



1

Where we are now, where we want to be

2

Aligning workforce opportunities with workforce needs.

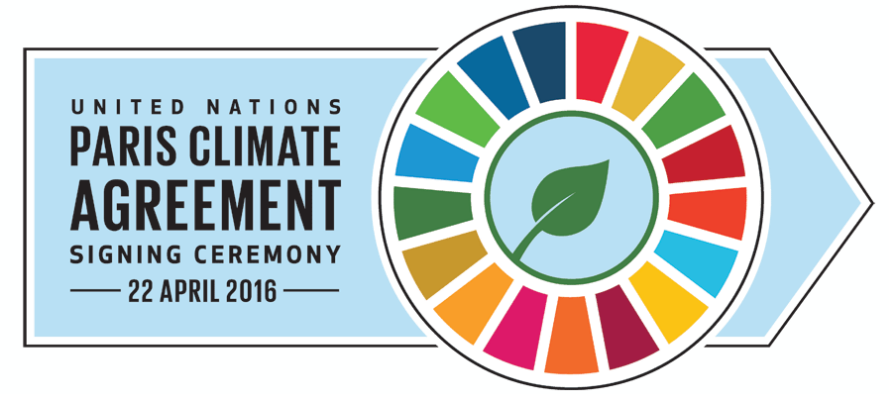
3

Equity considerations



**Where are we at with
renewable energy generation
and our overall climate goals?**

Illinois' commitment to the Paris Climate Agreement



- Reduce greenhouse gas emissions 50-52% below 2005 levels by 2030.
- Achieve net zero no later than 2050.

[IEPA State of Illinois Climate Action Plan](#)

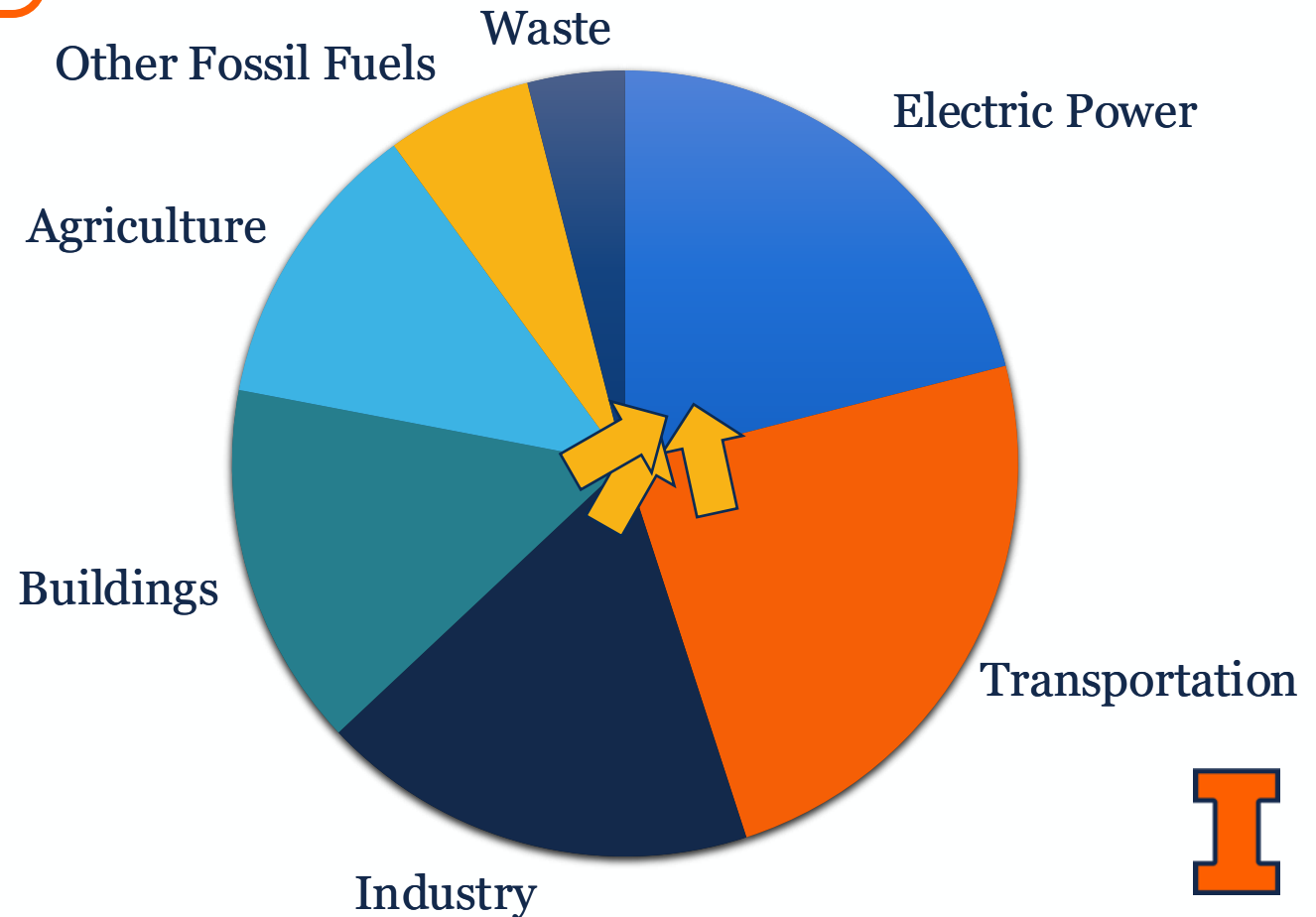


We'll meet our commitment by . . .

- Making our electric power carbon free (i.e., renewables)
- Energy efficiency and conservation
- Electrification (will require more renewable energy)
- Other solutions

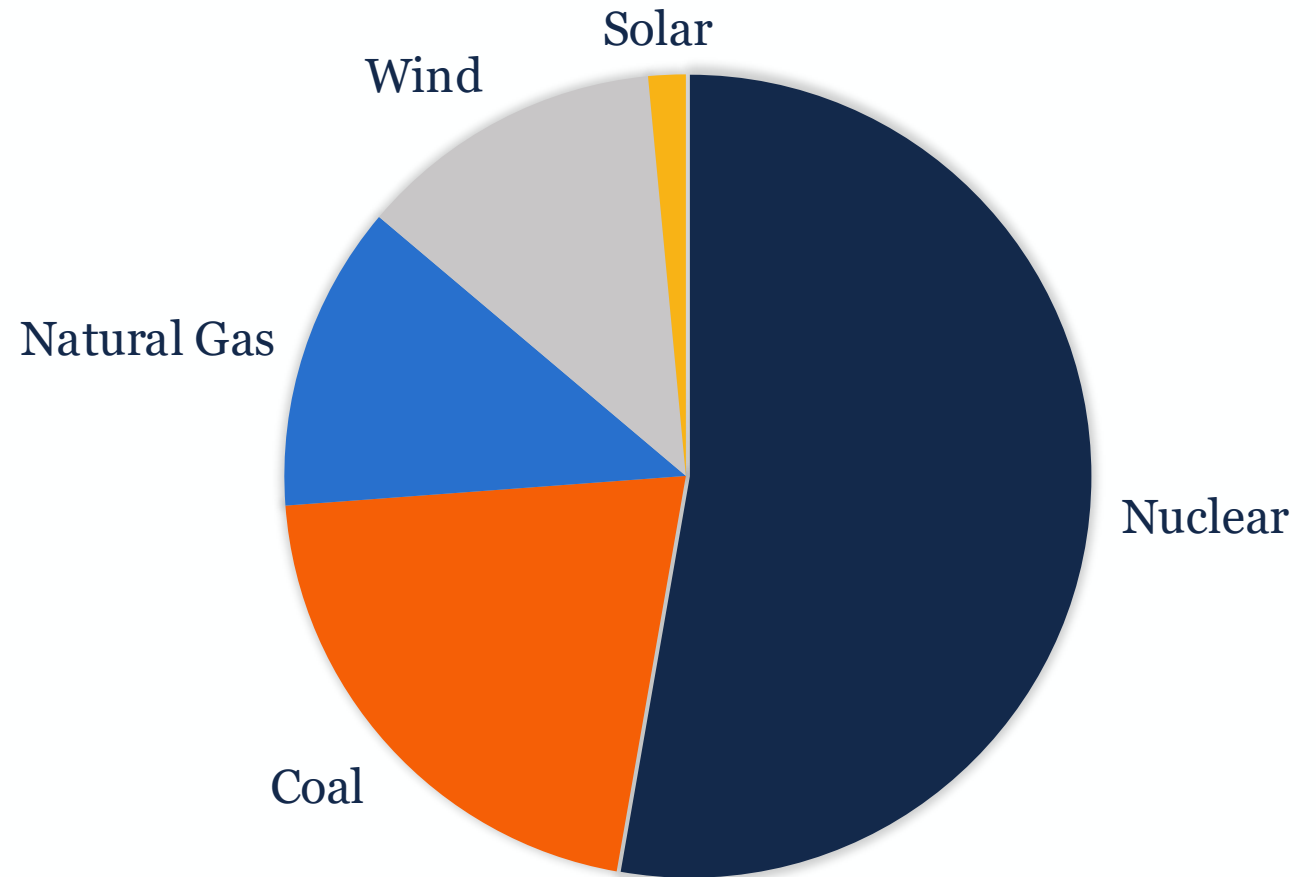
Source: Illinois EPA State of Illinois Climate Action Plan 2023

2021 GHG emissions by Sector



How carbon free is our electric grid mix?

Illinois Electric Grid Mix
2021

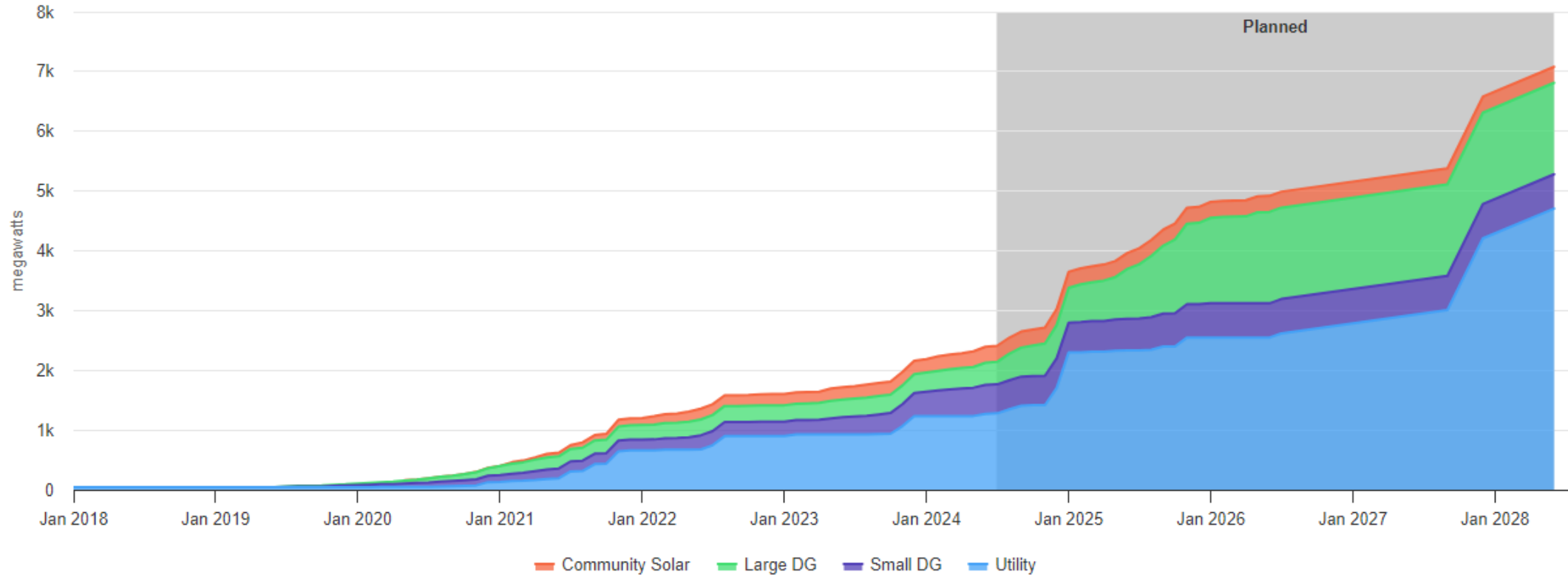


[Illinois EPA State of Illinois Climate Action Plan](#)



Solar generation in Illinois is increasing

Cumulative MW of solar energized and planned over time



Source: [Illinois Solar Map](#) produced by the Illinois Clean Jobs Coalition and Chi Hack Night.





**Is job growth keeping up
with renewable energy
generation growth?**



Solar job growth in Illinois is modest

NREL estimates ~2.5 jobs/MW solar (additional workforce required to achieve MW deployment levels).

- Most (1.5) from construction
- More jobs per MW for residential solar, less for utility

Illinois solar capacity added vs. jobs added 2021, 2022, 2023

Year	Solar capacity added	Estimated jobs added	Actual jobs added	Total jobs
2021	809 MW	2,022	561	6,087
2022	400 MW	1,000	492	6,579
2023	591 MW	1,477	409	6,988

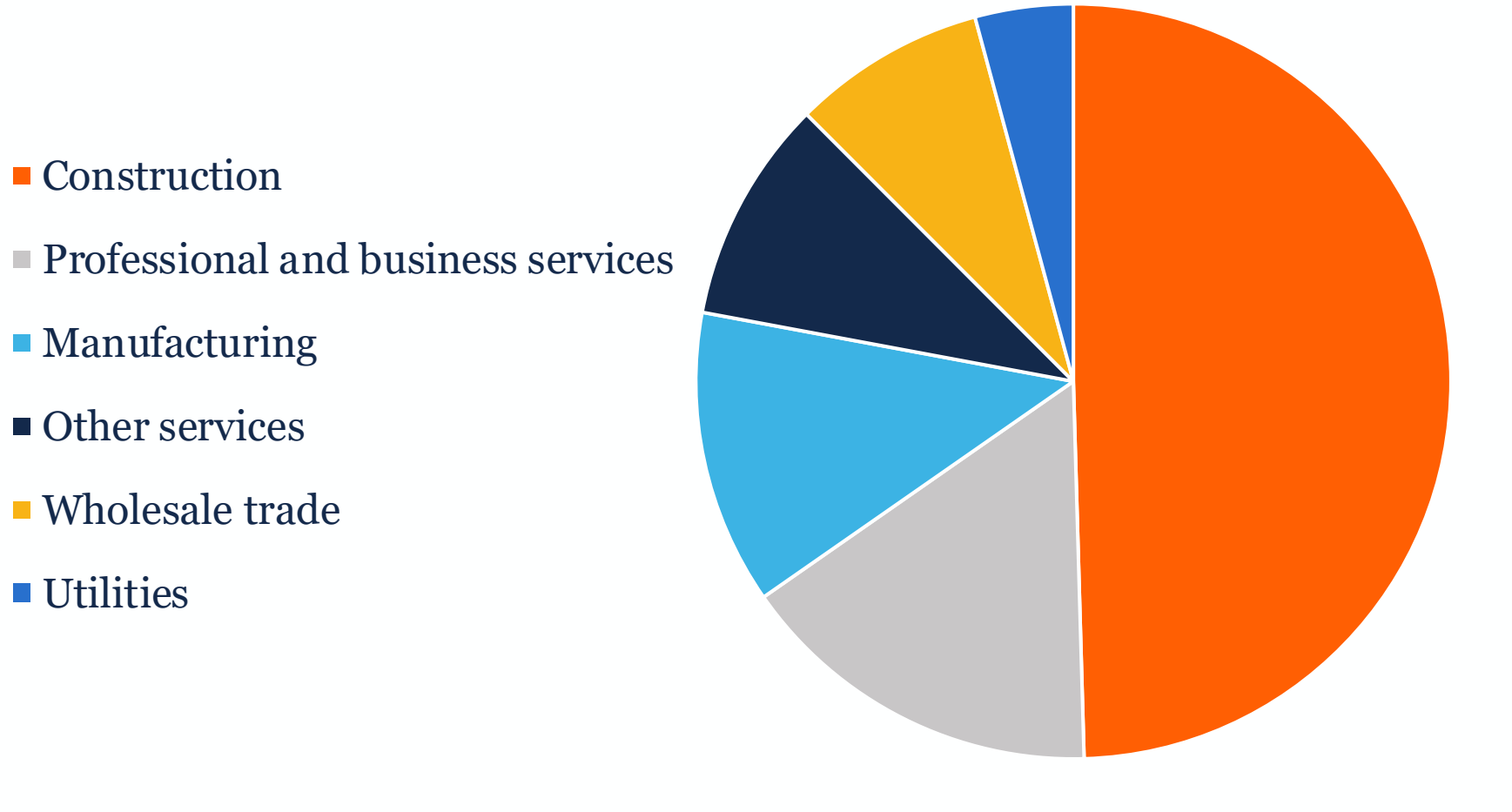
NREL [PV Job Multipliers](#)

USEER 2020, 2021, 2022, 2023, [2024 State Report](#)

Solar generation: [Illinois Solar Map](#)



U.S. Solar Employment by Industry 2023

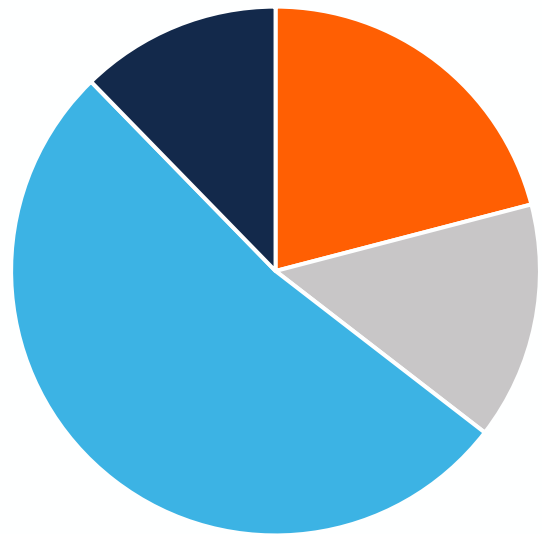


Source: [USEER Report 2024](#)



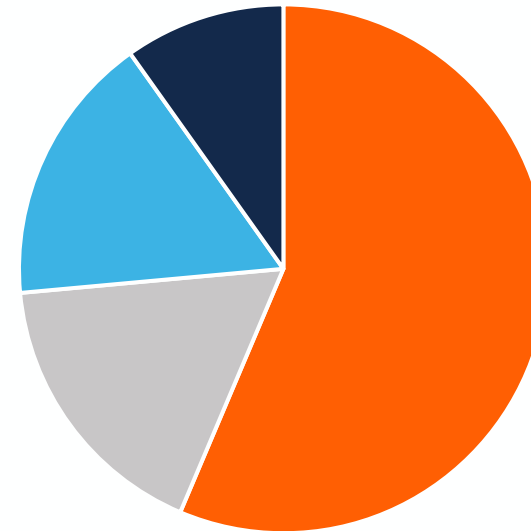
Solar market segments and jobs by market segment

Illinois solar energized projects by market category, 2024



- Small DG (residential)
- Large DG (commercial)
- Utility Scale
- Community Scale

US Solar Installation Jobs by Market Segment, 2022-2023



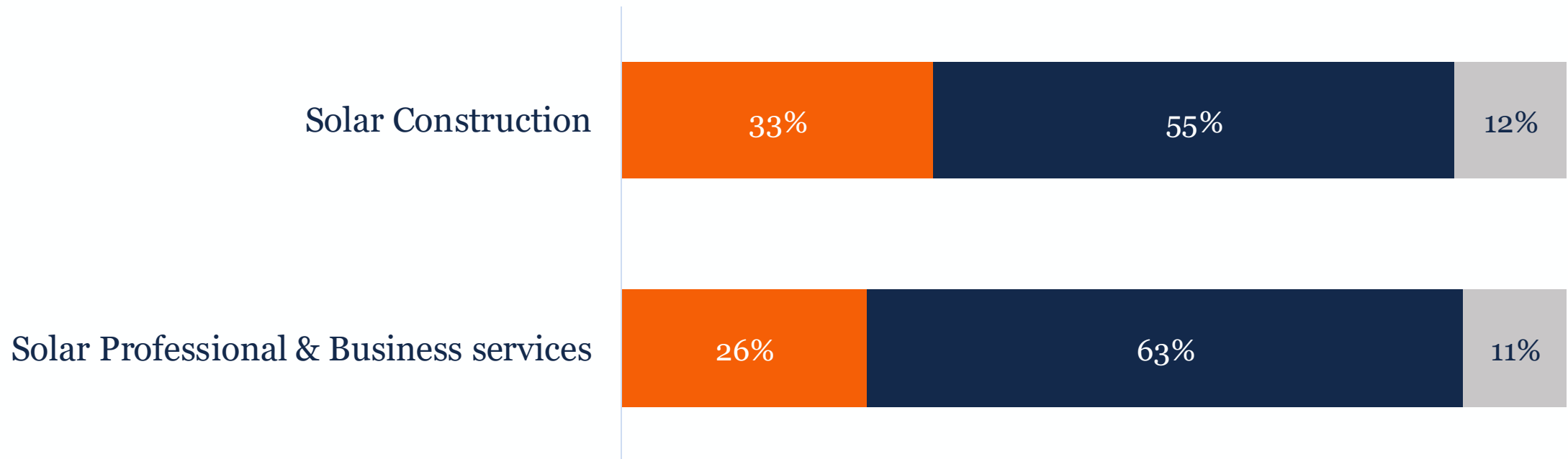
- Residential
- Commercial
- Utility scale
- Community Scale



Hiring Difficulty

US Solar Employers' Perceived Hiring Difficulty by Industry

■ Very difficult ■ Somewhat difficult ■ Not at all difficult



Source: [USEER Report 2024](#)



Hiring to Meet Minimum Equity Standards

CEJA requires businesses participating in Illinois Shines, Self-direct Program, utility wind and solar, or other competitive renewable procurements to meet Minimum Equity Standards.

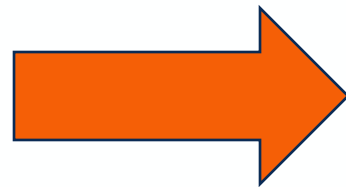


Minimum Equity Standards Met by Hiring “Equity Eligible Persons”

- CEJA & FEJA participants (No CEJA participants yet)
- Residents of equity investment eligible communities
- Formerly incarcerated people and foster care graduates

2023:

10% of workforce must be equity eligible persons



2030:

30% of workforce must be equity eligible persons



A Few Takeaways

Is job growth keeping up with solar development?

- We're seeing modest increases in solar employment, compared to solar development.

It's hard to hire—especially in construction, professional services.

- Meeting Minimum Equity Standards can be challenging without CEJA programs operating.

Who is building out our solar infrastructure?

- Out of state workers?
- Do we need a more accurate solar jobs inventory in Illinois?



**We need the workers, and we
need them now. Where are the
workforce programs?**



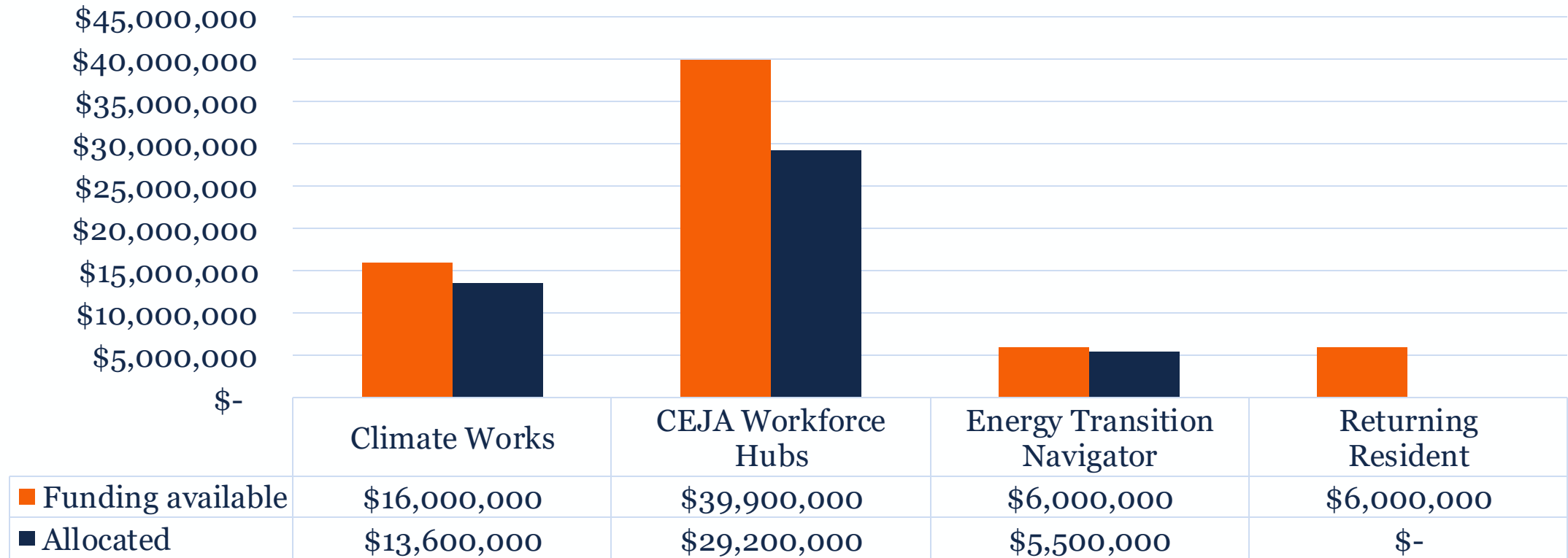
Let's start with CEJA

CEJA Passed
Sept 2021



CEJA Programs Operational
Fall 2024

CEJA Workforce Funding Available vs. Allocated (annual)



A Few Key Challenges

- DCEO capacity challenges (hiring, training, implementing, etc.)
- “Do it right” vs. “do it quickly”
- Local capacity challenges (applying for funding, managing grants, providing training)
- Skepticism, competing priorities, low trust



Training programs in operation

FEJA training programs (\$10M/yr)

- Solar Training Pipeline
- Craft Apprenticeship
- Multicultural Jobs

Building and construction trades

- Apprenticeship programs
- Pre-apprenticeship programs (Illinois Works, YouthBuild)

Community college programs





As CEJA launches:

**Do workforce investments align with
renewable energy workforce needs?**



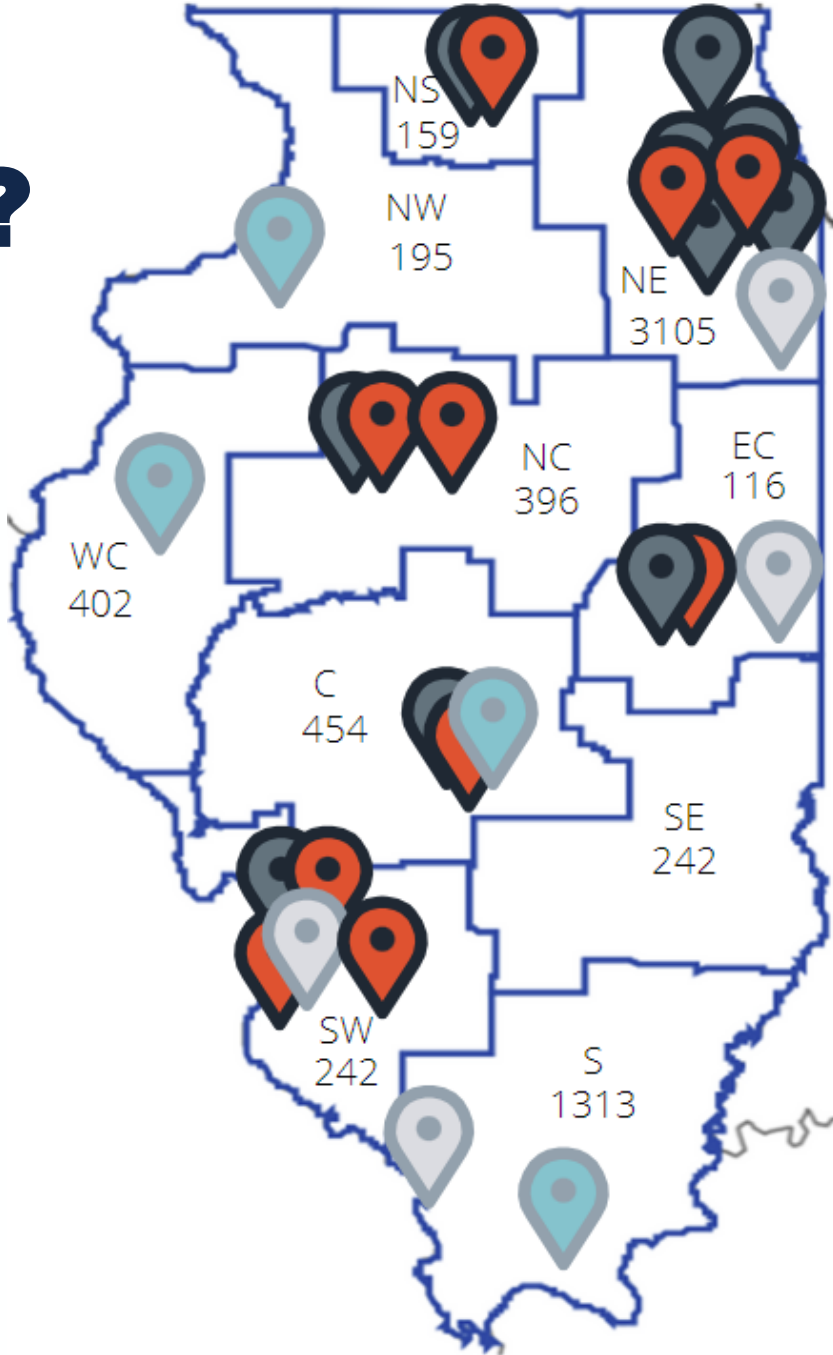
Where are the CEJA Training Programs?

-  CEJA Workforce Hub locations (awarded)
-  CEJA Workforce Hub locations (not awarded)
-  Climate Works locations (awarded)
-  Returning resident locations (not awarded)



Where are the existing solar jobs?

-  CEJA Workforce Hub locations (awarded)
-  CEJA Workforce Hub locations (not awarded)
-  Climate Works locations (awarded)
-  Returning resident locations (not awarded)

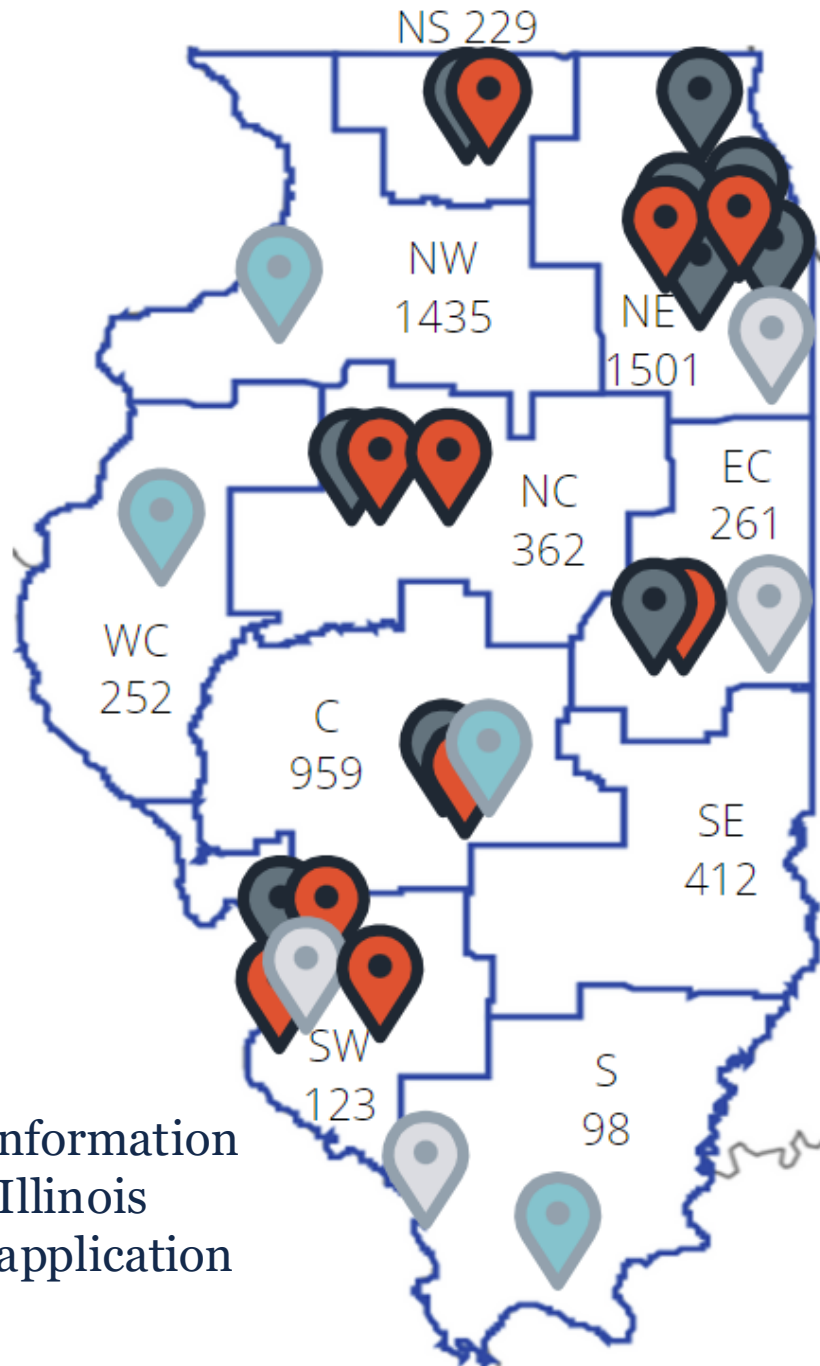


Source: USEER 2024
County Level Data






Where are the planned solar installations?

Planned or estimated total solar (MW)



Energization dates range from late 2024 to 2028

-  CEJA Workforce Hub locations (funded)
-  CEJA Workforce Hub locations (unfunded)
-  Climate Works locations (funded)
-  Returning resident locations (unfunded)

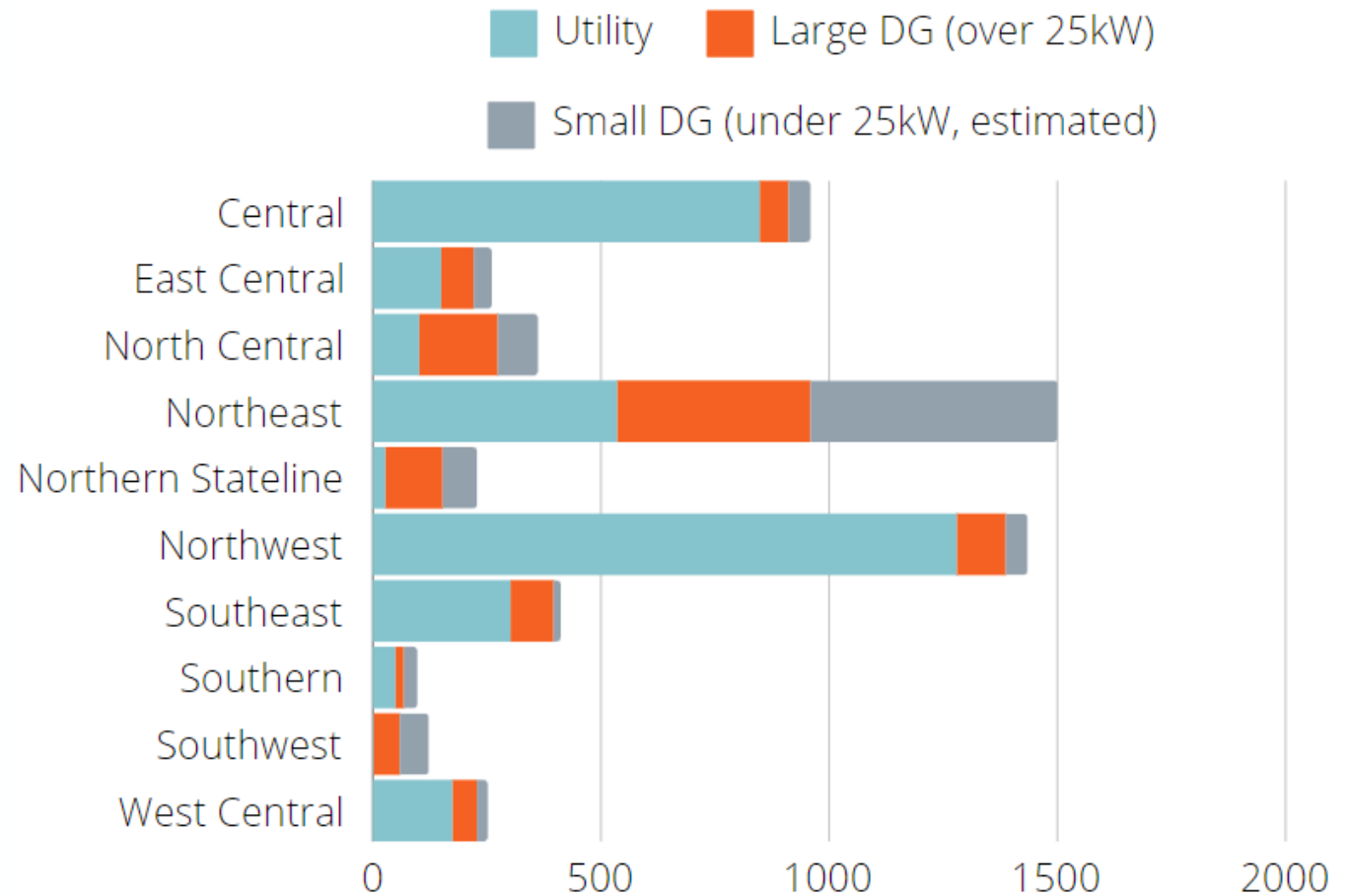
Source: US Energy Information Administration and Illinois Power Agency solar application data, June 2024



Planned or estimated solar

- Small DG is more labor intensive per MW than utility scale or large DG.
- Small DG is concentrated in urban areas.
- Small DG: estimates based on operating installations, not project applications

Economic Development Region Planned or Estimated Solar (MW) by Solar Type

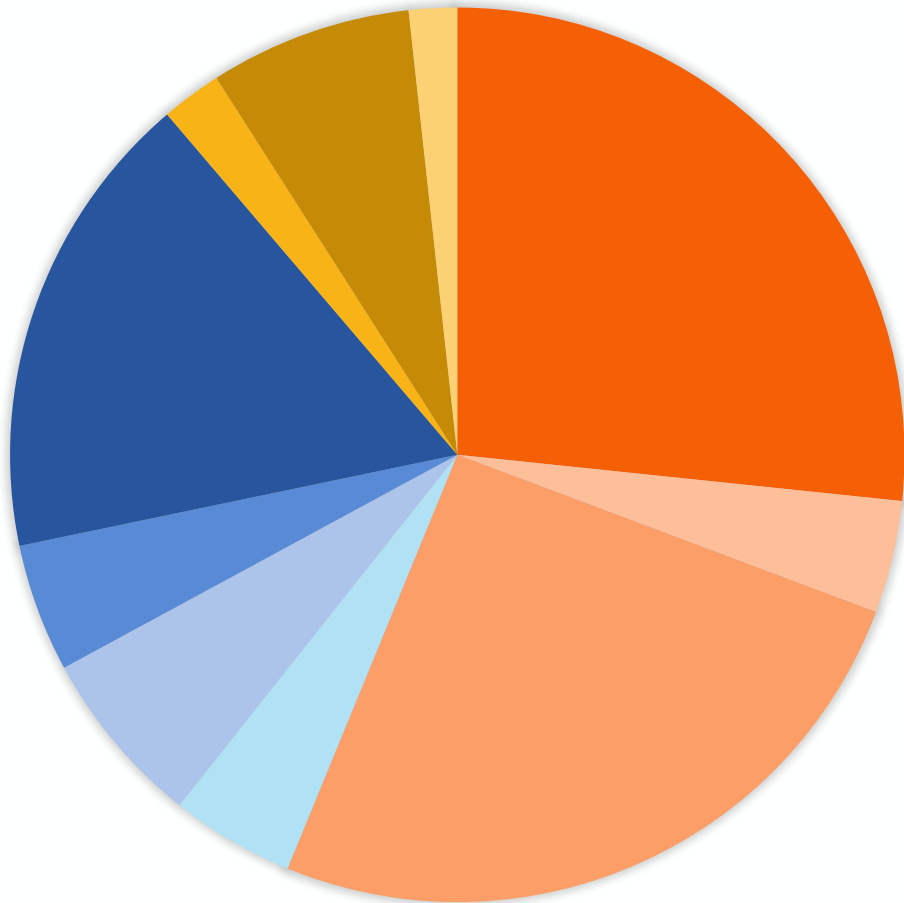


Source: U.S. Energy Information Administration and Illinois Power Agency solar application data, June 2024

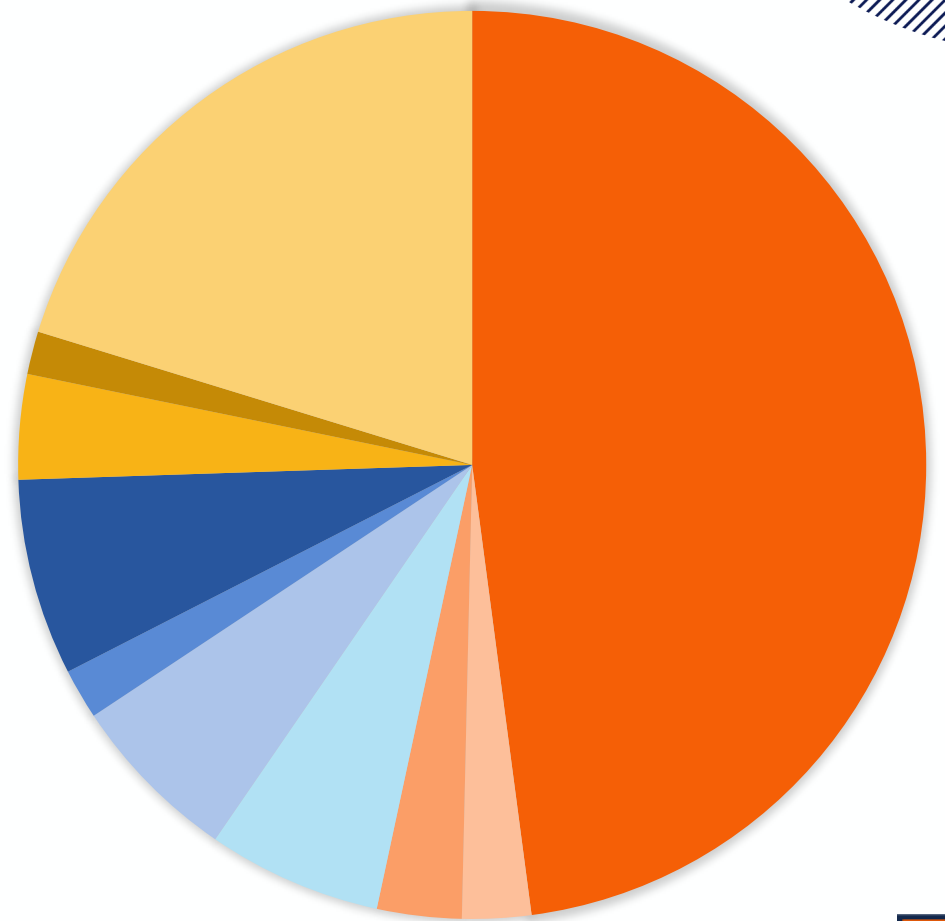


Planned installations vs. existing jobs

Planned/estimated solar 2024-2028

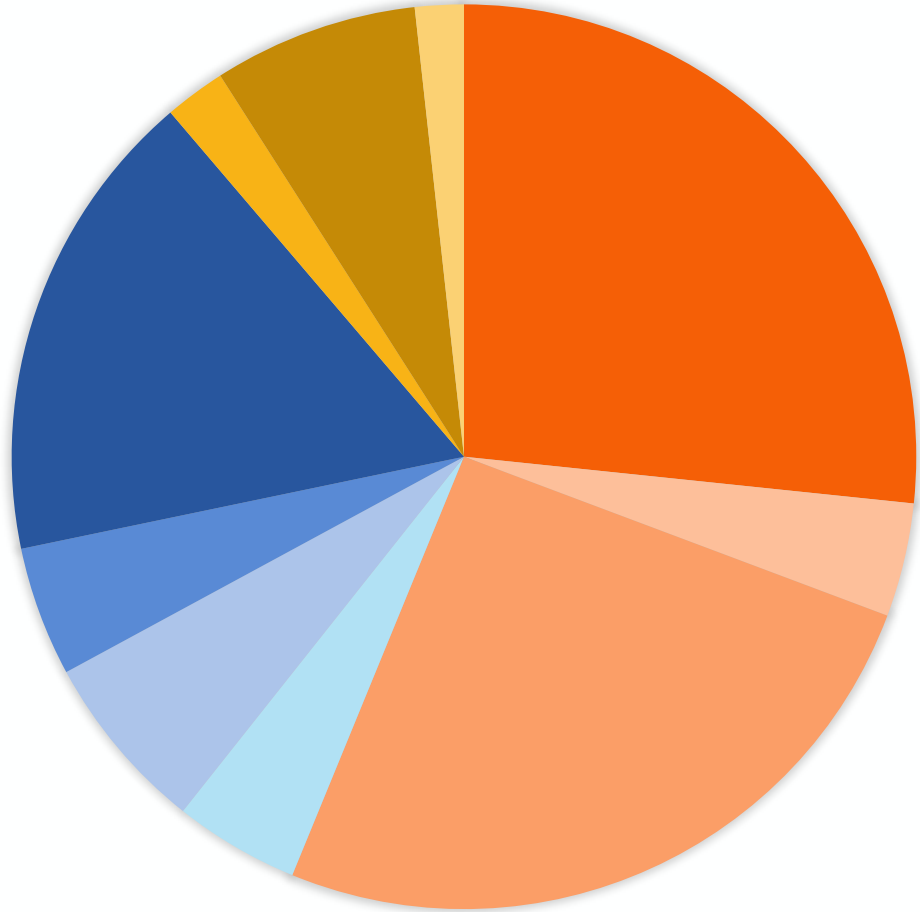


Current solar jobs 2024 (USEER)



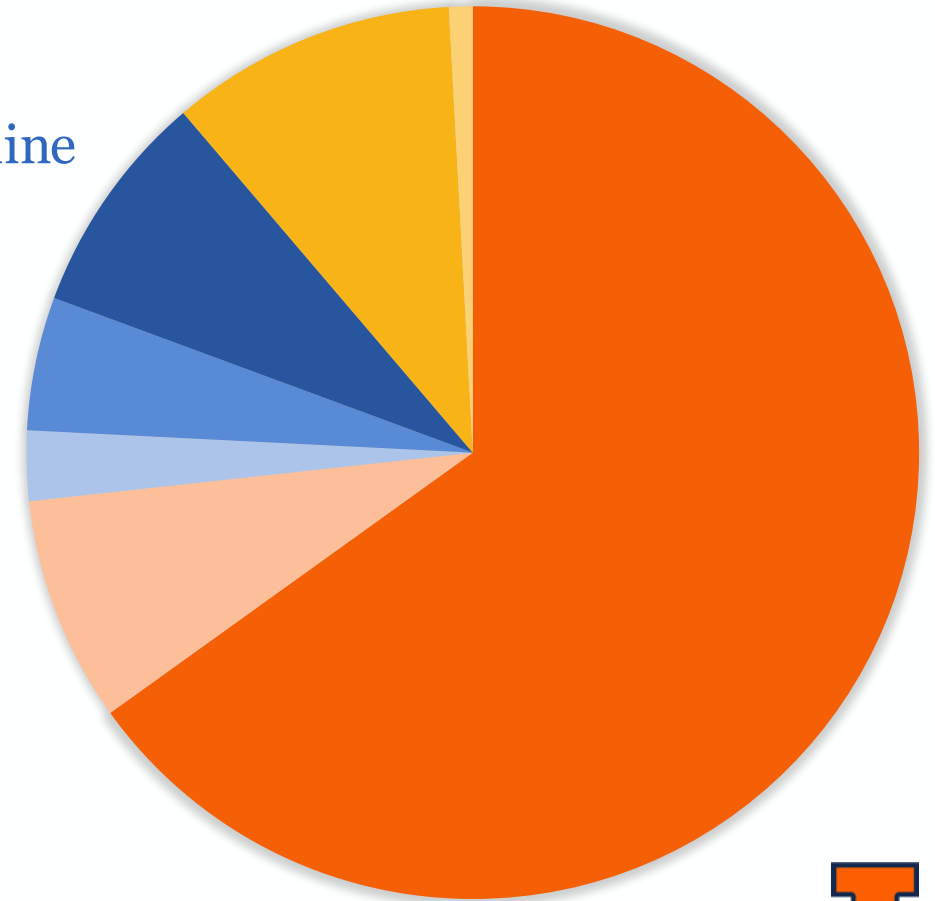
Planned installations vs. funding allocated

Planned/estimated solar 2024-2028



CEJA & FEJA funding allocated

- Northeast
- Northern Stateline
- Northwest
- West Central
- North Central
- East Central
- Central
- Southwest
- Southeast
- South



Meeting Solar Workforce Needs

Economic development regions: Are CEJA training programs aligned with existing jobs and planned solar installations?

Regions where training is more aligned	Regions that may need more workforce investment	Regions where caution is needed
East Central Northern Stateline	Northwest Central Southeast West Central	Northeast Southern Southwest

Matching supply to demand requires close coordination between workforce programs and employers.





Job quality and equity concerns



Will the CEJA workforce programs lead to good, quality jobs?

~14% of solar jobs are unionized nationally (USEER 2024)

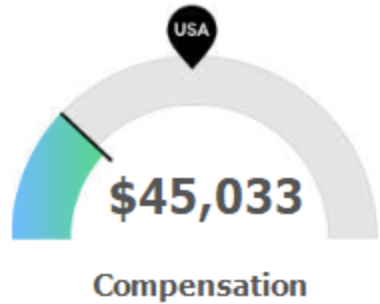
- Higher wages
- Benefits
- Safer working conditions

Prevailing wage requirements, project labor agreements

- Required for projects that receive RECs through Illinois Power Agency
 - Exemption: Residential DG projects
- Required for large solar (over 1MW) that receive IRA tax benefits



Most solar installers in Illinois are **NOT** receiving prevailing wages



Average salary for Illinois Solar PV installers based on 592 job postings from 2022-23 (Lightcast)

~\$21.65 an hour

County	Laborer Prevailing Wage
Cook	\$50.15
Champaign	\$33.82
Peoria	\$32.50
Winnebago	\$41.34



Will the jobs be good quality jobs?

New York Survey of 263 non-union solar workers

- 58% did not receive benefits
- Over 30% were paid per panel installed
- High job turnover
- Significant racial disparities in compensation, benefits, turnover



[Exploring the Conditions of the New York Solar Workforce \(cornell.edu\)](https://www.cornell.edu/ilr/research/exploring-the-conditions-of-the-new-york-solar-workforce/)



Will participant prioritization and outcomes be equitable?

CEJA workforce participation prioritization

- Based on geography (not race, gender, ethnicity, income, or education level)
- Based on barriers to employment (incarceration, language barriers, etc.)

Who will be served and who will be left out?

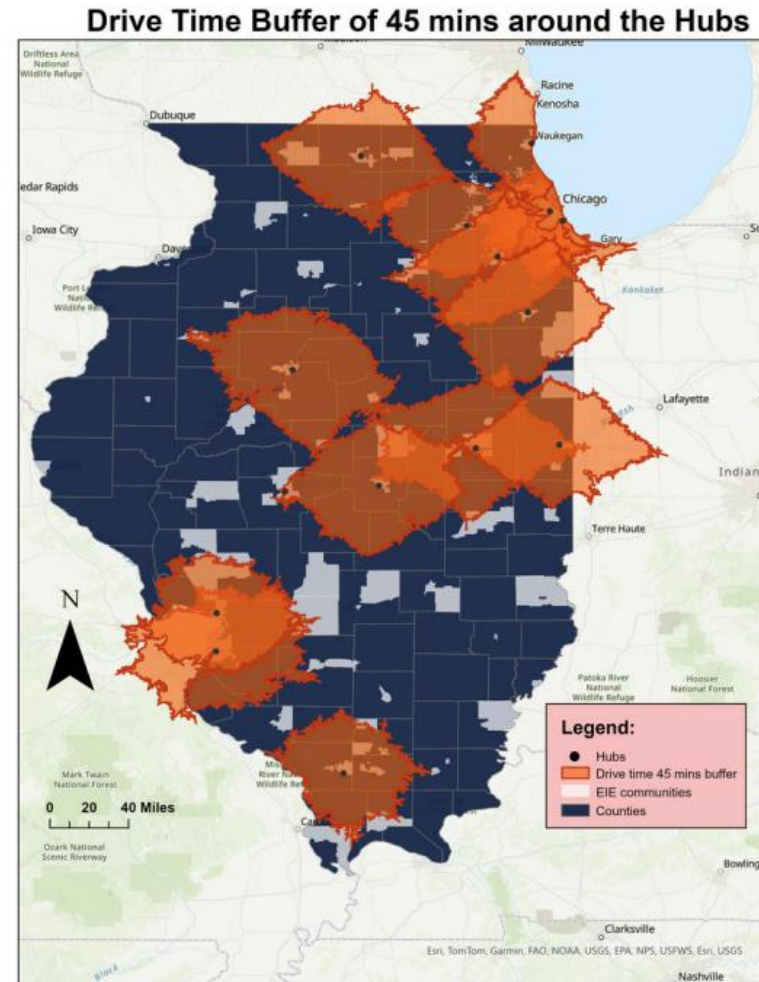
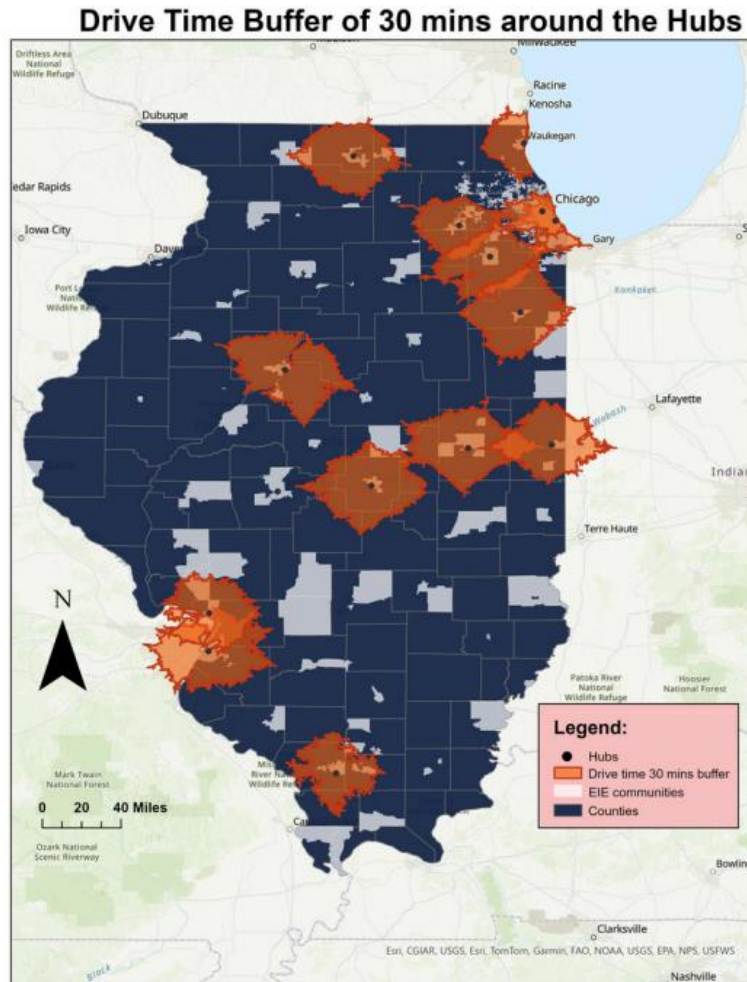
- CEJA program evaluation needed to explore outcomes, demographics, and disparities.

For Illinois communities that are prioritized, will the training locations be accessible?

How many equity investment eligible (EIE) community residents live in or near a CEJA workforce hub city?



How accessible will the hub locations be?





**Conclusions and key
questions to explore
during this conference**



1. Addressing misalignment between training programs and workforce needs

- How can the CEJA programs coordinate with employers to understand and meet workforce needs of their regions?
- How can we meet the workforce needs of regions with high installation needs but little or no workforce investment?
- How can we get program participants to job sites that are far away from home communities?



2. Addressing job quality

- Who will benefit from CEJA job quality provisions? (prevailing wage, project labor agreements).
- What will job quality look like for jobs that aren't subject to these provisions?
- Evaluating the CEJA programs: Will there be racial, geographic, or gender disparities in job quality outcomes?



3. Addressing access and equity

- Who will participate in the CEJA workforce programs, and who will be left out, considering proximity to training locations?
- Will geographic prioritization lead to equitable outcomes?
- Will jobs be available nearby or will participants have to travel far to get to job sites?
- How will the programs address transportation barriers to training and job sites?



4. Building capacity for program implementation and delivery

- How can we fill gaps and build capacity in regions that still do not have funded workforce programs?
- How can DCEO build its capacity to administer programs effectively and efficiently?






Climate Jobs Institute Research & Resources



Check out our website for research and resources



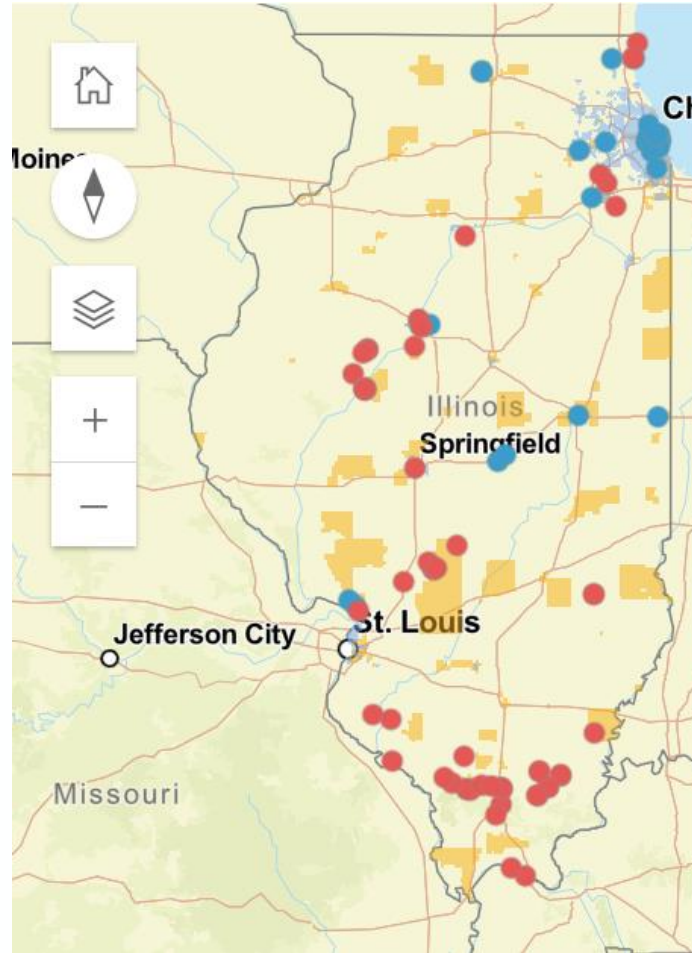
POLICY BRIEF

CEJA HUBS & COMMUNITY PRIORITIZATION

A geographic exploration of community inclusion and exclusion

September 2024

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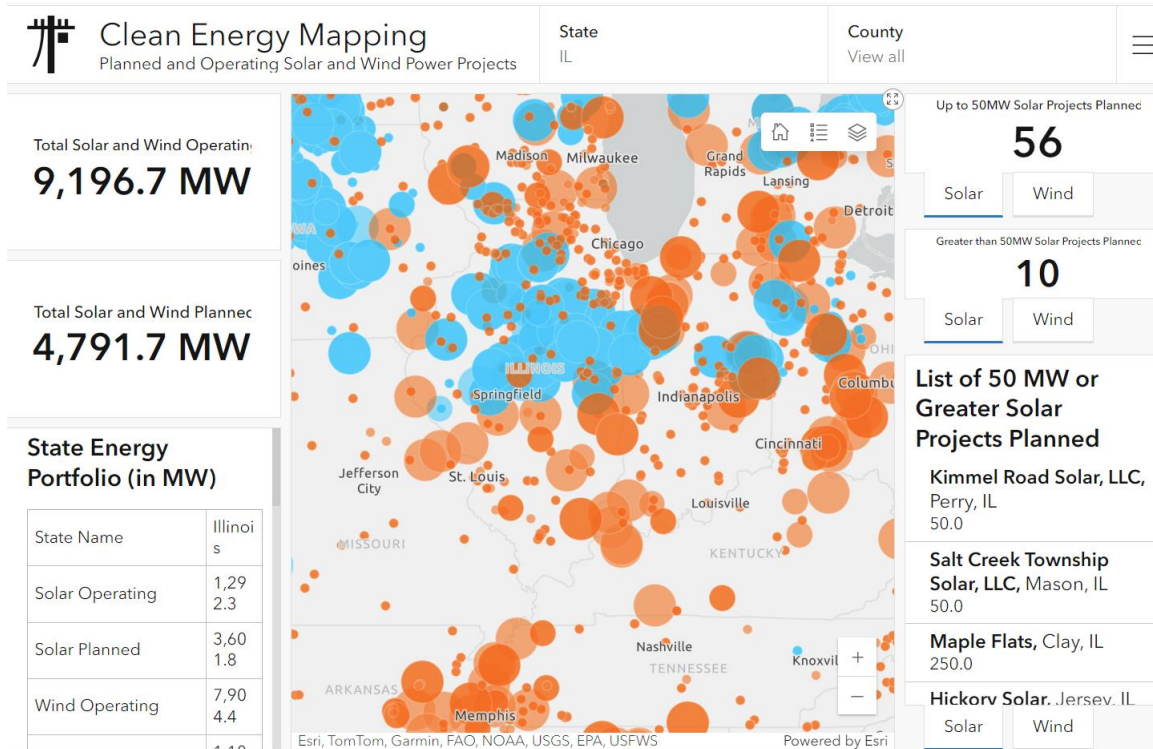
CEJA Map: A tool for identifying needs and assets, making connections

ler.illinois.edu/climate-jobs-institute



Coming soon

Clean Energy Interactive Dashboard

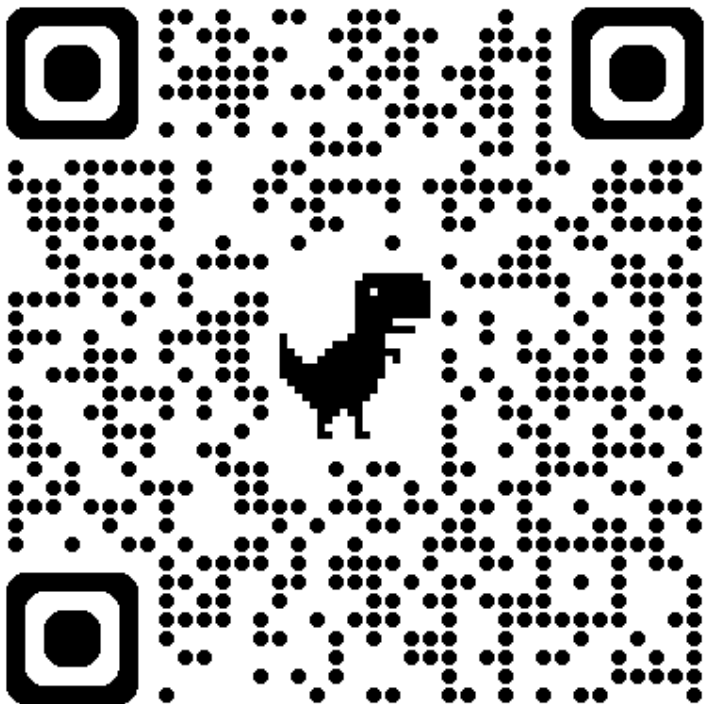


- Clean energy data packets for economic development regions
- Policy briefs: Aligning CEJA programs with workforce needs.



Ongoing CJI Research Projects

Union labor clean energy
survey and focus groups



Building electrification:
Workforce and community
impacts, needs



Sign up to receive CJI research updates



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Questions?

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