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States Alliance

Collaboration between Community-Based Organizations and State Energy Agencies: Findings and Lessons from the Solar with Justice Project

September 27, 2024

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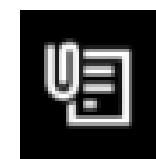
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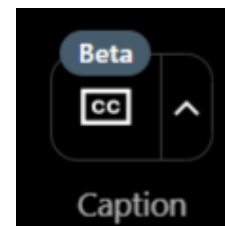
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Celebrating 20 Years of State Leadership



The Clean Energy States Alliance (CESA) is a national, nonprofit coalition of public agencies and organizations working together to advance clean energy.

CESA members—mostly state agencies—include many of the most innovative, successful, and influential public funders of clean energy initiatives in the country.

CleanEnergy States Alliance

www.cesa.org



GOVERNOR'S
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Maryland
Energy
Administration



NYSERDA

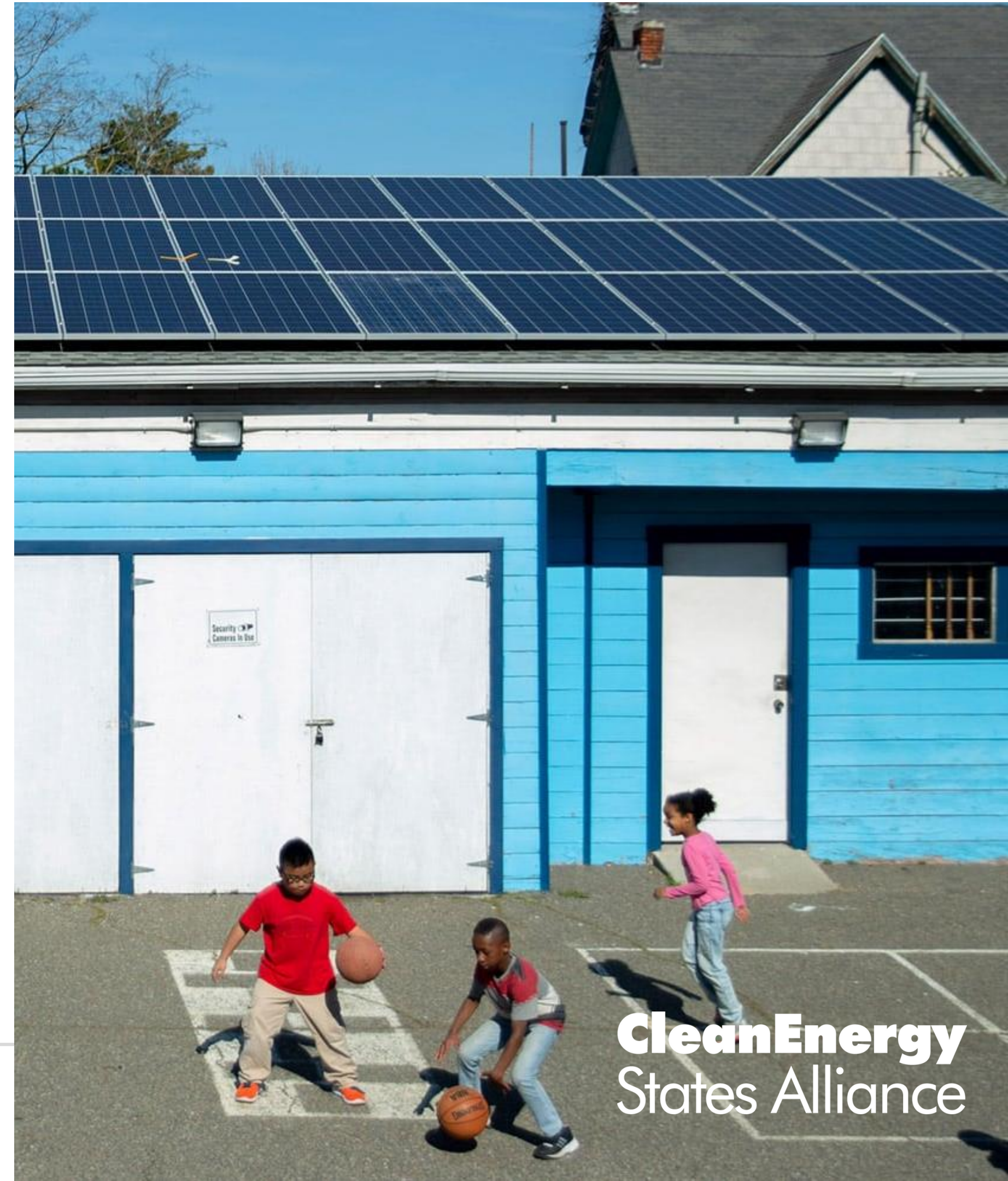


Solar with Justice: Connecting States and Communities

Identifying models for how state energy agencies and community-based organizations can collaborate more effectively to expand access to solar.



www.cesa.org/projects/solar-with-justice



CleanEnergy
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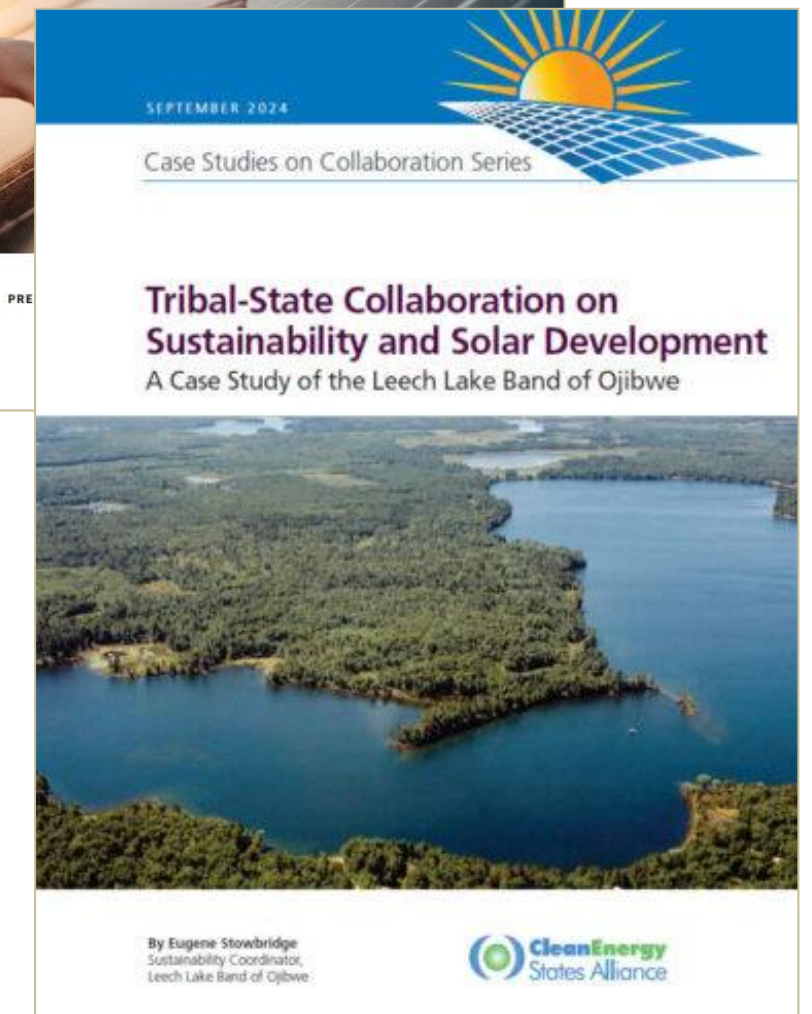
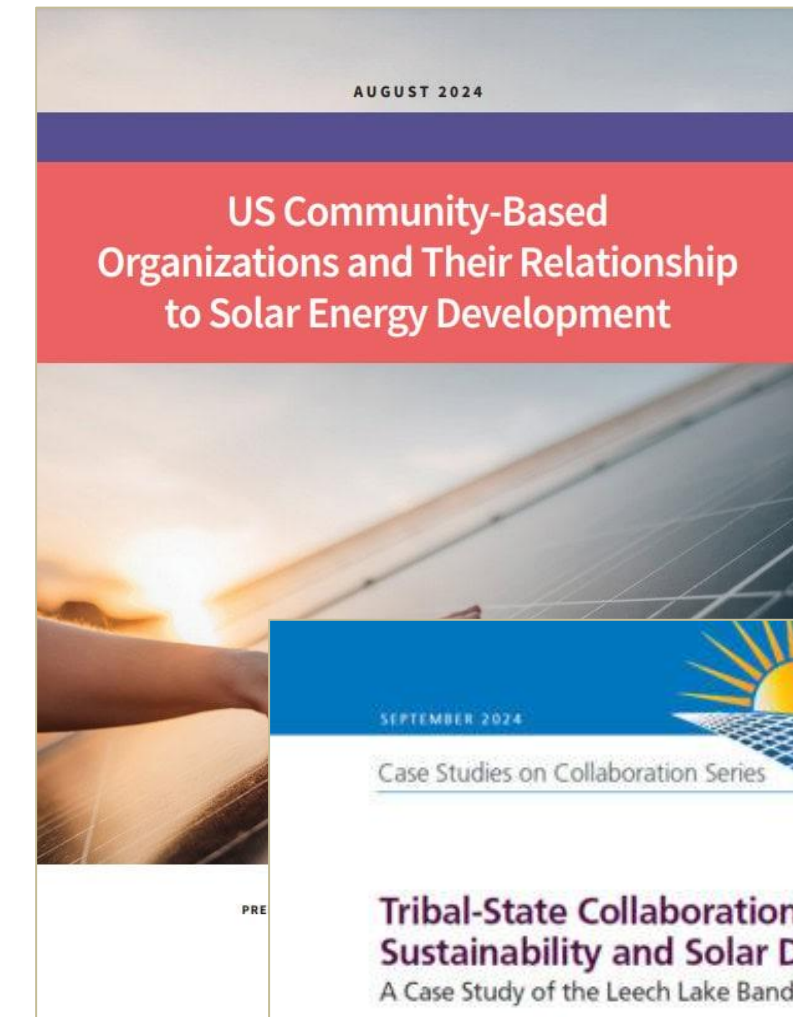
Solar with Justice Resources

The Solar with Justice project has produced reports, case studies, videos, and other resources, including:

- A **series of reports** based on a national survey of community-based organizations (CBOs)
- Six **case studies**
- Five **video interviews** with experts
- A public national **database of CBOs**
- Additional resources

Learn more and view these resources at:

www.cesa.org/projects/solar-with-justice/resources-overview



Webinar Speakers



Warren Leon
Clean Energy States
Alliance



Janelle Knox-Hayes
MIT



Bayo Ware
Energy Trust of
Oregon



Recommendations for Solar with Justice

Warren Leon

September 27, 2024

Find the recommendations in this paper:

<https://www.cesa.org/resource-library/resource/recommendations-for-solar-with-justice-connecting-states-and-communities/>



For the past three years, the Solar with Justice Project, managed by the Clean Energy States Alliance (CESA), has helped state energy agencies (SEAs) and community-based organizations (CBOs) work collaboratively to advance the equitable development of solar to benefit underserved communities. The project has produced numerous reports, case studies, and video interviews, all of which are available on a dedicated webpage on the CESA website. This paper summarizes the project's main recommendations for SEAs and CBOs interested in expanding solar in low- and moderate-income (LMI) and disadvantaged communities.

Starting Premises

The Solar with Justice project started with three premises that shaped its research, analysis, and publications:

1. For solar energy to be an equitable technology that serves all Americans and retains strong public support, it is essential to overcome the considerable barriers that make it difficult for LMI and other disadvantaged households to share equally in the financial benefits of solar development.



ABOUT THIS PAPER
This paper, prepared by the Clean Energy States Alliance (CESA), presents recommendations to help state energy agencies design and implement equitable stakeholder engagement strategies for their solar programs. It was produced for the Solar with Justice project. To learn more about that project, see the CESA website at: www.cesa.org/projects/solar-with-justice.

AUTHOR
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ACKNOWLEDGMENTS
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The Solar with Justice Project

- Funded in great part through a multi-year award from the U.S. Department of Energy
 - 2021-September 2024
 - Additional funding from the Nathan Cummings Foundation and from participating organizations
- Partway through the project, the federal Inflation Reduction Act (IRA) and the Justice40 transformed prospects for low-income solar

Project Team

- Clean Energy States Alliance
- MIT Department of Urban Studies and Planning
- Energy Trust of Oregon
- Partnership for Southern Equity
- Vote Solar
- Kim Wolske of the University of Chicago

Advisory Committee

- Sebastian David Baez, Shauna Beland, Valerie Boucard, Elise Brown Ersoy, Staci Hartwell, Erica Holloman, Sharon Lewis, Brandy Toft

Starting Premises

1. Essential to overcome barriers to solar development for LMI and other disadvantaged households
2. Important to involve trusted community-based organizations (CBOs)
3. State agencies play a crucial role, but they should collaborate with CBOs

Recommendations

1. Recognize capacity constraints
2. Understand the CBO landscape
3. Provide multiple forms of assistance to CBOs
4. Treat community outreach and engagement as an ongoing process
5. Think beyond income levels to advance solar with justice
6. Make CBOs allies for protecting solar consumers
7. Remember that one size does not fit all

US Community-Based Organizations and Their Relationship to Solar Energy Development

Prof Janelle Knox-Hayes

Department of Urban Studies and Planning

September 27, 2024

Survey design



Survey questions were designed based on the learnings of 40 interviews with various communities-based organizations (CBOs) working across the 50 US states, a workshop, and focus group discussions of CBOs and state energy representatives.



The nested survey design aims to capture the diversity—and breadth—of organizations focused on solar work in LMI communities and the range of challenges they face in their work.



The survey was prepared in Qualtrics and disseminated using organizations' emails.



For improving the efficiency and accessibility, the survey automatically calibrates the ordering of questions—and which questions to ask—depending on the responses. For example, if an organization does not work on solar, then survey leaves out the questions that focus on solar implementation and other technical aspects of solar work.

Overall Structure of Parts

1. Solar Work

2 Opportunities and Challenges

3. Context and Motivations for Solar-Related Work

4. Solar Knowledge

5. General Organizational Focus

6. Demographics





Summary Statistics

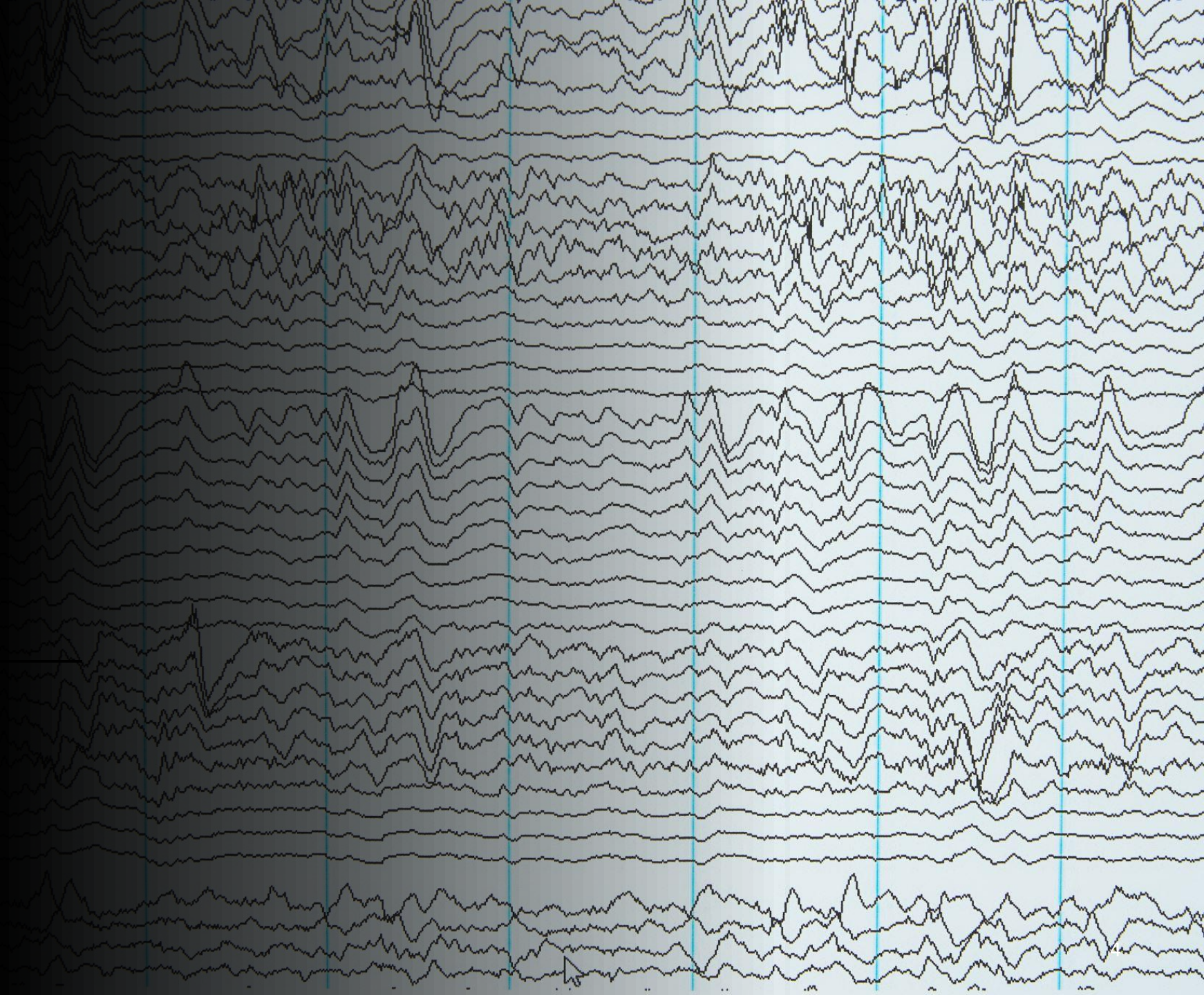


Figure 1: Overview of CBOs Across Regions

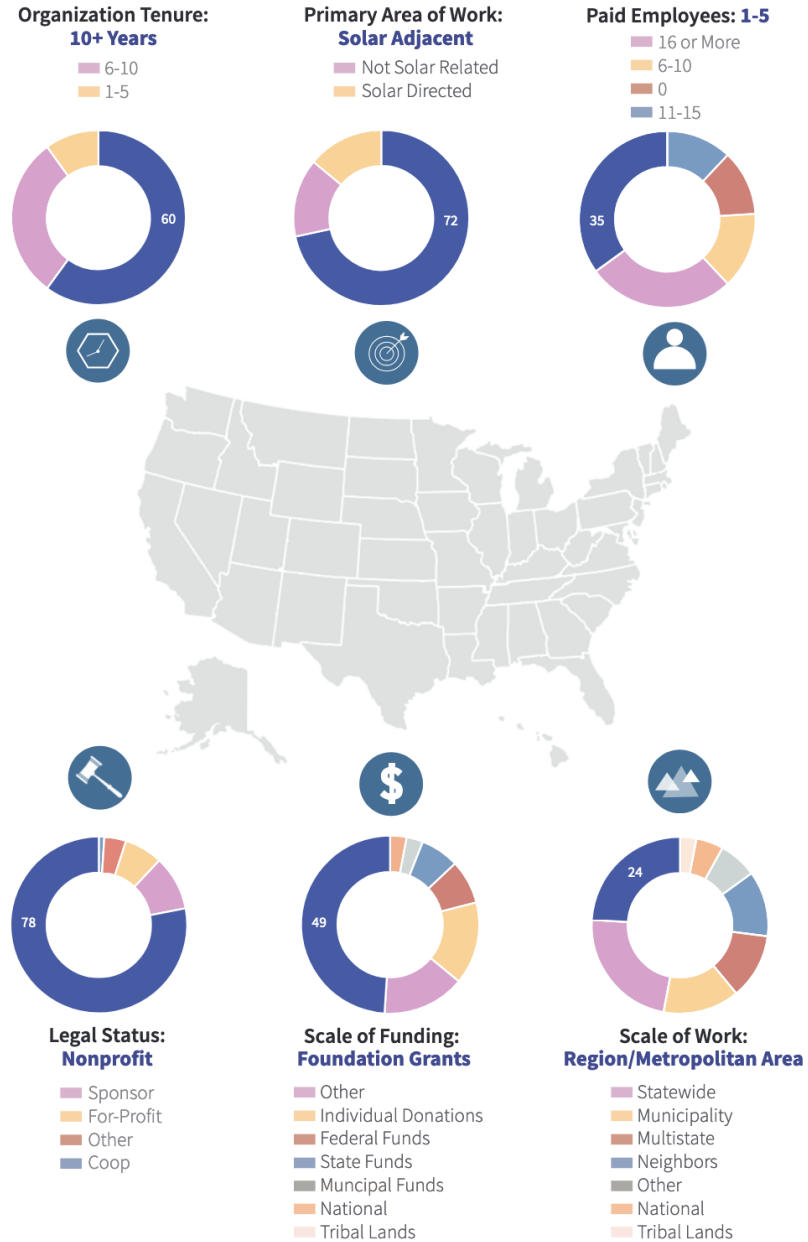


Figure 10: Regional Analysis—Midwest

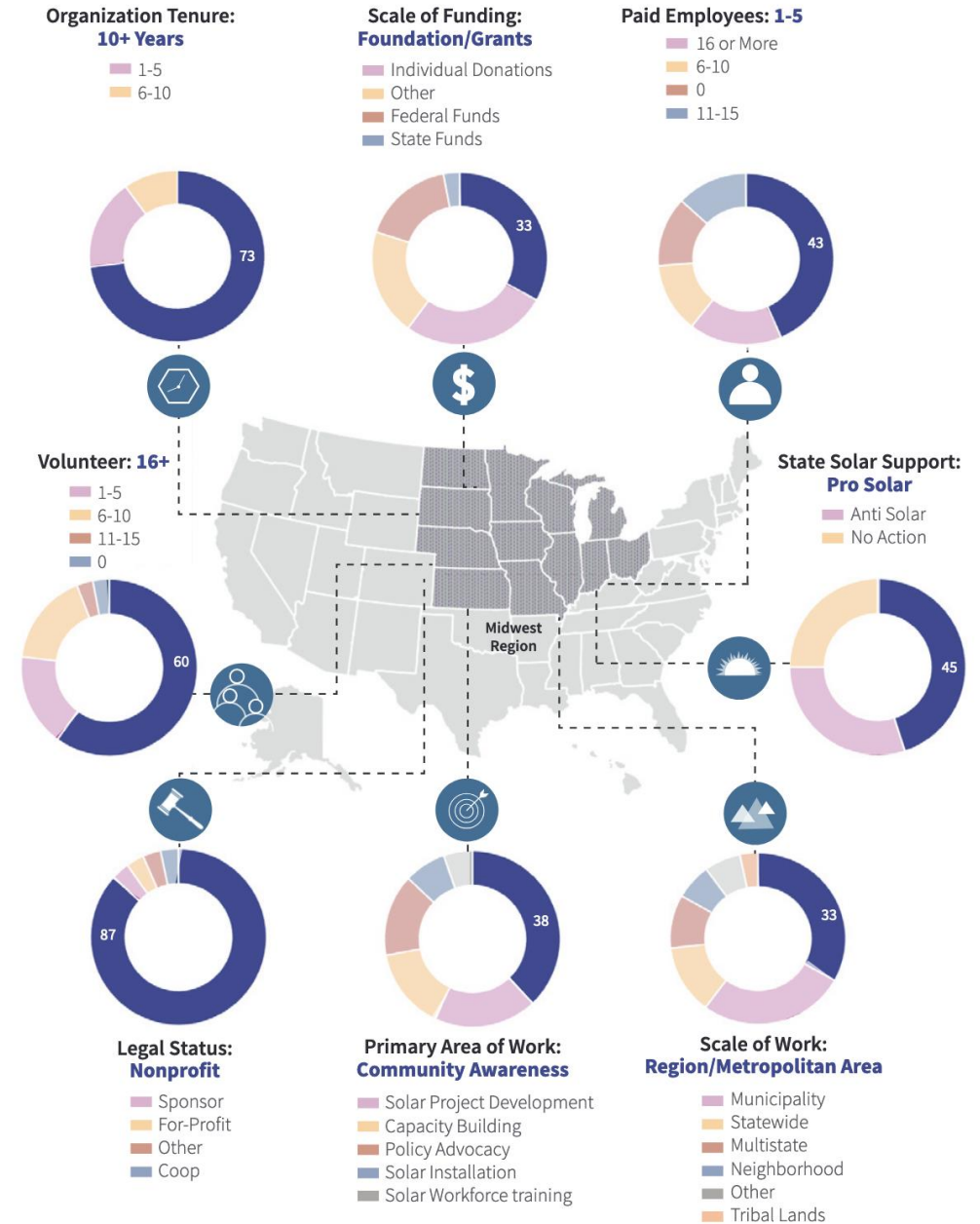


Figure 11: Regional Analysis—Northeast

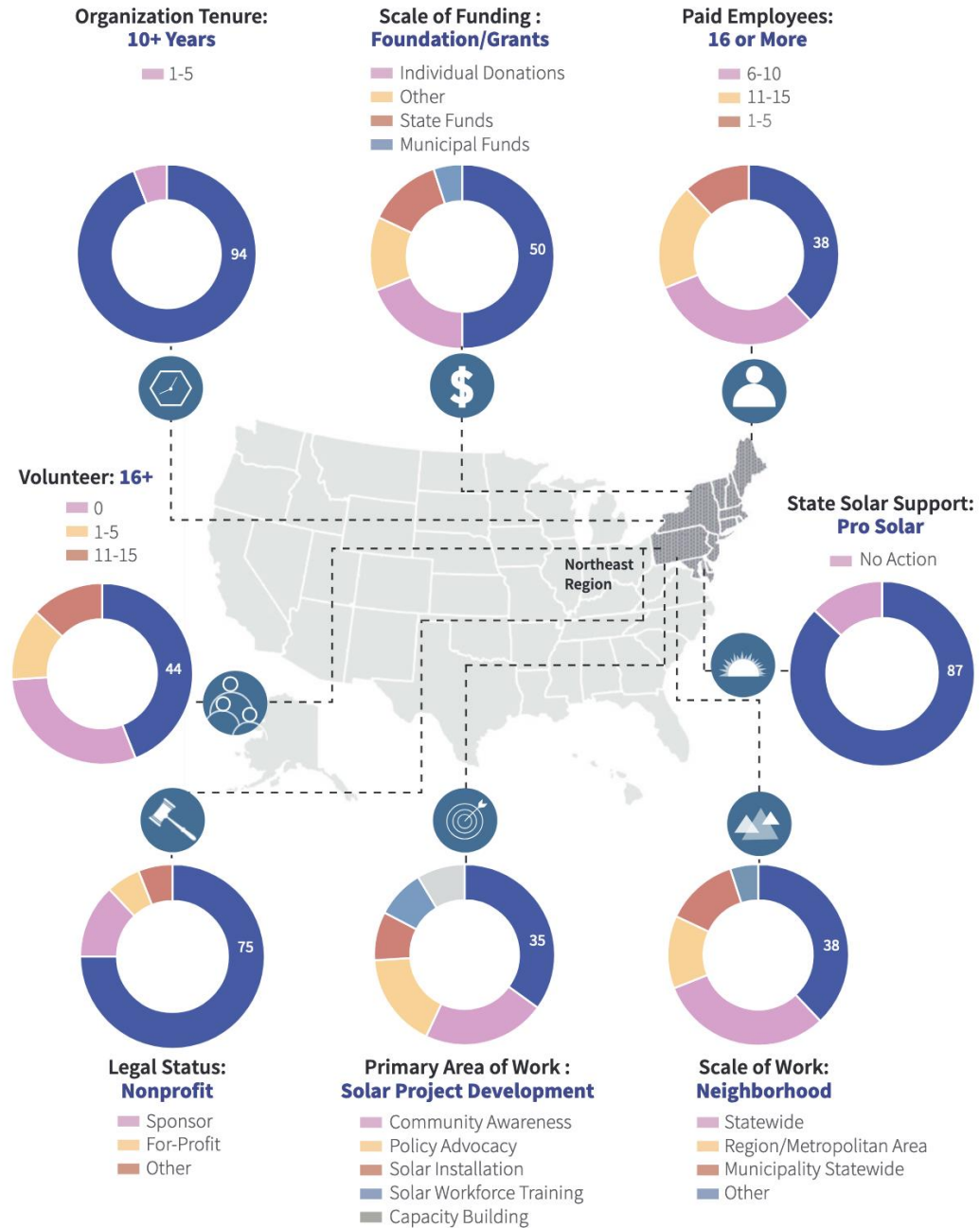


Figure 12: Regional Analysis—Southeast

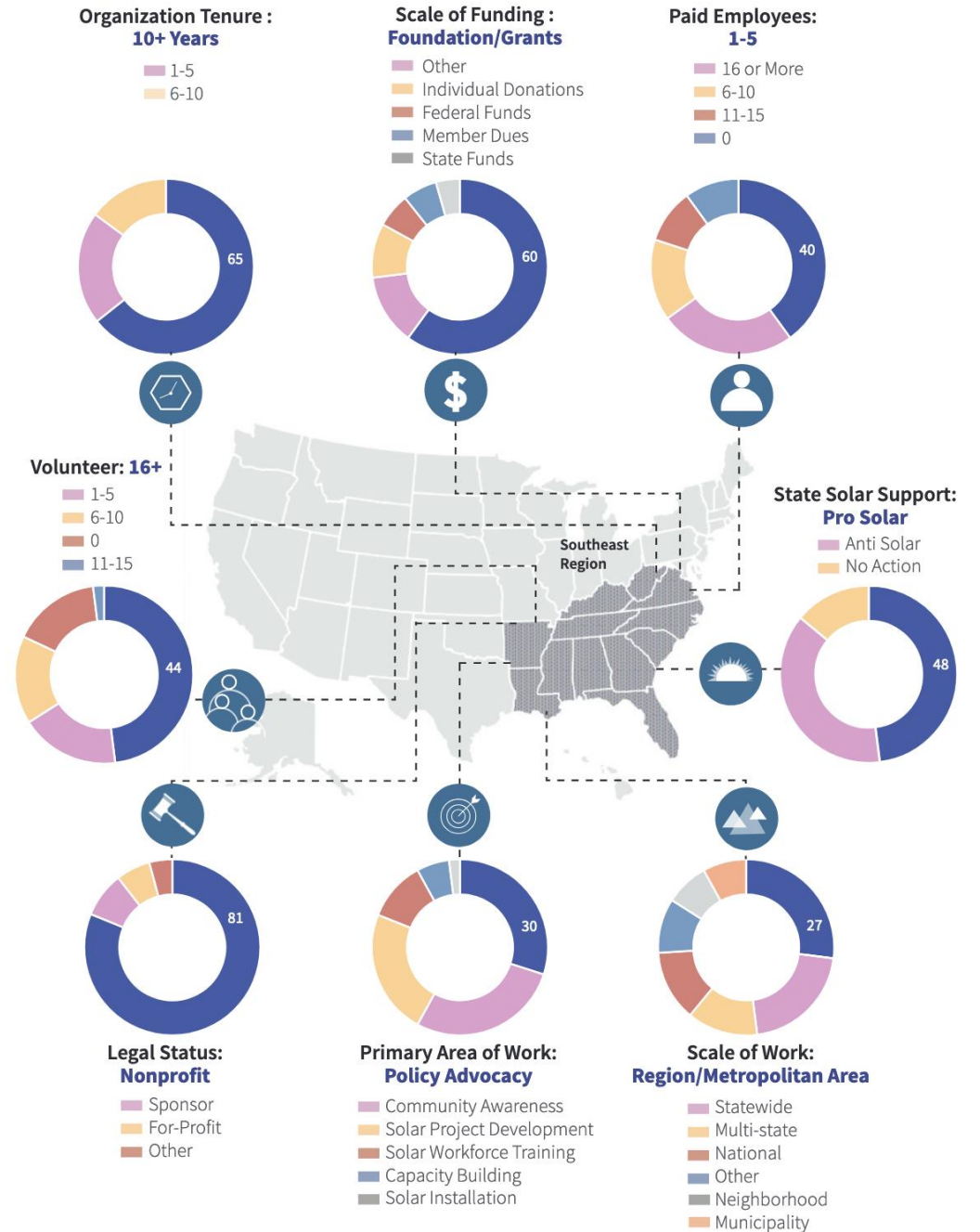


Figure 13: Regional Analysis—Southwest

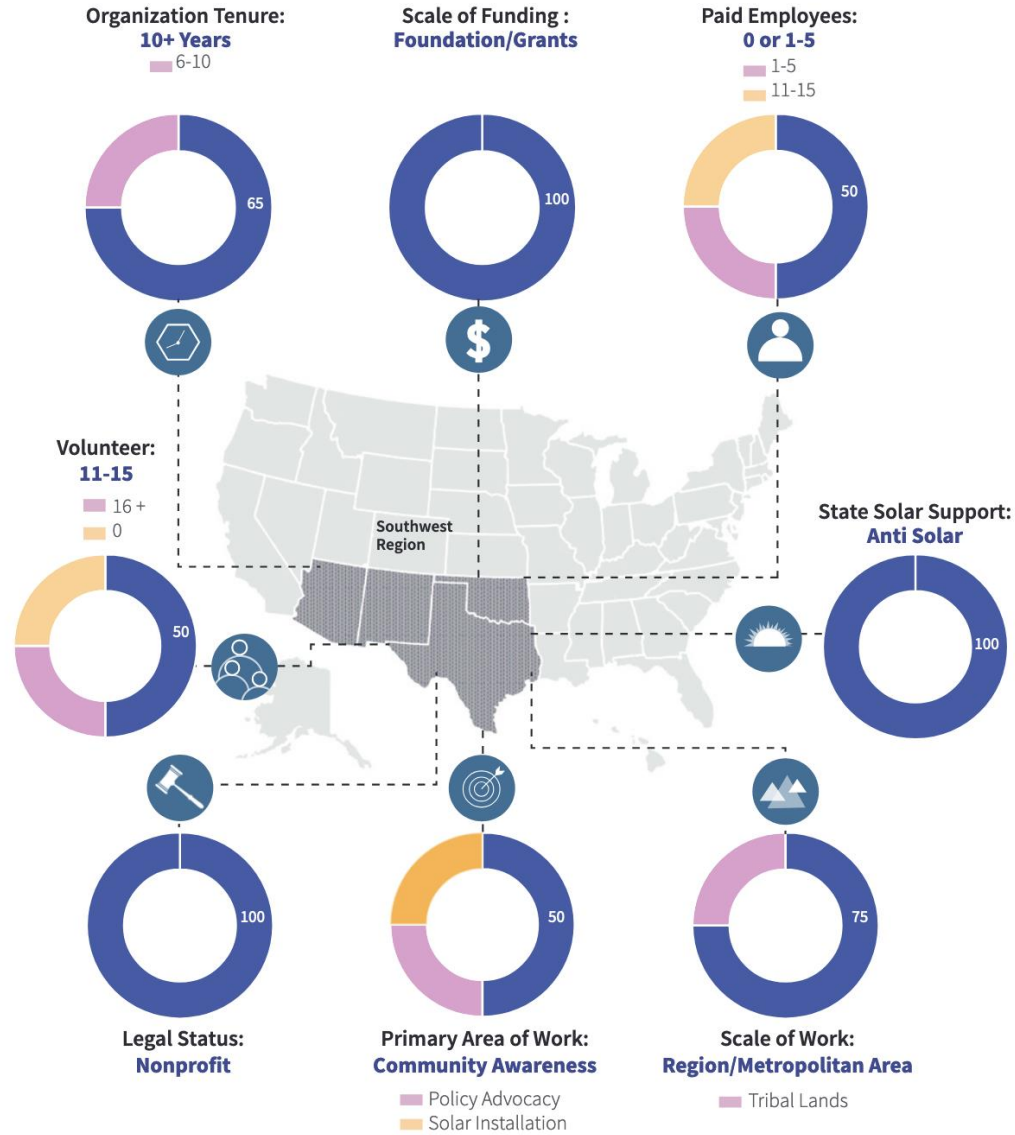
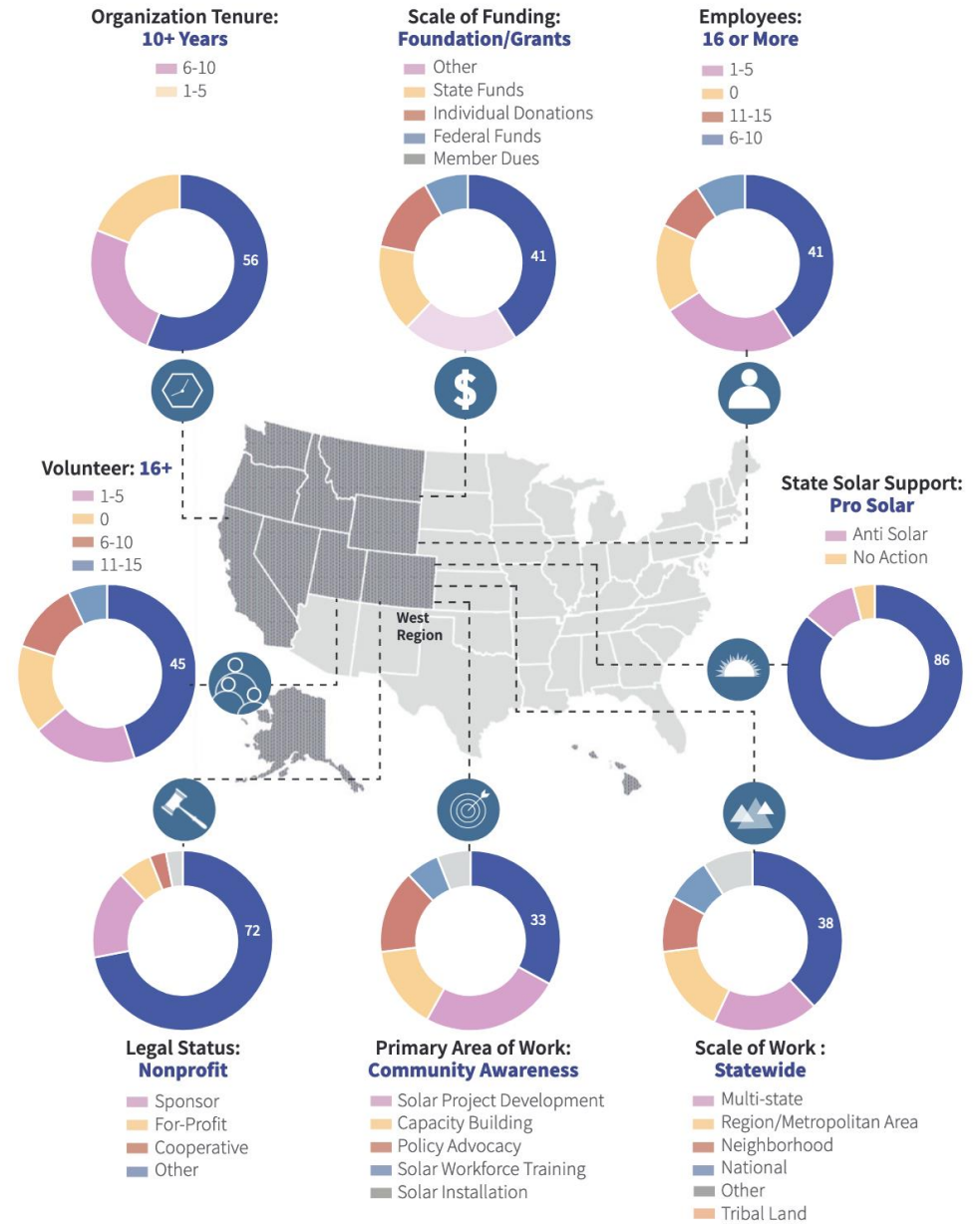


Figure 14: Regional Analysis—West





Factor Analysis

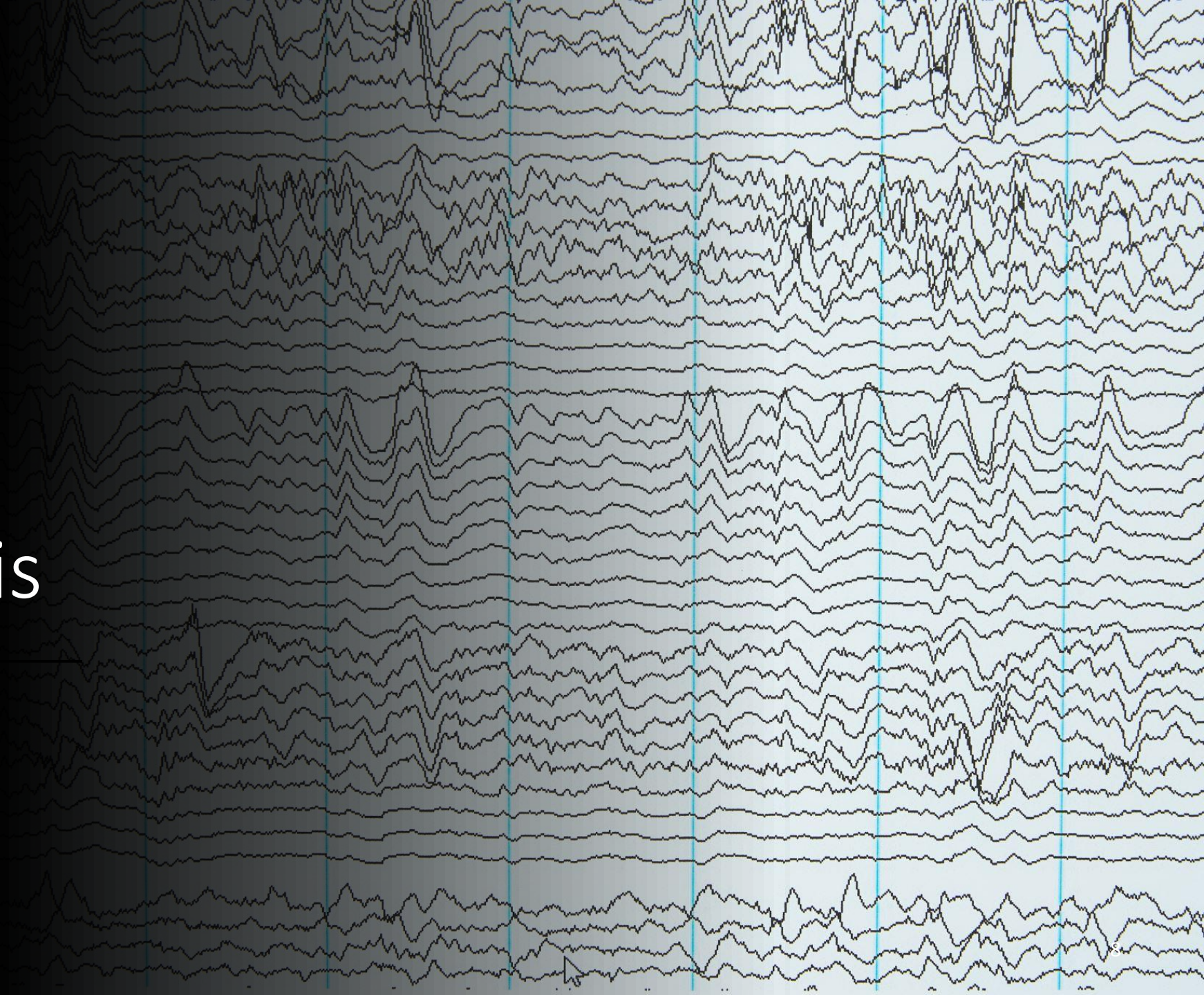


Table 1: Factor Analysis

Factor	Variables Used (Interim Co-Variance)	Definition	EigenValue	Alpha
Energy Independence Awareness	<ul style="list-style-type: none"> + Access to Resilience Hub (0.60) + Familiarity with Solar Tax Credits (0.44) + Familiarity with Low-Income Programs (0.44) + Familiarity with Energy Independence (0.44) + Familiarity with Energy Burden (0.41) 	Shows the degree to which an organization is familiar with and focused on energy independence.	3.1	0.84
Green Finance Awareness	<ul style="list-style-type: none"> + Familiarity with Resilience Hub + Familiarity with Electric Grid (0.82) + Familiarity with PPA (0.77) + Familiarity with Green Banks (0.79) 	Shows the degree to which organizations are familiar with aspects of green finance.	2.3	0.84
Degree of CBO Involvement in Communities Served	<ul style="list-style-type: none"> + Degree Organization Learns From Communities Served (0.73) + Degree Organization Communicates to Communities Served (0.76) + Degree Organization Builds Trust in Communities Served (0.74) 	Shows the degree to which the organization is involved in the community.	2.36	0.86
Degree of Community Solar Awareness	<ul style="list-style-type: none"> + Degree Community Understands Benefits of Solar (0.44) + Degree Community is Excited About Solar (0.40) + Degree Community Have Seen Solar (0.49) + Degree Community is Aware of Solar Programs (0.49) 	Shows the degree to which the communities served are aware of and understand solar benefits	2.38	0.77
Communication for Solar Awareness	<ul style="list-style-type: none"> + Organization has spent time building trust w/ served community (0.34) + Organization has established ways of communication educational materials (0.31) + Funding opportunities align with mission of CBO (0.46) + Organization frequently canvasses community (0.44) + Communities aware of residential solar programs (0.52) + Organization frequently uses paid advertisements (0.47) 	Shows the degree to which the organization focuses on building trust, communication strategies, and capacity to raise awareness for residential solar programs.	1.83	0.48

Factor	Variables Used (Interim Co-Variance)	Definition	EigenValue	Alpha
Motivation: Community Energy Sovereignty	<ul style="list-style-type: none"> + Motivation: Community Empowerment (0.35) + Motivation: Economic Opportunity (0.43) + Motivation: Energy and Environmental Justice(0.44) 	Shows the degree to which an organization is motivated by community empowerment, economic opportunity and environmental justice	1.86	0.69
Workforce Installation Scale	<ul style="list-style-type: none"> + Level of Solar Workforce Training (0.74) + Primary Work Training and Installation (0.75) + Level of Solar Project Development (0.74) + Level of Solar Installation (0.73) 	Shows the degree to which an organization is focused on workforce training and solar installation in their communities.	2.45	0.79
Solar Work Depth	<ul style="list-style-type: none"> + Length of Solar Related Work (0.38) + Rooftop Solar Installations Completed, non-residential (0.28) + Rooftop Solar Installations Completed, residential (0.27) + Solar Work Aspirations (0.36) + Depth of Solar Project Development Work (0.31) + Extent of Solar Work (0.26) 	Shows the degree to which an organization is focused on solar installation projects specifically.	2.6	0.73

Figure 15: Energy Independence Awareness

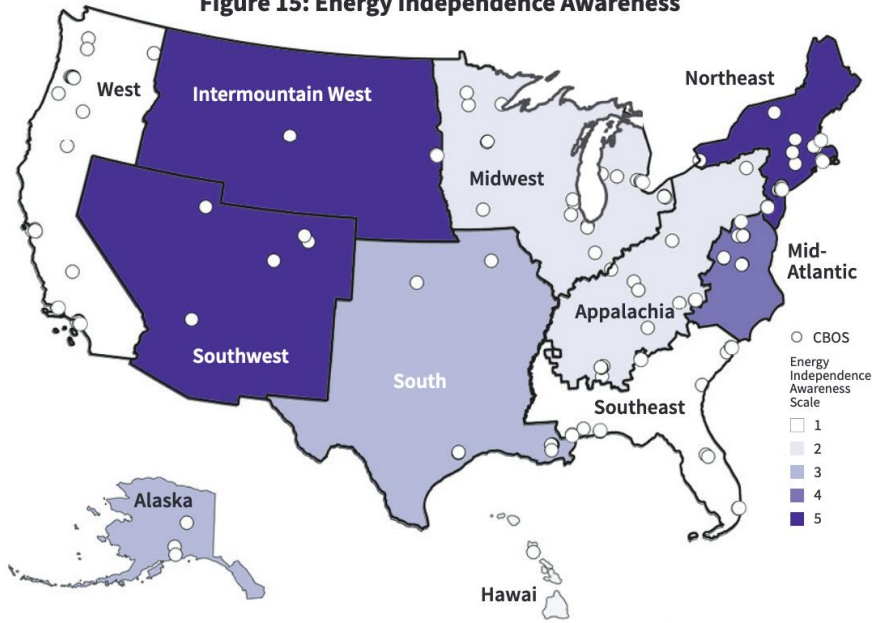


Figure 16: Green Finance Awareness

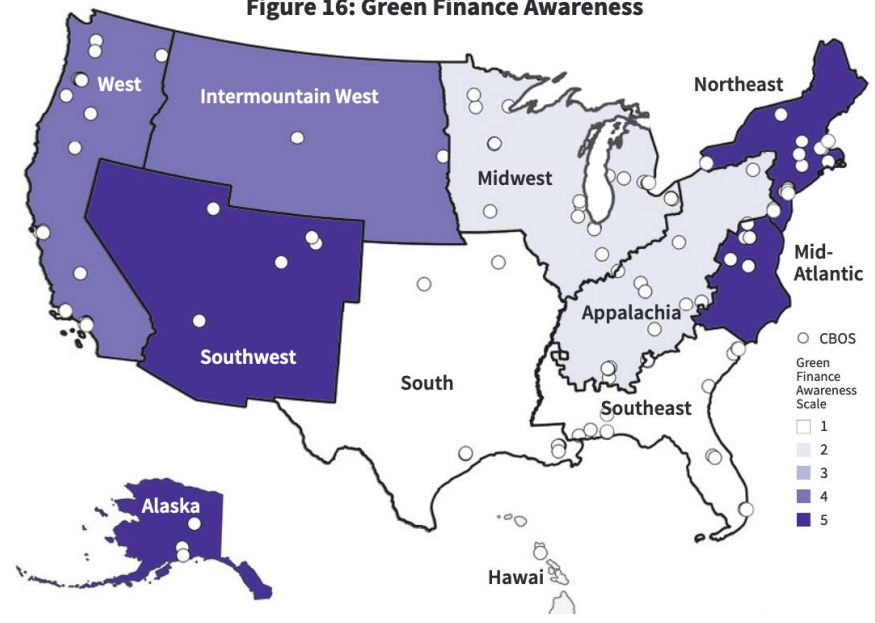


Figure 17: Communications for Solar Awareness

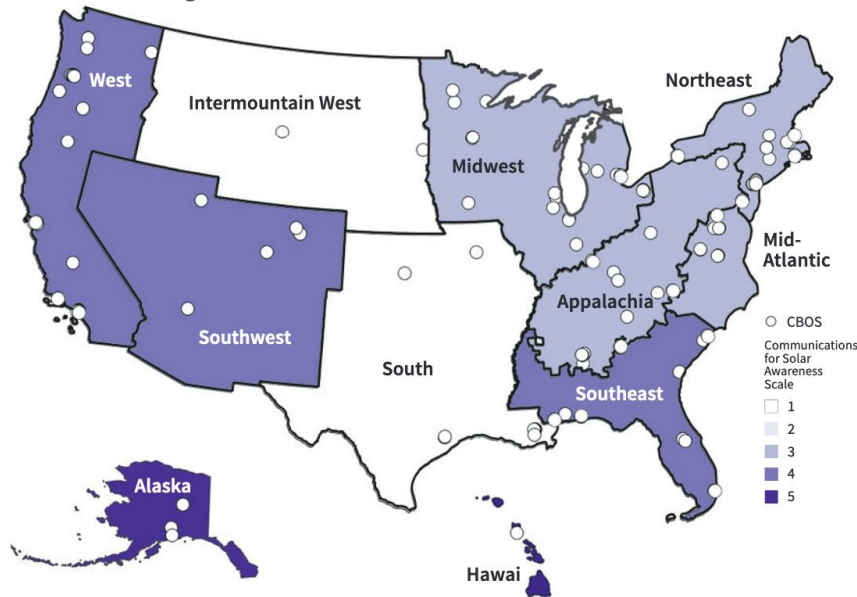


Figure 18: Community Solar Awareness

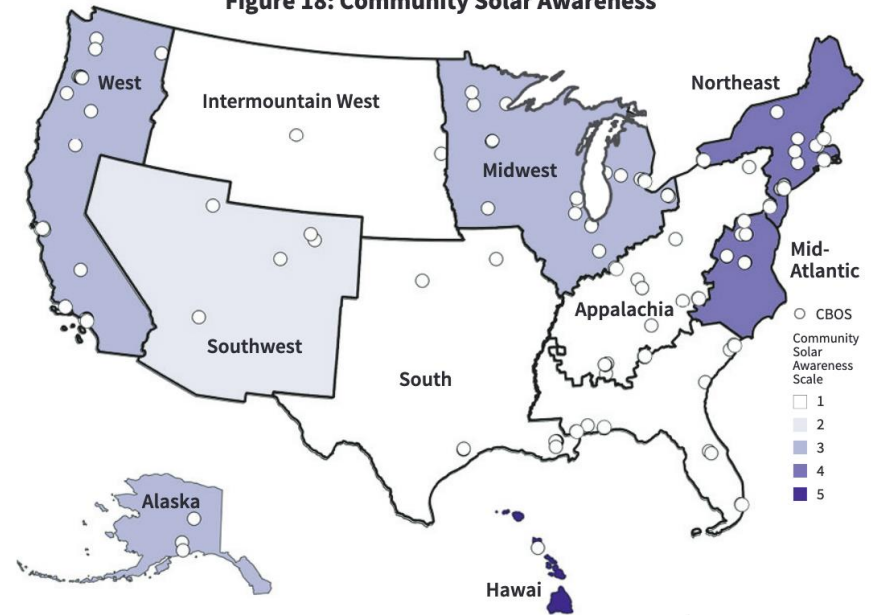


Figure 19: Motivation—Community Energy Sovereignty

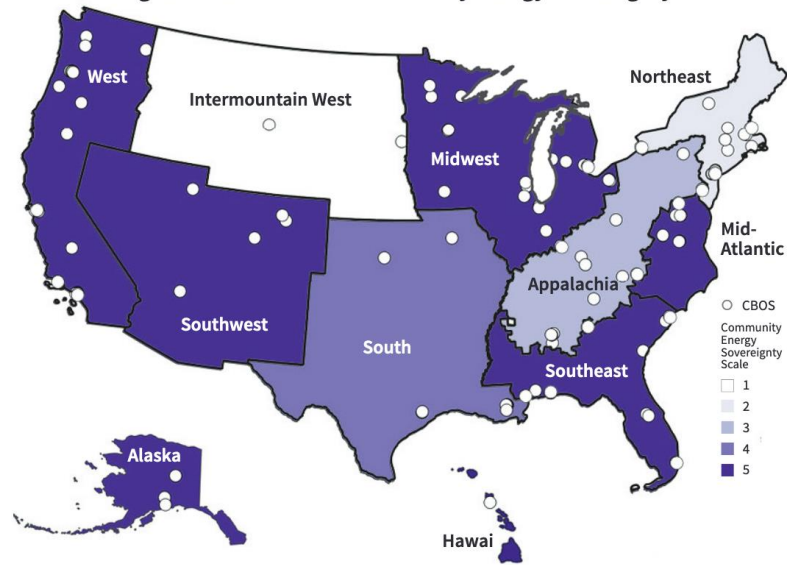


Figure 20: Degree of CBO Involvement in Communities Served

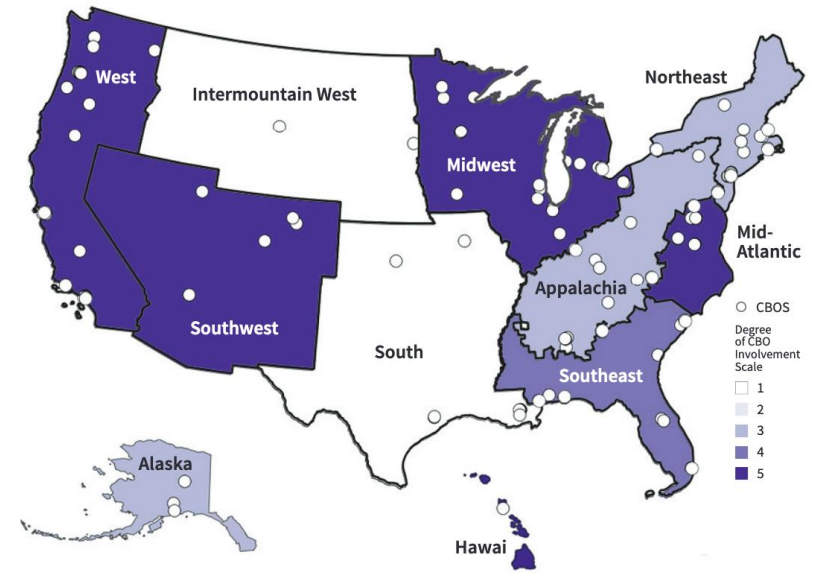


Figure 21: Workforce Installation Scale

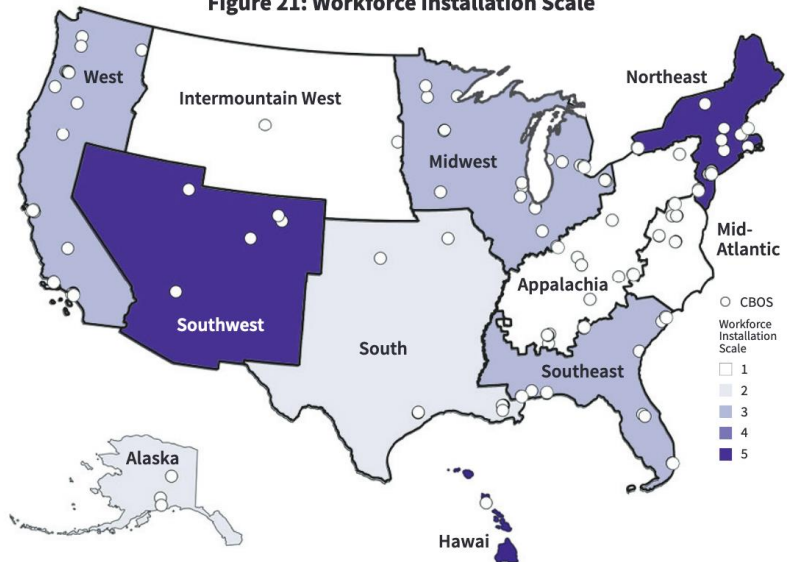
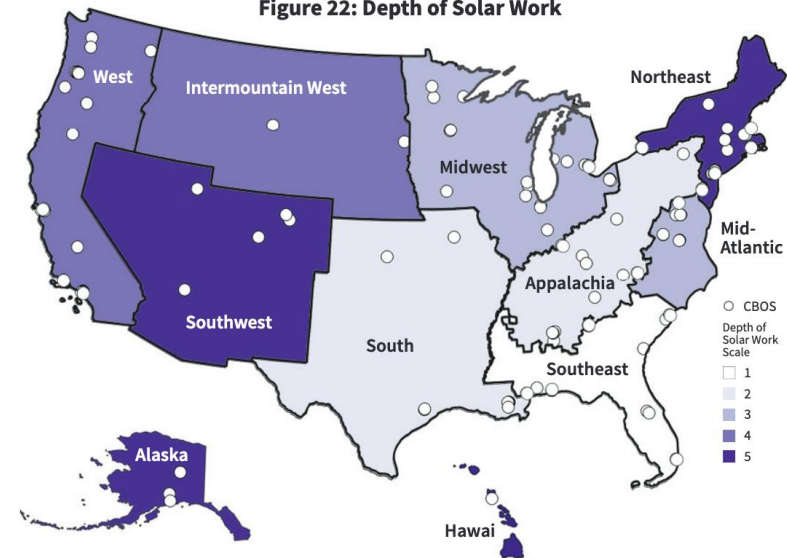


Figure 22: Depth of Solar Work





Statistical Analysis

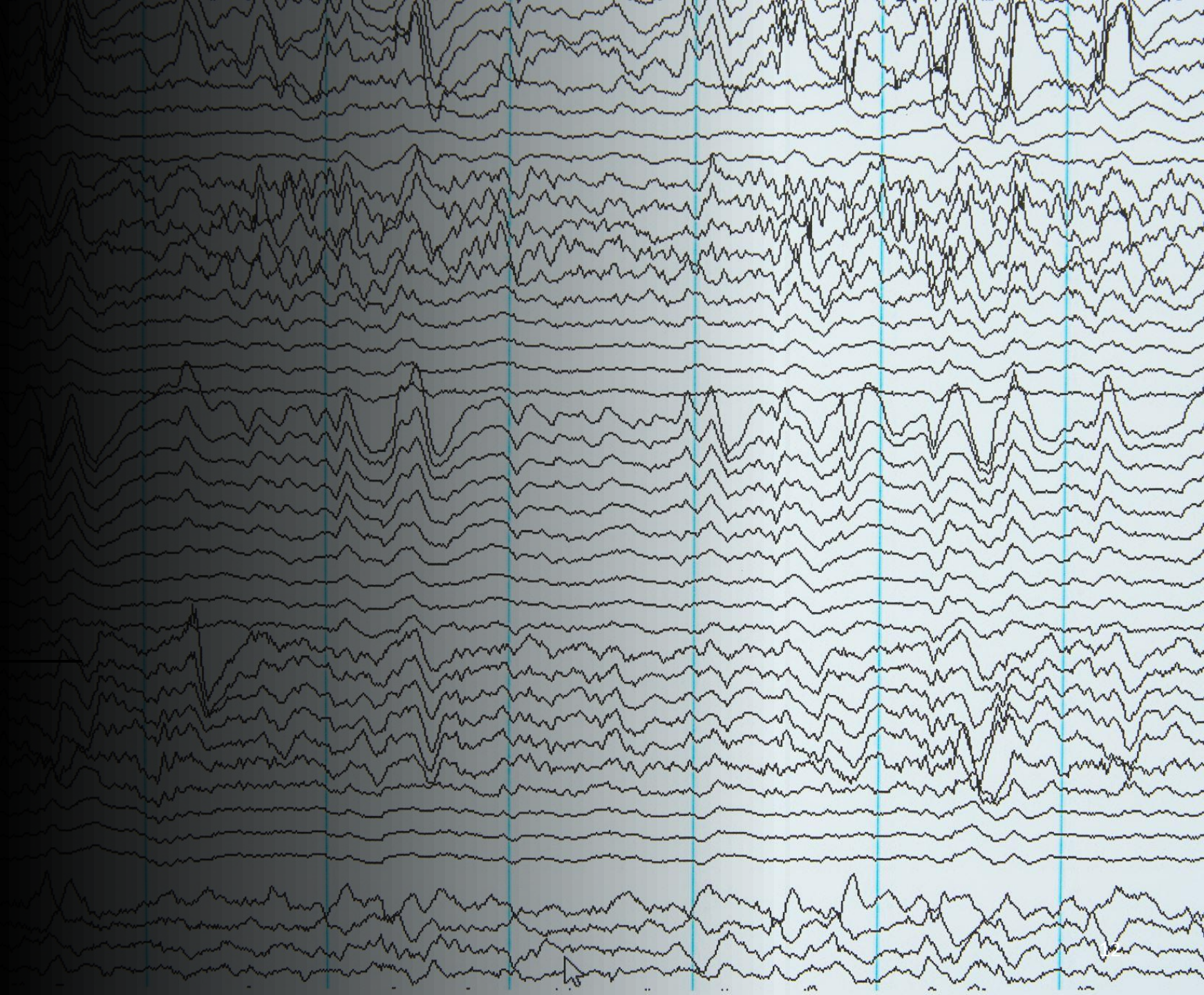


Table 2. Multiple multivariate regression of energy independence awareness, green finance awareness, communication for solar awareness, and community solar awareness scale variables

Variables	Energy Independence Awareness		Green Finance Awareness		Communication for Solar Awareness		Community Awareness	
	<i>B</i>	<i>Standard Error</i>	<i>B</i>	<i>S.E.</i>	<i>B</i>	<i>S.E.</i>	<i>B</i>	<i>S.E.</i>
Region — Midwest (Baseline)								
Northeast	-0.24	0.41	0.17	0.49	-0.16	0.30	-0.60	0.48
Southeast	-0.01	0.29	0.19	0.34	-0.10	0.21	-0.78**	0.34
Southwest	-0.10	0.39	0.07	0.47	-0.26	0.29	-0.42	0.46
West	-0.49	0.33	-0.31	0.39	-0.37	0.24	-0.63	0.39
Scale of Work — Other (Baseline)								
Neighborhood	-0.33	0.40	-0.12	0.48	0.34	0.30	0.47	0.47
Municipality	-0.69	0.43	-0.27	0.52	0.49	0.32	0.17	0.51
Region/Metro. Area	-0.35	0.38	0.31	0.46	0.13	0.28	0.53	0.45
Statewide	-0.19	0.35	0.36	0.42	0.32	0.26	0.52	0.41
Multi-state	-0.19	0.41	0.24	0.49	0.47	0.31	0.71	0.49
Tribal land	-0.37	0.59	-0.50	0.71	0.51	0.44	-0.53	0.70
National	-0.25	0.51	0.31	0.61	0.44	0.38	0.59	0.61

Variables	Energy Independence Awareness		Green Finance Awareness		Communication for Solar Awareness		Community Awareness	
	<i>B</i>	<i>Standard Error</i>	<i>B</i>	<i>S.E.</i>	<i>B</i>	<i>S.E.</i>	<i>B</i>	<i>S.E.</i>
Legal Structure — Other (Baseline)								
Nonprofit	-0.25	0.46	-0.14	0.55	0.55	0.35	-0.88	0.55
Cooperative	0.19	0.99	0.25	1.18	0.60	0.74	-0.04	1.17
For-Profit	0.10	0.62	0.05	0.74	0.70	0.46	-0.62	0.74
Fiscally-sprn. nonprofit	-0.23	0.56	0.11	0.66	0.91**	0.41	-0.32	0.66
Organization Staff								
Resides in Community	-0.69***	0.23	-0.67**	0.27	-0.39**	0.17	-0.36	0.27
Has Indigenous Staff	0.16	0.26	0.22	0.31	-0.03	0.19	0.20	0.31
Paid Employees — 0 (Baseline)								
1-5	0.001	0.30	0.03	0.36	-0.01	0.22	-0.24	0.35
6-10	0.20	0.40	0.25	0.47	-0.14	0.30	-0.04	0.47
11-15	-0.04	0.38	-0.24	0.46	-0.04	0.28	-0.37	0.45
16 or more	0.07	0.37	0.08	0.44	-0.17	0.27	-0.34	0.44
Volunteers — 0 (Baseline)								
1-5	-0.11	0.32	0.00	0.38	-0.31	0.24	-0.33	0.38
6-10	0.18	0.33	0.15	0.39	-0.04	0.24	-0.48	0.39
11-15	0.53	0.49	0.58	0.58	0.59	0.36	-0.11	0.58
16 or more	0.10	0.29	0.16	0.35	0.01	0.22	-0.35	0.35
Organization Tenure — 1-5 years (Baseline)								
6-10 years	0.39	0.30	0.41	0.36	0.04	0.22	0.81**	0.35
More than 10 years	0.12	0.26	-0.04	0.32	0.05	0.20	0.37	0.31
Solar Support								
Perceives local support	0.15	0.22	0.04	0.26	-0.15	0.16	-0.16	0.21
Perceives state support	-0.12	0.22	0.22	0.27	0.10	0.17	0.50*	0.26
Constant								
Constant	1.10	0.75	0.22	0.90	-0.24	0.56	1.18	0.89
R ²	0.28		0.27		0.40		0.38	
N =	81		81		81		81	

* p < 0.1 **; p < 0.05; *** p < 0.01

Table 3. Multiple multivariate regression of solar motivation, involvement, workforce training, and depth of solar work variables

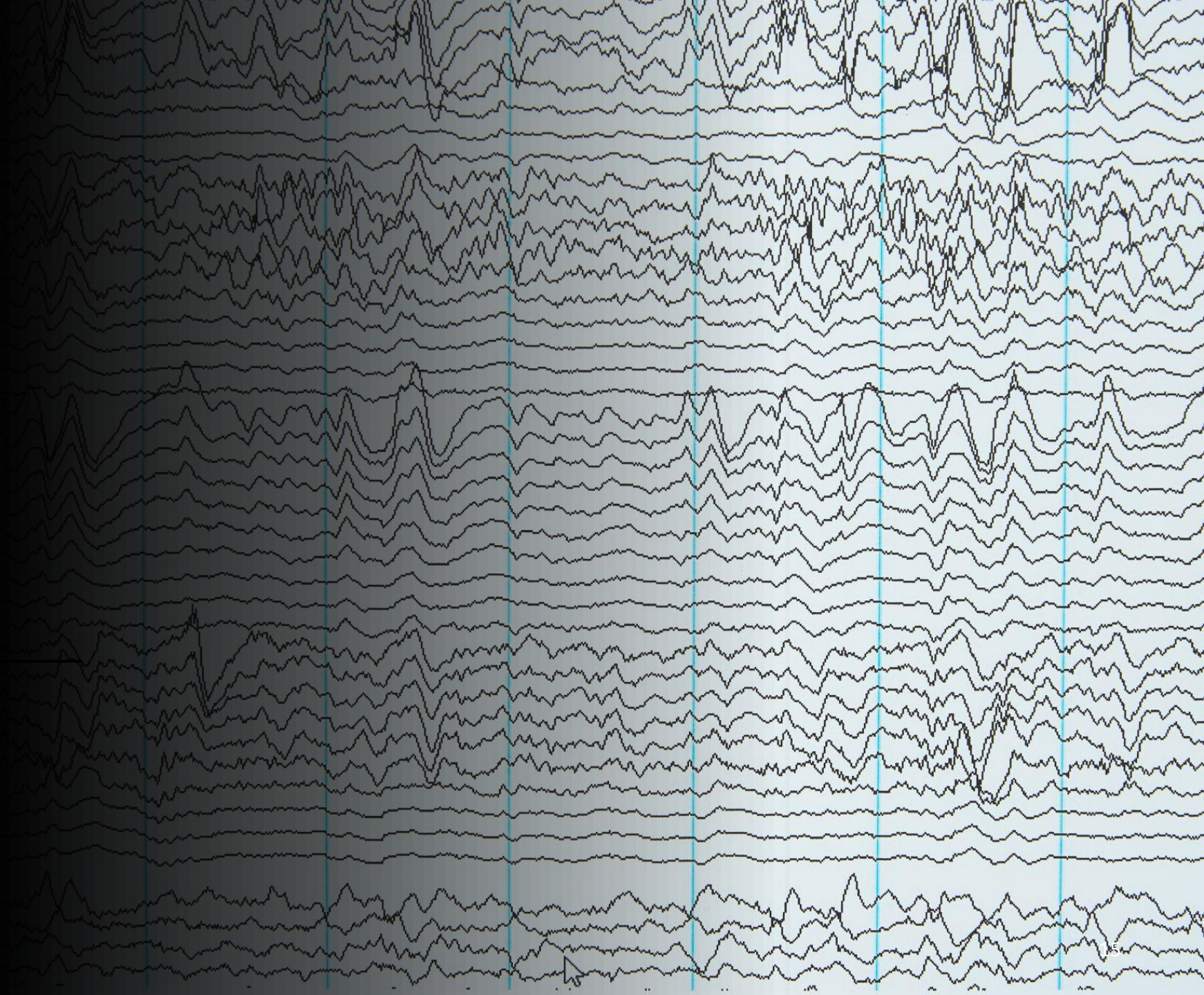
Variables	Motivation: Energy Sovereignty		Degree of Community Involvement		Workforce Installation		Depth of Solar Work	
	<i>B</i>	<i>Standard Error</i>	<i>B</i>	<i>S.E.</i>	<i>B</i>	<i>S.E.</i>	<i>B</i>	<i>S.E.</i>
Region — Midwest (Baseline)								
Northeast	-0.55	0.47	-0.91**	0.41	-0.27	0.44	-0.09	0.38
Southeast	-0.11	0.33	-0.27	0.29	-0.44	0.31	-0.46*	0.27
Southwest	-0.93**	0.45	-0.25	0.39	-0.38	0.43	-0.30	0.37
West	-0.82**	0.38	-0.94***	0.33	-0.28	0.35	0.08	0.30
Scale of Work — Other (Baseline)								
Neighbourhood	-0.02	0.46	1.08**	0.40	-0.68	0.43	-0.54	0.37
Municipality	-1.16**	0.50	0.29	0.44	-1.24**	0.47	-0.45	0.40
Region/Metro. Area	-0.41	0.44	0.24	0.38	-0.17	0.42	-0.12	0.36
Statewide	-0.42	0.40	0.72**	0.35	-0.75*	0.38	-0.01	0.32
Multi-state	-0.63	0.48	0.56	0.41	-0.76*	0.45	0.20	0.38
Tribal land	-0.49	0.68	0.22	0.59	-0.14	0.64	-0.45	0.55
National	0.03	0.59	0.33	0.51	-0.19	0.56	0.69	0.48
Legal Structure — Other (Baseline)								
Nonprofit	0.11	0.54	1.12**	0.47	-1.10**	0.51	-0.81*	0.43
Cooperative	0.35	1.15	0.75	0.99	-1.89*	1.08	-1.92**	0.92
For-Profit	-0.15	0.72	0.78	0.62	-0.81	0.68	-1.07*	0.58
Fiscally-spnr. nonprofit	-0.23	0.64	1.47**	0.56	-0.86	0.60	-1.00*	0.52
Organization Staff								
Resides in Community	-0.42	0.26	-0.50**	0.23	-0.39	0.25	-0.39*	0.21
Has Indigenous Staff	0.87***	0.30	0.80***	0.26	-0.08	0.28	-0.12	0.24
Paid Employees — 0 (Baseline)								
1-5	0.50	0.35	0.17	0.30	0.29	0.32	0.04	0.28
6-10	0.32	0.46	-0.13	0.40	0.33	0.43	-0.42	0.37
11-15	0.02	0.44	-0.32	0.38	-0.25	0.42	-0.49	0.36
16 or more	0.48	0.43	-0.21	0.37	0.35	0.40	-0.11	0.34

Variables	Motivation: Energy Sovereignty		Degree of Community Involvement		Workforce Installation		Depth of Solar Work	
	<i>B</i>	<i>Standard Error</i>	<i>B</i>	<i>S.E.</i>	<i>B</i>	<i>S.E.</i>	<i>B</i>	<i>S.E.</i>
Volunteers — 0 (Baseline)								
1-5	-0.38	0.37	-0.88***	0.32	-0.18	0.35	-0.43	0.30
6-10	-0.54	0.38	-0.54	0.33	0.19	0.35	-0.55*	0.30
11-15	-0.24	0.56	-0.31	0.49	0.93*	0.53	0.02	0.45
16 or more	-0.24	0.34	-0.59**	0.29	-0.03	0.32	-0.37	0.27
Organization Tenure — 1-5 years (Baseline)								
6-10 years	-0.20	0.35	0.47	0.30	-0.04	0.32	0.36	0.28
More than 10 years	-0.36	0.31	0.39	0.26	-0.56	0.29	0.27	0.25
Solar Support								
Perceives local support	-0.24	0.26	0.01	0.10	-0.07	0.24	-0.16	0.21
Perceives state support	0.03	0.26	0.00	0.08	0.28	0.24	0.20	0.21
Constant								
Constant	1.17	0.87	-0.46	0.75	2.22***	0.82	1.80**	0.70
R ²	0.46		0.48		0.45		0.49	
N =	81		81		81		81	

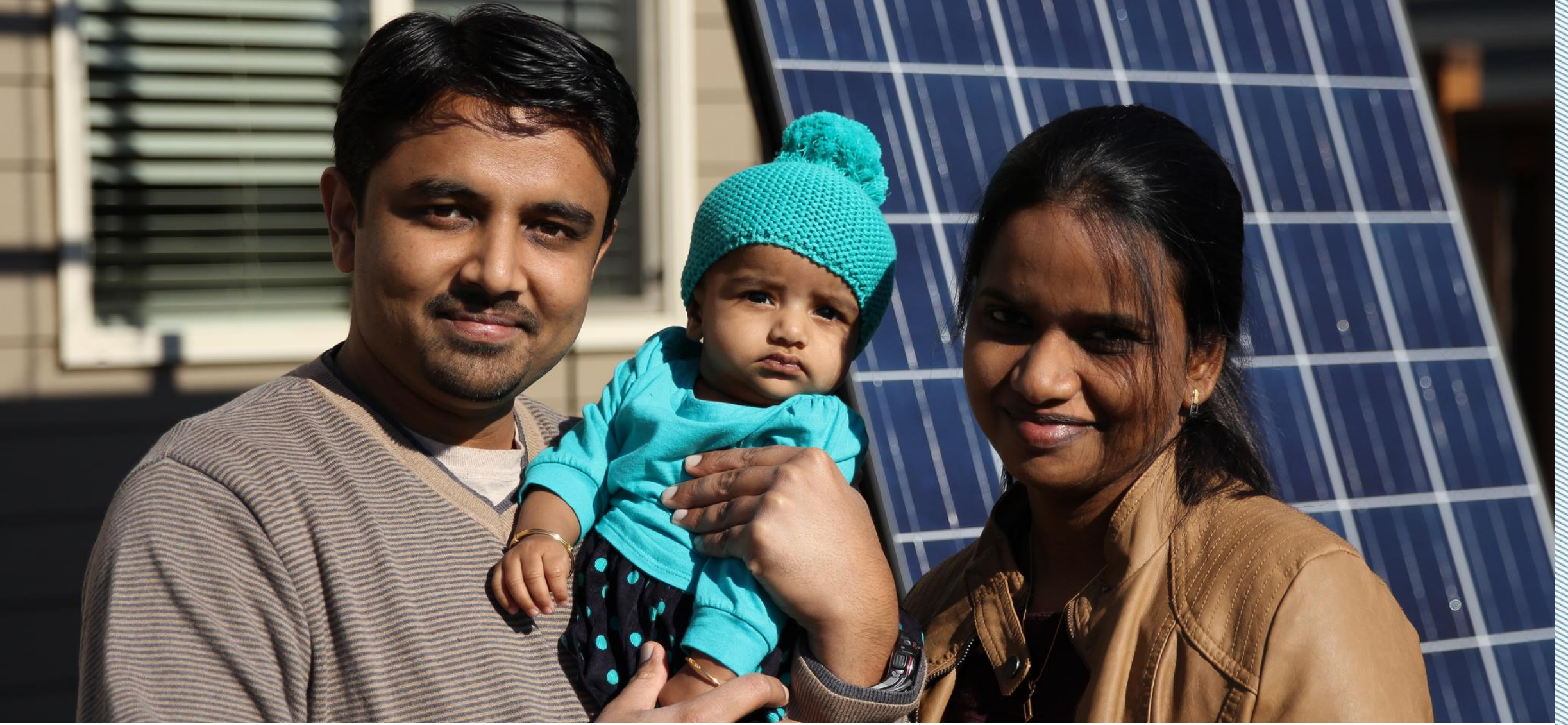
* p < 0.1 **; p < 0.05; *** p < 0.01



Concluding Thoughts



- **Energy Independence Awareness** underscores the pivotal role of volunteer engagement in CBO efforts to address energy independence, suggesting a policy focus on volunteer-based solutions.
- **Green Finance Awareness** highlights the importance of CBO familiarity with green finance in addressing energy burden effectively, suggesting resource allocation to green finance-focused organizations for mitigating energy burden.
- **Communication for Solar Awareness** shows the degree to which the organization perceives it has built trust, communication strategies, and capacity to raise awareness for residential solar programs. The emphasis on communication is particularly significant for organizations operating at the municipal and multi-state scale, and for those that are fiscally-sponsored nonprofits.
- **Degree of Community Solar Awareness** shows that the desire to communicate effectively with communities has not translated to awareness of solar programs and benefits in all communities. This is an area that most regions could build, especially the Southeast. For-profit organizations are more likely to be serving communities with strong solar awareness.
- **Motivation of Energy Sovereignty** shows that organizations in the Midwest have the highest motivation for energy sovereignty. Additionally, organizations that focus at the municipal level, and organizations where respondents reside in the community are less likely to be motivated by energy sovereignty. These organizations are likely focused on other goals. Organizations with Indigenous staff are more likely to be motivated by energy sovereignty.
- **Degree of CBO Involvement in Communities Served** emphasizes the degree of community involvement across learning, trust building and communication with the communities served.
- **Workforce Installation Scale** shows that scale of work, legal structure, and volunteer capacity have an impact on the focus on workforce development and solar installation. Nonprofits and cooperatives are less likely to be engaged in Workforce Installation whereas organizations with more substantial volunteer staff are more likely to be engaged. These variables may signal a capacity issue. Additional organizations that work at larger scales are less likely to be involved, which signals the importance of local scale work.
- **Finally, Depth of Solar Work** regression highlights the lower levels of installation in the Southeast, whereas the maps indicate greater focus in the Southwest and Northeast. The statistically significant relationship between “other” legal structures and higher rates of solar installation points to the need to further investigate the types of organizations that are successful in building depth of solar work, as well as the kinds of legal and structural challenges that create obstacles.
- Organizations that **Reside in the Community**, and which have moderate size volunteer capacity are also less likely to have experience and emphasis on solar installation



Best Practices for State Energy Agencies Working with Communities

Bayo Ware

27 September 2024





Remember Your “Why”

It works.

Do Your Homework

- Don't reinvent the wheel
- Research before you engage
- Start internally



Make it Custom

- Don't assume
- Adapt and create
- Keep it local





Planning Together

- Early engagement
- Start small
- Keep it flexible

Honor...

- ...Relationships, capacity, knowledge
- ...Tribal Sovereignty
- Acknowledge power dynamics



Thank You

- *Tribal-State Collaboration on Sustainability and Solar Development: A Case Study of the Leech Lake Band of Ojibwe*, Eugene Strowbridge, Leech Lake Bank of Ojibwe | Clean Energy States Alliance
- *Best Practices for Equitable Stakeholder Engagement in State Solar Programs*, Anna Ziai | Clean Energy States Alliance
- *Implementing Washington, DC's Solar for All Program: An Example of Equitable Solar Outreach and Consumer Education*, Matt Ohloff | Clean Energy States Alliance
- *Predevelopment Funding for LMI Solar and Storage Projects: A Case Study from New York*, Matt Ohloff | Clean Energy States Alliance
- *Investing in Relationships: Strategies State Agencies Can Use to Equitably Partner with Community Representatives*, Energy Trust of Oregon | Clean Energy States Alliance

