Solar Workforce Development in Wisconsin
Status and MREA ‘Solar Ready Wisconsin’ Initiative

Nick Hylla, Executive Director
Midwest Renewable Energy Association
Powering Local Leadership Summit, 1/24/19
MREA Overview

- Founded in 1990
- 3,000 members
- Offices in Custer, Milwaukee, and Minneapolis
- Professional Training
- Consumer Education
- PV Technical Assistance
- The Energy Fair
SOLAR GROUP BUY SUCCESS!
Since 2013, we’ve been helping communities go solar through Group Buy “Solarize” programs.

Bring solar to your community!
Submit a community application to bring a Solar Group Buy to your neighborhood. midwestrenew.org/solargroupbuy

- 22 Solar Group Buys have been facilitated with Midwest community partners since 2013.
- 6,000 people learned about going solar at “Solar Power Hour” information sessions.
- 7 Megawatts of clean solar energy have been contracted through the programs.
- 1,000+ properties have gone solar!

OUR 2018 PROGRAMS TARGETED EIGHT MIDWEST COMMUNITIES

<table>
<thead>
<tr>
<th>WISCONSIN</th>
<th>ILLINOIS</th>
<th>IOWA</th>
<th>MINNESOTA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sauk County</td>
<td>Metro East</td>
<td>Johnson County</td>
<td>Twin Cities</td>
</tr>
<tr>
<td>448 kW on 67 properties</td>
<td>480 kW on 47 properties</td>
<td>1155 kW on 181 properties</td>
<td>100.8 kW on 14 properties</td>
</tr>
<tr>
<td>Jefferson County</td>
<td>Urbana-Champaign 3.0</td>
<td></td>
<td>Supported by CERTs Seed Grant</td>
</tr>
<tr>
<td>139 kW on 18 properties</td>
<td>481 kW on 40 properties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central WI 2.0</td>
<td>Bloomington-Normal 2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>223 kW on 40 properties</td>
<td>424 kW on 31 properties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supported by Community Foundation of Central WI</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

“We thought it’s a great opportunity to take advantage of expert guidance and bring this solar opportunity to Johnson County.”
- Becky Soglin, Johnson County Sustainability Coordinator
GOLD DESIGNATIONS
Johnson County, IA
City of Eau Claire, WI
City of Wisconsin Rapids, WI

SILVER DESIGNATIONS
City of Ashland, WI
Ashland County, WI

BRONZE DESIGNATIONS
City of Bayfield, WI
Bayfield County, WI

Source: https://www.solsmart.org/
TRAINING CATALOG

MOVING RENEWABLE ENERGY EDUCATION FORWARD SINCE 1990.

1,172 STUDENTS received renewable energy training with MREA from July 2017 to November 2018.

495 Students took online courses, offering a convenient way to break into the clean energy workforce and build upon current credentials. Courses range from novice to expert.

58 Students participated in our 2018 Solar Training Academy from January - March 2018. Held in five Midwest locations and spanning four states, students learn from a series of weekend classes preparing them for careers in the solar industry.

500 Students participated in customized solar training through a total of 14 business and educational partners. MREA provides curriculum based on each group's needs.

Source: https://www.midwestrenew.org
Solar Workforce Development: A National View

250,271 Solar workers in the United States, as of 2017

Most solar companies do not require a bachelor's degree for new hires

93% of solar installation companies

79% of solar companies overall

Figure 1.1 U.S. Annual PV Installations, 2010-2017

<table>
<thead>
<tr>
<th>Year</th>
<th>Residential PV</th>
<th>Non-Residential PV</th>
<th>Utility PV</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>849</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>1,021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>3,373</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>4,766</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>6,244</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>7,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>15,128</td>
<td></td>
<td>10,608</td>
</tr>
<tr>
<td>2017</td>
<td>15,128</td>
<td></td>
<td>10,608</td>
</tr>
</tbody>
</table>
PV and Wind Are Winning on Price

Source: Lazard. LCOE Analysis Version 11.0, November, 2017
Planned for WI...

- >7GW proposed
- 69% PV
- 20% Wind
- 9% Gas
- 2% Battery Storage

89% of all new electricity generation in WI will be solar and wind.
Solar Workforce Development: A National View

LEVEL OF EXPERIENCE EXPECTED FOR ENTRY-LEVEL CANDIDATES

<table>
<thead>
<tr>
<th>No Experience</th>
<th>1-4 Weeks Volunteer</th>
<th>12 Months or Less</th>
<th>1-3 Years</th>
<th>3+ Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0%</td>
<td>11.2%</td>
<td>36.7%</td>
<td>26.3%</td>
<td>8.7%</td>
</tr>
</tbody>
</table>

57.9%

NATIONAL COMPANIES LABOR COST PER KW VS. TRAINING INVESTMENT

https://www.americansolarworkforce.org/
Solar Workforce Development: A National View

• The Workforce Development System
• Services for Hiring and Recruitment
• Public Resources for Training
• Career Pathways
• Sector Partnerships
• Workforce Development Action Plans

https://www.americansolarworkforce.org/
Wisconsin’s Clean Energy Workforce

Top Ten Counties

<table>
<thead>
<tr>
<th>County</th>
<th>Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milwaukee</td>
<td>463</td>
</tr>
<tr>
<td>Jefferson</td>
<td>407</td>
</tr>
<tr>
<td>Dane</td>
<td>399</td>
</tr>
<tr>
<td>Waukesha</td>
<td>382</td>
</tr>
<tr>
<td>Adams</td>
<td>140</td>
</tr>
<tr>
<td>Outagamie</td>
<td>69</td>
</tr>
<tr>
<td>Buffalo</td>
<td>68</td>
</tr>
<tr>
<td>Florence</td>
<td>63</td>
</tr>
<tr>
<td>Douglas</td>
<td>58</td>
</tr>
<tr>
<td>Ozaukee</td>
<td>55</td>
</tr>
</tbody>
</table>

Wisconsin

<table>
<thead>
<tr>
<th>Category</th>
<th>Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar jobs</td>
<td>2,921</td>
</tr>
<tr>
<td>Installation jobs</td>
<td>1,426</td>
</tr>
<tr>
<td>Manufacturing jobs</td>
<td>604</td>
</tr>
<tr>
<td>Sales and distribution</td>
<td>415</td>
</tr>
<tr>
<td>Project development</td>
<td>360</td>
</tr>
<tr>
<td>Other solar jobs</td>
<td>117</td>
</tr>
</tbody>
</table>

Source: https://www.solarstates.org/#state/wisconsin/counties/solar-jobs/2017
# Wisconsin Solar Policy

## Solar Policy Context

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net Metering Policy Grade</strong></td>
<td>D</td>
</tr>
<tr>
<td><strong>Interconnection Policy Grade</strong></td>
<td>D</td>
</tr>
<tr>
<td><strong>Legal Status of Third-Party Ownership</strong></td>
<td>Status Unclear or Unknown</td>
</tr>
<tr>
<td><strong>Property Assessed Clean Energy Financing (PACE) Status</strong></td>
<td>PACE-enabling Legislation; Active Commercial PACE Program</td>
</tr>
</tbody>
</table>

### Community Solar
- **No Legislation Enacted**

### Renewable Portfolio Standard Solar Carveout
- **10% by 2015**

### Renewable Portfolio Standard
- **N/A**

### State Ranking for Average Electricity Price (Highest to Lowest)
- **11.05 cents/kWh**

### State Ranking
- **15**

WI Solar Workforce Development Needs

- Detailed, statewide development plan
- Scaffolded approach from secondary school to technical college
- Enabling state policy including interconnection, financing, and distribution system planning
- Supportive consumer protection approach
- Statewide jurisdiction leadership in permitting, planning, zoning, deployment and consumer engagement (SolSmart)
- Recognition of PV installer as a desirable profession

**STATE SOLAR JOBS**

- 2,921 Solar Jobs
- 23 State Ranking for Solar Jobs
- 27 State Ranking for Solar Jobs Per Capita
- 108 New Solar Jobs, 2017
- 4% Solar Jobs Growth, 2017
- 0.5% Projected Jobs Growth, 2018
- 19 State Rank by Solar Jobs Added in 2017

Solar jobs grew 3 times faster than the overall state economy in 2017.
MREA: Training for Equality of Opportunity

• The Chicago Urban League (IL)
• The Aurora Urban League (IL)
• The SAFER Foundation (IL)
• National Latino Ed. Inst. (IL)
• The MN Dept. of Corrections (MN)
MREA ‘Solar Ready Wisconsin’ Initiative

- Technical College Partnership: Madison College, MSTC, NWTC, CVTC
- Advanced PV Training
- Job-site Experience
- Jurisdiction Partnerships
- Statewide Contractor Partnerships
- The Wisconsin Solar Corps
  - Module Donations to Communities, Schools, and Non-Profit Organizations
  - High-impact, High-visibility Installations
- Beginning February 2019

Source: https://www.midwestrenew.org
Questions?

Nick Hylla
Executive Director
715-592-6595 x107
nickh@midwestrenew.org