



Wisconsin Distributed Resources Collaborative

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October 16, 2015


DAIRYLAND POWER
COOPERATIVE

A Touchstone Energy® Cooperative 

Dairyland Service Territory

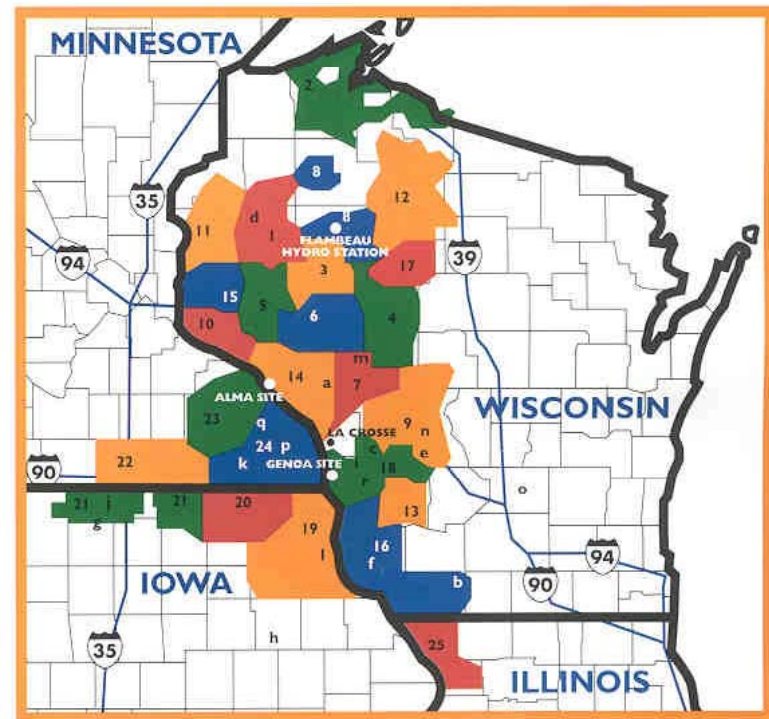
Wisconsin: 18 member cooperatives
10 municipal customers

Minnesota: 3 member cooperatives
2 municipal customers

Iowa: 3 member cooperatives
5 municipal customers

Illinois: 1 member cooperative

Total: 25 member cooperatives
17 municipal customers



Dairyland - 2000

- Eight coal-fired generating units – Genoa 3, Alma 1-5, Madgett and Stoneman (sold in 1996 but active as PPA)
- One hydroelectric unit – Flambeau Hydroelectric Station
- One wind project – Chandler Wind Farm
 - All of 0.7 MW
- Various municipal generating units
 - Municipal customers cover their own capacity requirements
- And not much in the way of distributed generation

Dairyland - 2015

- Three coal-fired generating units – Genoa 3, Madgett and Weston 4
- Two hydroelectric units – Flambeau and Sartell
- One biomass unit – Stoneman (converted from coal in 2010)
- Three landfill units – Central Disposal, Seven Mile and Timber Trail
- Nine anaerobic digesters – Four operational and five off-line
- 10 cooperative community solar programs
 - Totaling about 2.6 MW with two more under development
- 12 wind projects
 - Totaling about 87 MW – cooperative and municipal projects
- Three solar units – Minnesota 3, CEC, and USFWS
 - Totaling about 1 MW
 - Also takes net output from Galena Wastewater solar project
- Various municipal generating units
- And about 625 distributed generation units
 - About 515 are photovoltaic and about 110 are small wind turbines – totaling about 5.4 MW

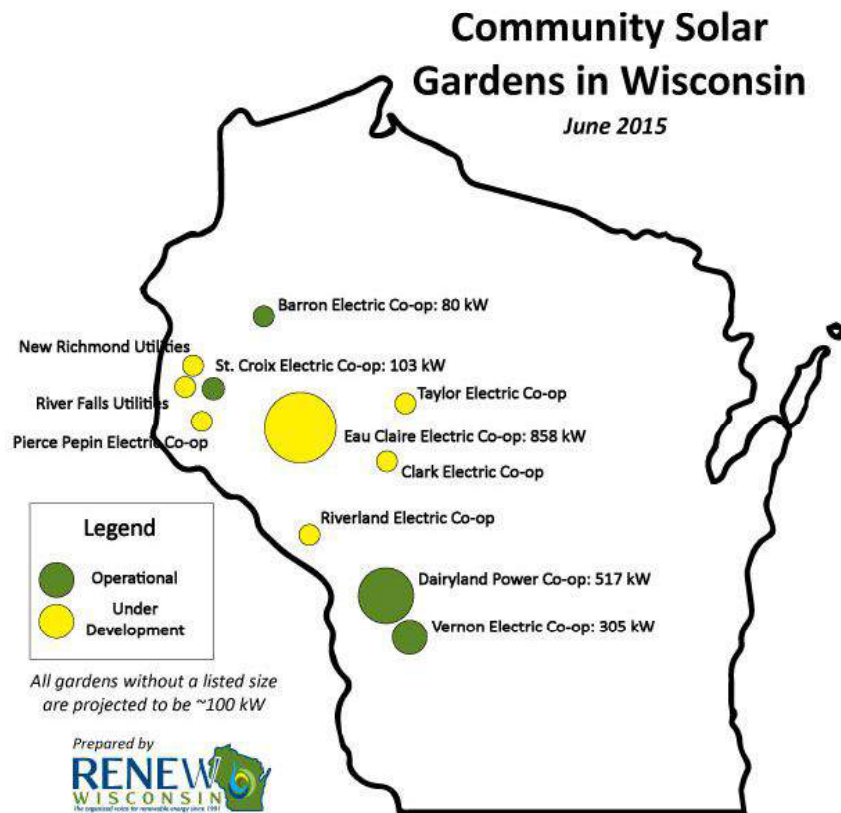
Dairyland Wholesale Energy

- 2000
 - 3,944,000 MWh wholesale to member cooperatives and municipals
 - About 1.3% renewable energy (Flambeau and Chandler Wind Farms)
- 2014
 - 5,248,000 MWh wholesale to member cooperatives and municipals
 - About 12.2 % renewable energy (based on about 30 projects) but does not include distributed generation or community solar projects
- About 2% annual growth in wholesale energy
- About 80% annual growth in renewable energy – not including distributed generation or community solar projects

Ray Nitschke – G. B. Packers

“I think it was the preparation and everything Lombardi represented, you know, about hard work and that every game was important. So when you get to the real important games, you were ready to go.”

Cooperative Experience with Solar



Source: <http://www.renewwisconsin.org/pdf/2015-6-19%20MREA%20Fair%20WI%20DG%20Policy%20small.pdf>

- Dairyland
 - CEC Solar, Westby
 - MN3 Solar, Oronoco, MN
 - USFWS, Necedah, WI
 - About 1 MW
- Member cooperatives
 - Ten community solar projects
 - Two underdevelopment
 - About 2.8 MW

25 MWac Solar

- Will generate about 45,000 MWh annually
 - About the same as a 15 MW wind farm
 - This is about 1% of Dairyland's energy needs
- Will contribute about 10 MW of capacity
 - This is about 1% of Dairyland's capacity needs
- Dairyland represents about 5% of Wisconsin energy sales and about 7% of the generating capacity

Solar RFP

- 10 pages long plus one page appendix
- 25 MWac with preference for 1 MWac to 5 MWac projects
- No designated preferred sites
- Evaluation Criteria includes:
 - Price and terms
 - Capacity
 - Deliverability
 - Evidence of site control
 - Quality and experience of company
 - Financial capability of the proposer

RFP Schedule

- **Issued**
 - June 4, 2015
- **Proposer Notice of Intent to Bid**
 - July 15, 2015
- **Proposals Due**
 - August 31, 2015
- **Select Short List of Proposals**
 - October 30, 2015
- **Execute Project Agreements**
 - December 31, 2015
- **Commercial Operation Date**
 - July 1, 2016

Dairyland Power Courts Solar Developers

The screenshot shows a web browser window displaying a news article. The browser's address bar shows the URL: http://lacrosetribune.com/news/local/dairyland-power-courts-solar-developers/artide_fedd5c51-. The page header includes the LaCrosseTribune.com logo, a weather widget showing 56° Overcast, and a navigation menu with categories like News, Sports, Opinion, etc. The article title is "Dairyland Power courts solar developers" and is dated June 05, 2015, 7:00 am, by Chris Hubbuch. The article text discusses Dairyland Power's search for solar developers to increase its renewable energy portfolio. On the right side of the article, there are three promotional boxes: "ACTIVATE YOUR DIGITAL SUBSCRIPTION", "LOOKING FOR NEWSPAPER DISPLAY ADS?", and a "Search local business directory" form.

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Dairyland Power courts solar developers

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June 05, 2015 7:00 am • By Chris Hubbuch, 0 Comments

Dairyland Power is in the market for solar energy.

The La Crosse-based electric cooperative announced Thursday it is seeking proposals for up to 25 megawatts of photovoltaic generation, which would substantially increase its renewable energy portfolio.

Dairyland currently purchases solar energy from 520-kilowatt solar farms in Westby and Oronoco, Minn., that came online in August.

"This will definitely be our largest project to date," said spokeswoman Katie Thomson.

Dairyland indicated the solar energy could come from multiple farms as small as 1 megawatt and could be generated by a utility-owned facility or purchased under contract. The company hopes to have the power online by July 2016.

With the addition of 25 megawatts, solar energy would be about 2 percent of Dairyland's overall portfolio.

Coal-fired plants in Genoa, Alma and Rothschild, Wis., contribute more than 70 percent of Dairyland's generation capacity. Gas, oil and diesel account for another 17 percent.

Dairyland has already met Wisconsin's 2015 renewable energy mandate of 10 percent. Minnesota

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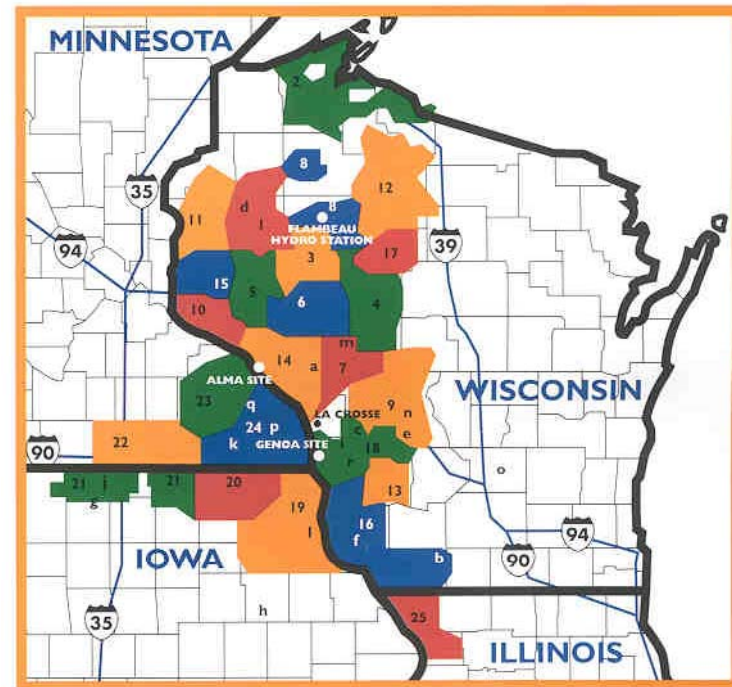
Solar Energy Industries Association

- **Facts on the Wisconsin Solar Industry**

- There are currently more than **171 solar companies** at work throughout the value chain in Wisconsin, **employing 1,900 people**.
- In 2014, Wisconsin **installed 2 MW of solar electric capacity**, ranking it 34th nationally.
- The **21 MW of solar energy currently installed** in Wisconsin ranks the state 30th in the country in installed solar capacity. There is enough solar energy installed in the state to **power 3,100 homes**.
- In 2014, **\$7 million** was invested on solar installations in Wisconsin.

Dairyland Service Territory

- 3,200 miles of transmission lines
- 293 substations
- 62 counties in four states
- Approximately 45,000 square miles



Situation Awareness

- Whole service territory is in play
 - Almost every Dairyland and member cooperative substation
 - Unlimited number of potential sites
 - Significant number of site evaluations, interconnection agreements and power purchase agreements
- Negligible geographic diversity benefit
 - Some benefit to spreading sites out over territory to reduce cloud issues and system impacts (i.e. – “spread the wealth”)

Solar Times - October 16, 2015

Direction	City	State	Sunrise	Solar Noon	Sunset
North	Iron River	Wisconsin	7:24 AM	12:51 PM	6:19 PM
East	Oakdale	Wisconsin	7:16 AM	12:47 PM	6:18 PM
South	Elizabeth	Illinois	7:14 AM	12:47 PM	6:19 PM
West	Albert Lea	Minnesota	7:28 AM	12:59 PM	6:30 PM

Solar RFP Results – So Far

- 68 Notices of Intent to bid
 - Non-binding and not mandatory
 - Early feedback as to potential number of bids
 - Something of an “Oh, no!” moment – concern for evaluating large number of bids in short timeframe
 - Many unfamiliar companies
- 30 Bids
 - Good selection of companies represented
 - More than 25 MWac of bids received
 - Detailed bid evaluations – Did they meet criteria?
- Positive results are expected – Stay Tuned!!!

Friedrich Nietzsche

“Experience is something you don’t get until just after you need it.”



Questions?

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