



Year in Review - Solar

Meet the Class of 2017

Michael Vickerman
RENEW Wisconsin
January 18, 2018

Solar PV Growth in Wisconsin

| Year | Cumulative capacity | Rate of increase |
|------|---------------------|------------------|
| 2015 | 25 MW | 25% |
| 2016 | 42 MW | 68% |
| 2017 | 80 MW | 90% |

SUNFLOWER II ENERGIZED



[PDF of the release](#)



Downsville • 1.1 MW
Dunn Energy Cooperative



DEVELOPER: SoCore Energy
GEN'L CONTRACTOR: Faith Technologies
POWER PURCHASER: Dairyland Power



AIRPORTS

Appleton Int'l Airport 230 kW on carports



APARTMENT BUILDINGS

Market West Apartments



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Middleton
375 kW



AUTOMOBILE DEALERSHIPS



94 kilowatts

Smart Motors Madison 325 kW



Kunes Country Ford Delavan 151 kW



BIG BOX RETAIL



**Target
West Allis
380 kW**



Solar PV arrays have been installed on 17 Target stores in Wisconsin including two in 2017. The retailer now hosts 6.5 MW of solar capacity in Wisconsin. All but three of the stores are located in WEPCO territory.

BREWERIES



60 kilowatts





Lakefront Brewery
Milwaukee
70 kW

CORPORATE HEADQUARTERS

LARGEST ROOFTOP ARRAY IN WISCONSIN



Capacity:
1,200 kWDC

American
Family
Insurance
Madison



Fairway Mortgage • Madison
142 kW

DAY CARE CENTERS



This system will supply 72% of the electricity by this day care center.

Big Steps Little Feet • Sheboygan
20 kw

FARMS

Waseda Farms

Baileys Harbor • 50 kilowatts



edible
DOOR

[EAT](#) [DRINK](#) [SHOP](#) [THINGS TO DO](#) [RECIPES](#) [F](#)

EDIBLE BITE

Waseda Farms plugs into solar power

NOVEMBER 13, 2017

NORTH WIND
renewable energy



Breitenmoser Family Farm



Merrill • 19.8 kW



Legacy Solar Co-op

LIBRARIES



T.B. Scott Free Library

Merrill
28.6 kW

Legacy Solar Co-op

NORTH WIND
renewable energy



MANUFACTURING

Componex Corporation Edgerton

Makers of aluminum dead shaft idler rollers

Capacity: 230 kW





Badger Meter
Brown Deer • 700 kW



Makers of flow
measurement
and control
devices

Necedah Screw Machine Products • Necedah 103 kW



NORTH WIND
renewable energy



MUNICIPALITIES

Well 26



City of Madison Solar Training 2017



| Location | Capacity (in kilowatts) |
|------------------|-------------------------|
| Streets West | 99 |
| Well #26 | 21.6 |
| Fire Station #12 | 18.9 |
| Total | 139.5 |

Fire Station #12





In 2017, Madison becomes 1st city in WI to adopt 100% renewable energy goal



Streets West



City of Fitchburg



| | |
|-------------------|--------|
| Library | 114 |
| City Hall | 47 |
| Public Works | 112 |
| West Fire Station | 92 |
| Total | 365 kW |

OFF-GRID RESIDENCES

Former on-grid residence North of Appleton

3.84 kW



No back-up generator
on premises

PUBLIC SCHOOLS

Oregon High School

136 kilowatts



Lincoln High School
Wisconsin Rapids
98 kW



Northland Pines High School Eagle River • 230 kW



Eagle Point
SOLAR
Bringing you the SUN

 **Hoffman**[®]
Planning, Design & Construction, Inc.



RETIREMENT HOMES

School Sisters of St. Francis Milwaukee • 375 kW



Legacy Solar Co-op

RESIDENTIAL GROUP BUYS

Wisconsin Solar Group Buys – 2017

| Program | Participants | Signed contracts | Aggregate capacity (in kW) |
|---------------------------------|---|------------------|----------------------------|
| Solar Milwaukee/ Solar Tosa | Cities of Milwaukee and Wauwatosa/ SunVest Solar/MREA | 24 | 121 |
| MadiSUN | Cities of Madison and Middleton/ Full Spectrum Solar/ Midwest Solar Power/RENEW Wisconsin | 32 | 145 |
| Solar Central Wisconsin | Cities of Stevens Point and Wisconsin Rapids; Mid-State Tech College; North Wind Renewable Energy | 46 | 335 |
| Solar Iowa County | Driftless Area Land Conservancy; Solar Iowa County; UW-Extension; Eagle Point Solar | 32 | 240 |
| Solar Southeastern Wisconsin | Greening Greater Racine; Arch Electric | 24 | 147 |
| Total | | 158 | 988 |

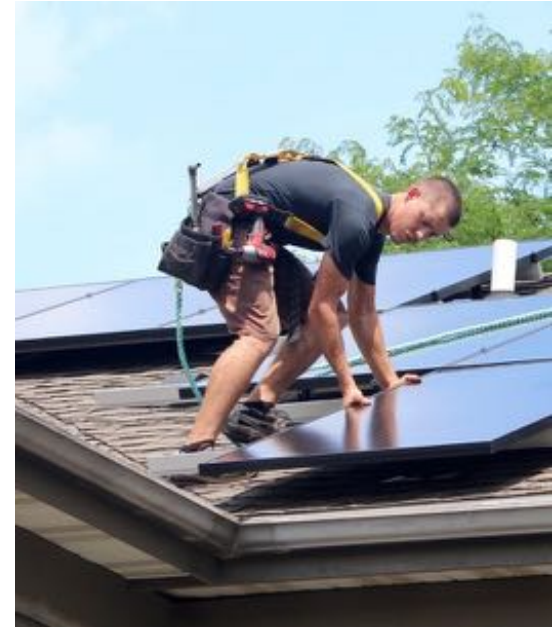
2017 vs. 2016 Group Buys – What the Numbers Tell Us

| Year | No. of programs | Signed contracts | Total installed Capacity (in kW) |
|------|-----------------|------------------|----------------------------------|
| 2016 | 4 | 128 | 528 |
| 2017 | 5 | 158 | 988 |



46 households
335 kW

32 households
145 kW





32 households
240 kW



Eagle Point
SOLAR
Bringing you the SUN





24 households
121 kW

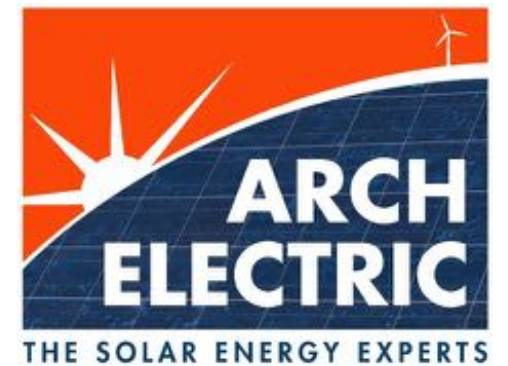


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21 households
3 businesses
147 kW



SHOPPING CENTERS

Mayfair Mall Wauwatosa



Strata Solar/Pieper Power
Capacity: 842 kilowatts

<https://www.stratasolar.com/project/mayfair-mall>

Fox River Mall

Appleton



Strata Solar/Eland Electric

Capacity: 608 kilowatts

<https://www.stratasolar.com/project/fox-river-mall>

SUPERMARKETS

Lakewood SuperValu



Lakewood
144 kW



NES
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TRIBAL NATIONS



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6 rooftops
800 kW

Oneida Nation *Oneida*



UTILITIES

Utility-Scale PV Projects Energized in 2017

| Location (Electric Provider) | Capacity (in MW) | Location (Electric Provider) | Capacity (in MW) | 22.2 MW total |
|---------------------------------|---------------------|---------------------------------|---------------------|--|
| New Auburn (Chippewa Valley) | 2.75 | Downsville (Dunn) | 1.1 | 14 completed by SoCore Energy |
| Flambeau (Price) | 2.5 | Arcadia (Riverland) | 1.1 | |
| Roberts (St. Croix) | 2.34 | Conrath (Jump River) | 1.0 | Flambeau array developed by groSolar, owned by CMS Energy |
| Medford (Taylor) | 2.0 | Hallie (Eau Claire) | 1.0 | |
| Necedah (Oakdale) | 1.7 | Eau Claire (Xcel) | 1.0 | Xcel - Eau Claire array developed and owned by Pristine Solar |
| Liberty Pole (Vernon) | 1.3 | Hillsboro (Vernon) | 1.0 | |
| Centuria (Polk-Burnett) | 1.25 | Ash Ridge (Richland) | 0.6 | |
| Eastman (Scenic Rivers) | 1.25 | Bayfield (Iron River) | 0.3 | |

Flambeau Solar

Phillips
2.5 MWAC
~5,000 MWH/year



groSolar
CMS Energy
Dairyland Power
Price Electric Coop



Xcel Shared Solar



Eau Claire 1 MW

Owner: Pristine Energy



Madison Gas & Electric



Roof + wall + parking canopy = 160 kW



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WAREHOUSES



Central Storage &
Warehouse
Pleasant Prairie
746 kW

At more than 1.4 MW, CS&W has
more rooftop solar capacity than any
Wisconsin-based company



WASTEWATER TREATMENT SYSTEM DESIGN

Energeneecs Saukville • 98 kW



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On to 2018



Renewable Energy Project of the Year

Quilt Block Wind Farm



Darlington, Wisconsin





































renewables





















Renewable Energy Champions Award

John & Mary Frantz





Renewable Energy Champions Award

Cal & Laurie Couillard

