



2020
RENEWABLE ENERGY SUMMIT
2020 VISION: THE PATH TO 100% CLEAN ENERGY

THURSDAY • JANUARY 16, 2020

 **RENEW
WISCONSIN**

PRESENTED BY





2020

RENEWABLE ENERGY SUMMIT

2020 VISION: THE PATH TO 100% CLEAN ENERGY

2019 YEAR IN REVIEW

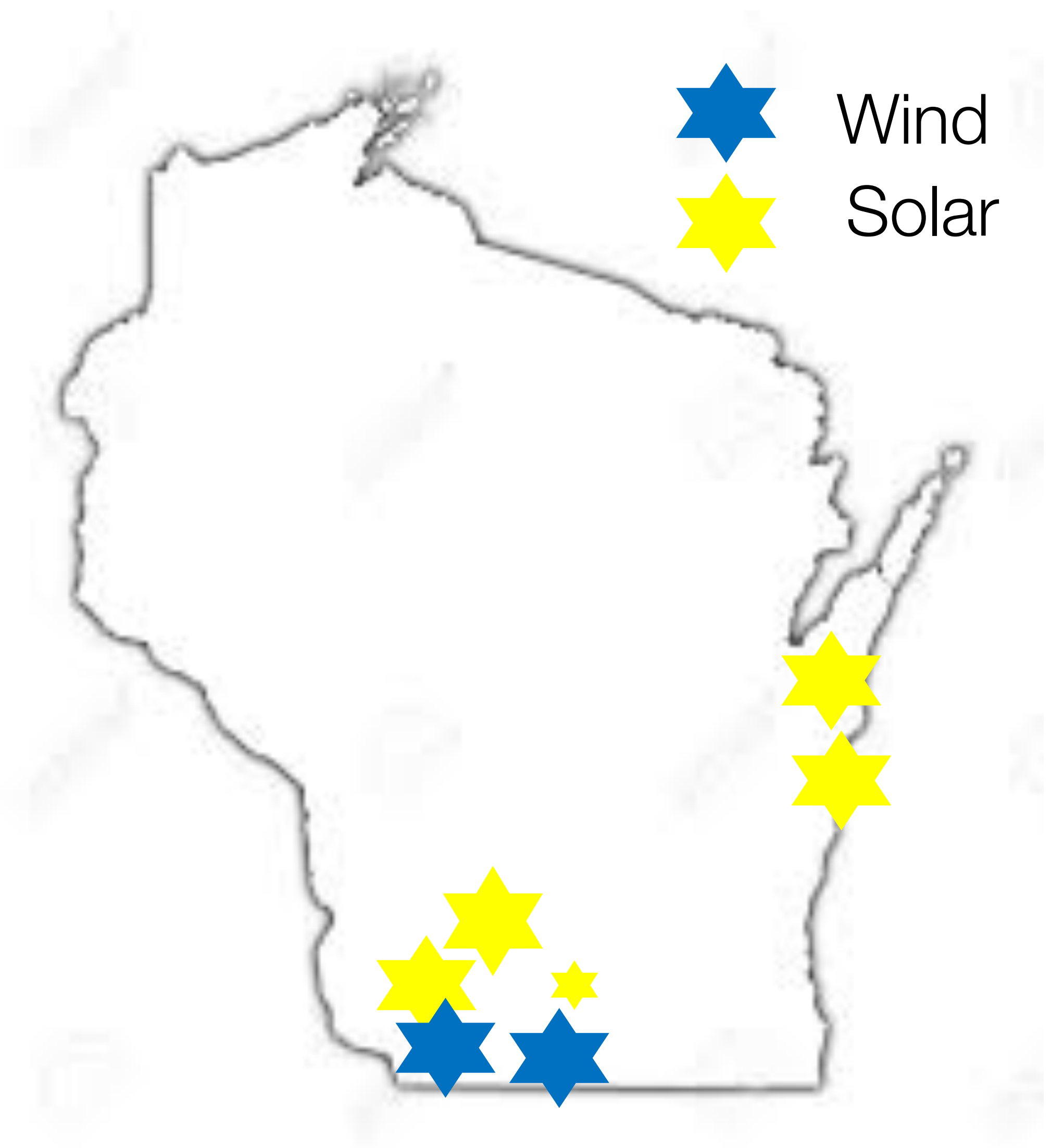
Michael Vickerman



BIG PICTURE • 2019

Renewable capacity installed in WI
33 MW (AC)

Renewable capacity permitted in WI
799 MW (AC)



To put 2019's totals in perspective, let's compare them with this slide from last year's summit.

SOLAR PV GROWTH IN WISCONSIN

YEAR	CUMULATIVE CAPACITY (IN MW)	RATE OF INCREASE
2015	25	25%
2016	42	68%
2017	80	90%
2018	103	29%
2019	138	34%

NEW FACES IN 2019



Richland County Solar
49.9 MW

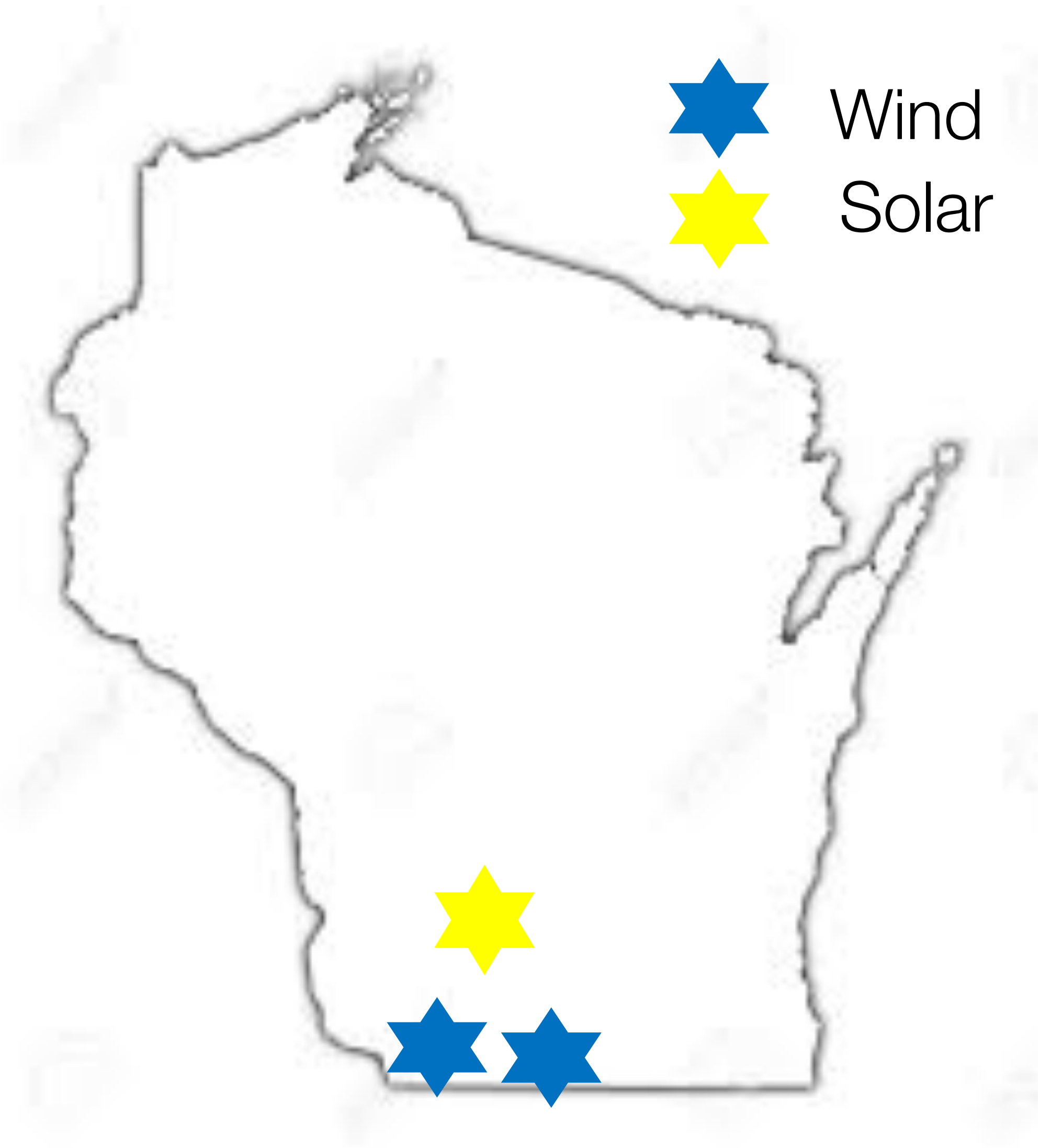


Sugar River Wind Farm
66 MW



Red Barn Wind Farm
99 MW

All three projects locally permitted





CASHTON

LARGE SOLAR FARMS



WARREN ARRAY – ST. CROIX COUNTY



Business

2 giant solar projects approved

State will produce 5 times as much power from sun

Guy Boulton

Milwaukee Journal Sentinel
USA TODAY NETWORK - WISCONSIN

Wisconsin will produce five times as much power from the sun, by one estimate, with the addition of two solar projects approved Thursday.

"It is a landmark day for solar energy in Wisconsin," Tyler Huebner, executive director of Renew Wisconsin, said in a statement.

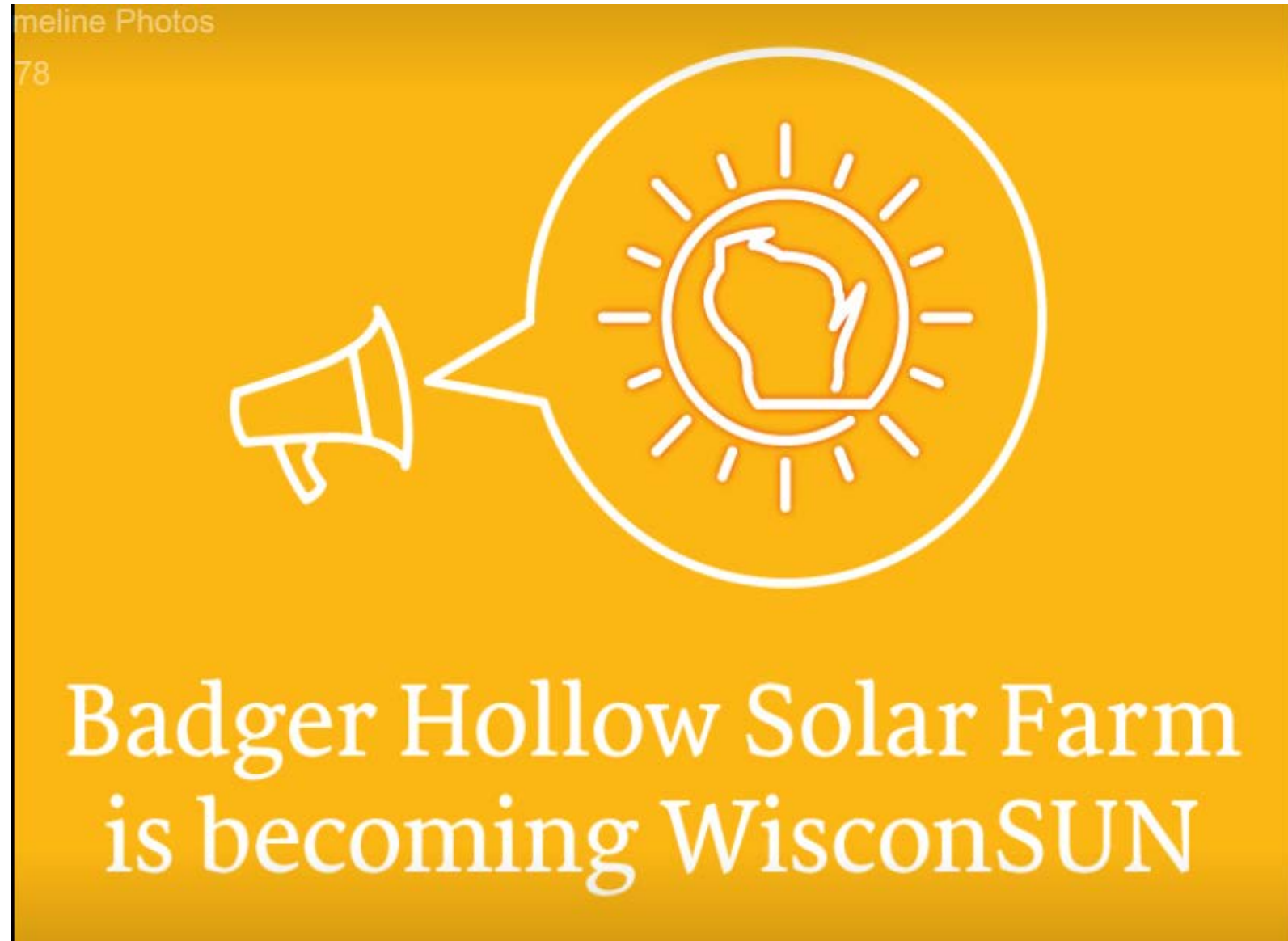
PSC Commissioner Mike Huebsch, while supporting the projects, raised concerns about how future solar projects will affect utilities' investment in

watts.

The commission denied a request by WPS and MG&E to allow cost overruns of up to 10% on the projects.

The Citizens Utility Board opposed the request.

"We were concerned about the risk to customers from these projects and wanted some kind of protection," said Tom Contant, the executive director of



**Solar farms
approved by
the PSC in 2019**

NAME	LOCATION (COUNTY)	DEVELOPER	CAPACITY (IN MW)
Two Creeks	Manitowoc	NextEra Energy	150
Badger Hollow	Iowa	Invenergy	300
Point Beach	Manitowoc	NextEra Energy	100



www.badgerstatesolar.com

THE NEXT PROJECT IN THE PSC'S PIPELINE

The PSC is about to rule on another solar farm application, the 149 MW Badger State Solar proposal in Jefferson County.

**PFAS aren't
accounted for**

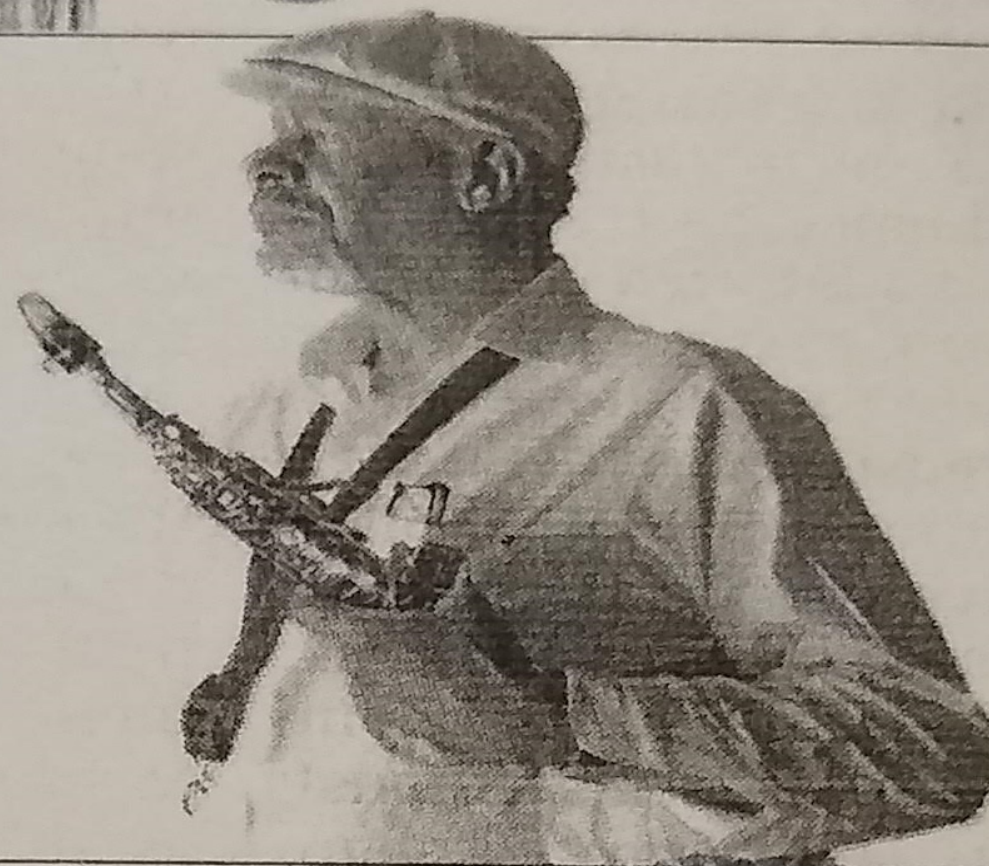
Wisconsin DNR says
the Air Force has more
to do in assessing the
environmental impact
of F-35s at Truax

LOCAL&STATE. A4

CELEBRATING DEXTER GORDON

Saxophonist Hanah Jon Taylor
joins tonight's tribute concert

WEEKEND. C1



Badgers men's hockey team routed

No. 7 UW gives up four power-play
goals in 6-1 loss at No. 12 Penn State

SPORTS. B1

It was indeed a snowy October

Two storms combined to set a snowfall
record of 8 inches for the month in Madison

LOCAL&STATE.



COLD AND CLOUDY 37 • 29 FORECAST, A10

FRIDAY, NOVEMBER 1, 2019



MADISON.COM

Alliant has big solar plans

Utility to add up to 1,000
megawatts in four years

CHRIS HUBBUCH
chubbuch@madison.com

Alliant Energy announced

a transition to clean energy
sources.

That's nearly 10 times the
state's current solar-generation
capacity and more than double
the amount expected to come
online within the next couple of

If built, it would generate
enough electricity to meet the
annual needs of about 250,000
typical Wisconsin households.

The company did not specify
how or where it would develop
the solar energy or whether it

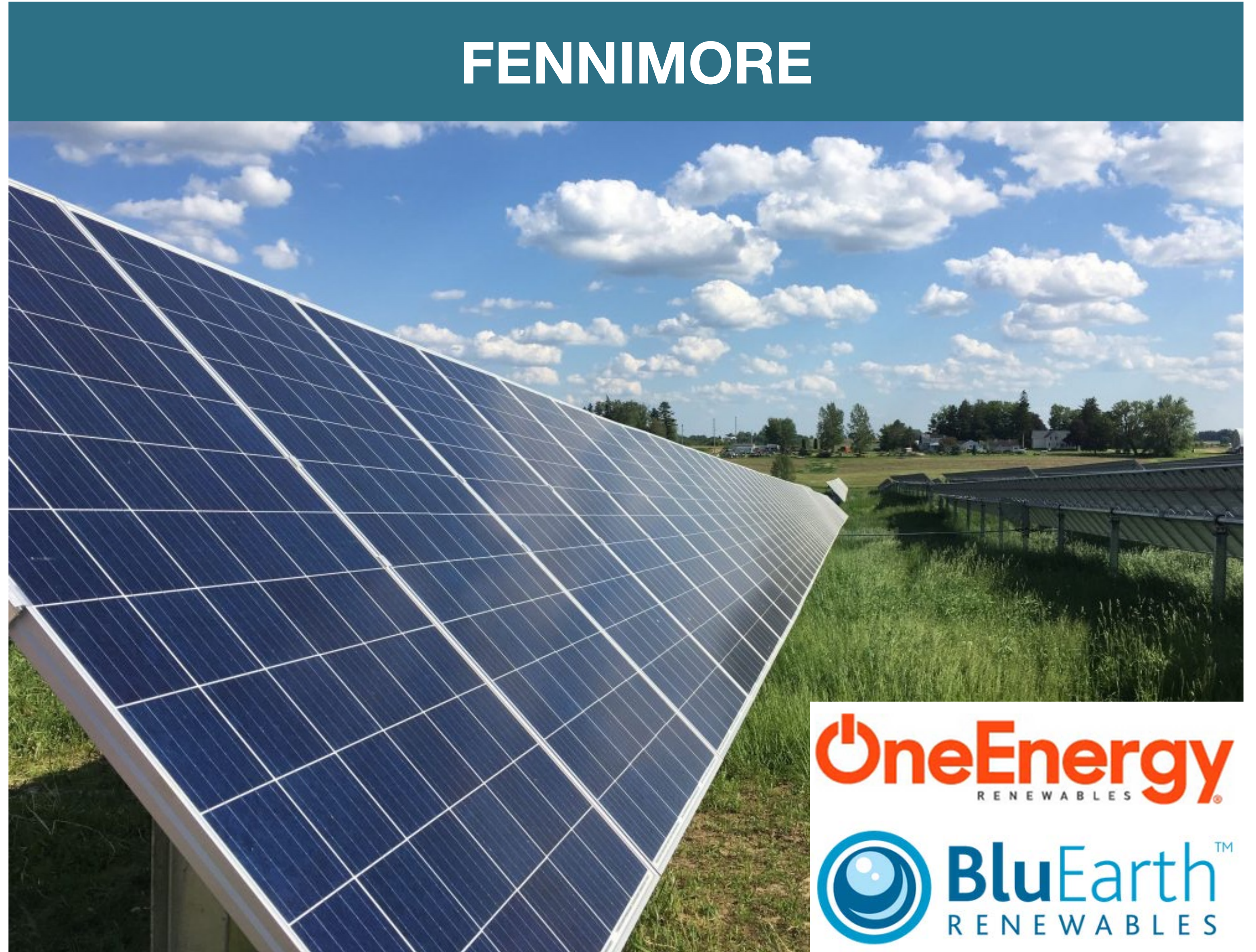
Alliant, which has pledged
to cut 80 percent of its car-
bon emissions by 2050, said
"changing economics, cus-
tomer sustainability goals and
better renewable technology"
are driving the commitment to



ARCADIA

BUTTER SOLAR
seven arrays in
western Wisconsin

17 MWAC



FENNIMORE

OneEnergy
RENEWABLES

 **BluEarth**TM
RENEWABLES



HOST UTILITIES

Argyle
Arcadia
Cashton
Cumberland
Elroy
Fennimore
New Lisbon



PARTICIPATING UTILITIES

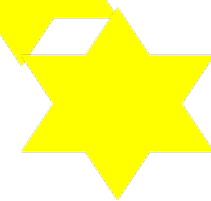
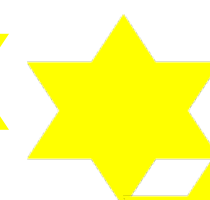
La Farge
Merillan
Viola



UMMEG



BUTTER SOLAR



WIND FARMS





QUILT BLOCK



TIM MCCOMISH • LANDOWNER

PROJECTS PERMITTED IN 2019

PROJECT NAME	LOCATION (COUNTY)	DEVELOPER	CAPACITY (MW)
Red Barn	Lafayette	Project Resources Corp.	99
Sugar River	Green	EDF Renewables	66



CALUMET RENEWABLE NATURAL GAS PROJECT • NEWTON, WI
OWNER/OPERATOR: DTE Biomass Energy

RENEWABLE NATURAL GAS

Dane County begins turning gas from landfill's trash into vehicle fuel

From the Fave 5: Business reporter Shelley K. Mesch shares top stories from 2019 series

Shelley K. Mesch | Wisconsin State Journal | Apr 26, 2019



Photo Credit: Shelley Mesch, WI State Journal



Groundbreaking • April 2018





Ore Dock Solar, Ashland



Xcel Energy®

Solar*Connect COMMUNITY

Generating Clean Energy Since July 2019

Ashland County Health & Human Service	City of Ashland	Kwik Trip, Inc.	Stanley-Boyd Area School District
Ashland County Sheriff Department	City of Bayfield	Lake Altoona Park and Dam	Thorson Funeral Home
Banbury Place	City of Eau Claire	Marshfield Medical Center-Eau Claire	Unitarian Universalist Congregation
Bayfield County	City of Washburn	Mathy Construction Company	Vernon Memorial Healthcare

COMMUNITY SOLAR



Now under construction, MGE's 5 MW solar array will set aside 3.5 MW for its Shared Solar customers.

Madison Gas & Electric's RENEWABLE ENERGY RIDER

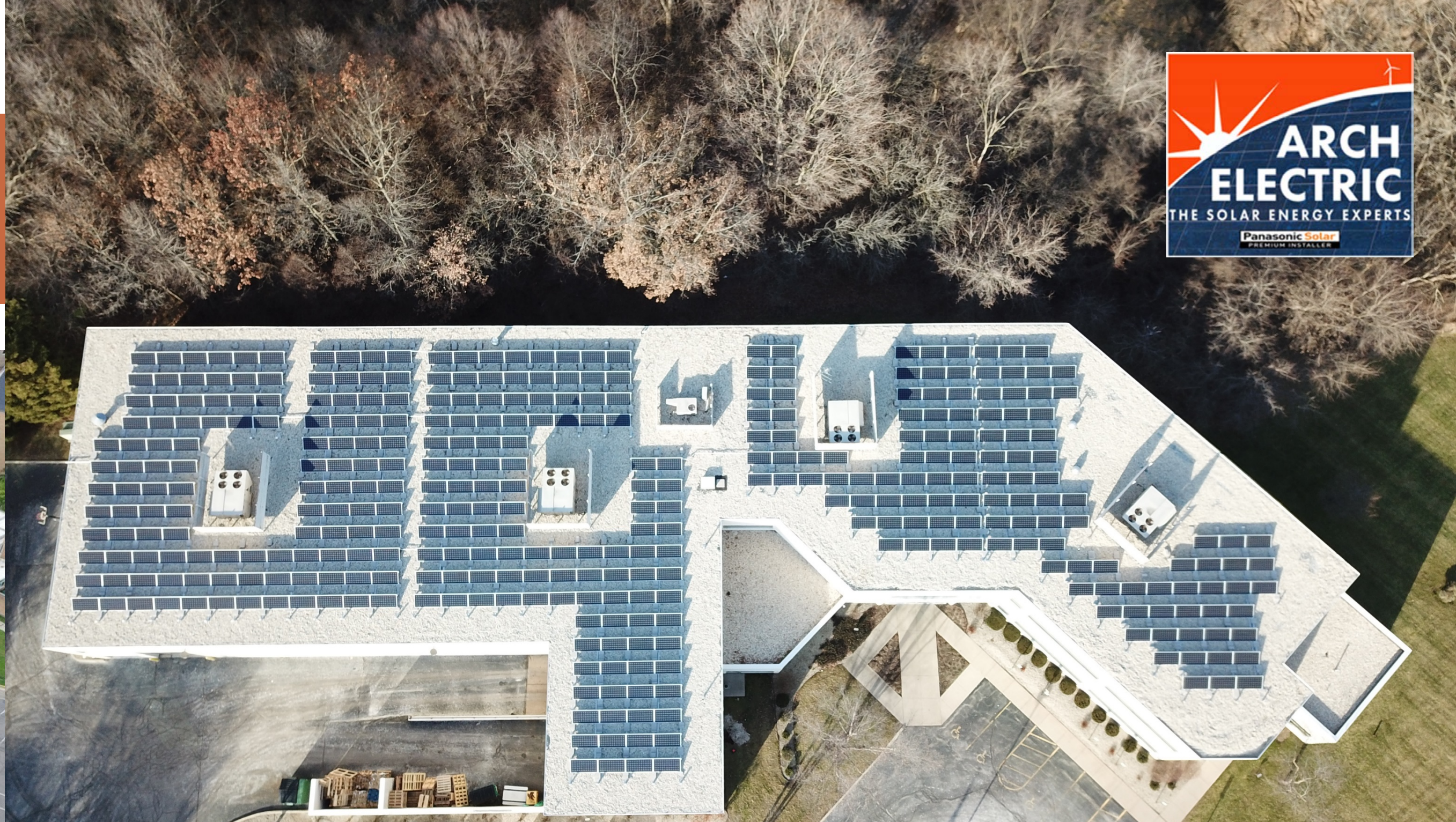


Middleton - Cross Plains Area School District
inclusive. innovative. inspiring.

CUSTOMER-SITED SOLAR



800 University Bay Drive, Madison



Engineering Specialists, Brookfield



C.D. Smith, Fond du Lac



Residential Customer, Milwaukee

2019 RESULTS (SOLAR)

	NO. OF INSTALLATIONS	INCENTIVES AWARDED	AGGREGATE CAPACITY (KW)	AVERAGE CAPACITY (KW)
Solar - residential	768	\$1,374,129	5,545	7.22
Solar - Nonresidential	135	\$2,909,690	10,149	75.18
Total	903	\$4,283,819	15,693	

Average capacity in 2018: residential **6.2** • nonresidential **48.19**

2019 RESULTS (GROUND SOURCE HEAT PUMPS)

	NO. OF INSTALLATIONS	INCENTIVES AWARDED	ANNUAL OFFSET (KWH)
GSHP (residential)	75	\$48,750	382,650
GSHP (nonresidential)	2	\$6,801	28,080
Total	77	\$55,551	410,730

SOLAR GROUP BUYS

Hanson Farms; Bloomer, WI
43.6 kW Wooden Ground Mount - RTI



Good Earth Gardens; Bayfield, WI
12.32 kW Wooden Ground Mount - RTI



WISCONSIN SOLAR GROUP BUYS - 2019

PROGRAM	CONTRACTOR	SIGNED CONTRACTS	CAPACITY (KW)
Solar Central WI	North Wind Solar	54	377
Attic Angels - Prairie Point Community	SunVest Solar	40	133
MadiSUN	Full Spectrum Solar Midwest Solar Power	38	198
Solar SE Wisconsin	Arch Electric	20	135
Grow Solar Milwaukee	Arch Electric	48	256
Heart of the North	Next Energy Solution	35	376
Chequamegon Bay	Next Energy Solution	75	508
All-time highs for the fourth year in a row!		310	1,983



Prairie Point Group Buy, Madison

SOLAR FOR GOOD



James A. Peterson Veterans Village, Racine



Bethel Horizons, Dodgeville



CE Carlson Electric

SOLAR FOR GOOD 2019 BY THE NUMBERS

No. of completed projects • 27

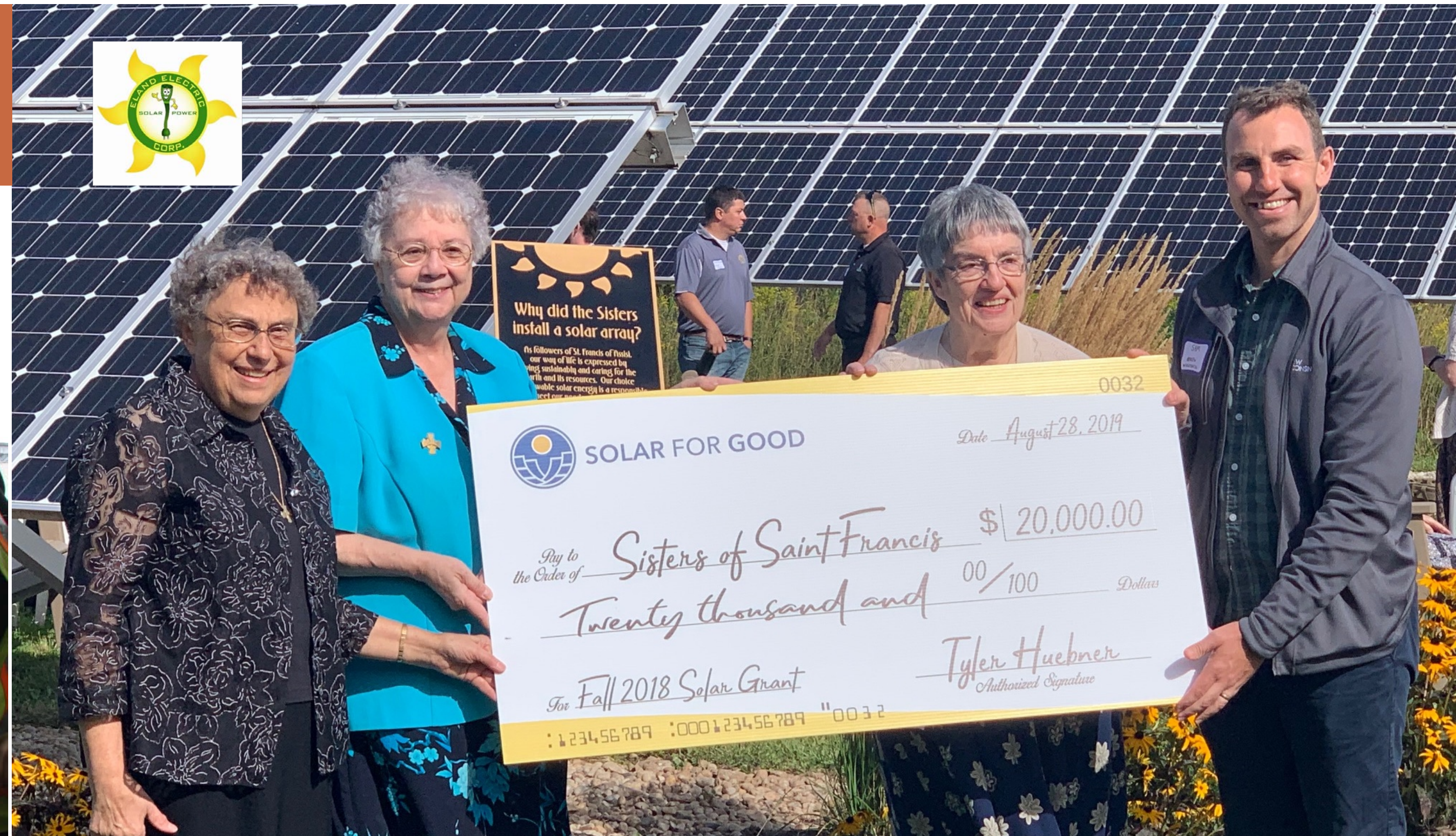
Aggregate capacity (in kW) • 1,088

Total grants awarded (\$) • \$288,466

RIBBON-CUTTINGS



Walnut Way, Milwaukee



Sisters of St. Francis, Green Bay

Legacy Solar Co-op

2019 HONOR ROLL



First Unitarian Society, Madison



Legacy Solar Co-op



EDUCATION

Merton School District



Madison Area Technical College • South Campus



FAITH COMMUNITIES

Redeemer Lutheran, Milwaukee



Tim Dilley
Director of Business Development
Carlson Electric LLC
715-245-2759
www.gosolarwi.com

Rohland Imagery

Northland Lutheran HS, Kronenwetter

FARM AND FOOD



Midwest Solar
Power LLC



Hempsation Fields, Reedsburg



Baumgartner's Cheese, Monroe

HEALTH CARE



Gundersen Health System, Tomah



Aspirus Hospital, Wausau

INSURANCE COMPANIES



FAITH
TECHNOLOGIES®

SECURA Insurance, Neenah • 600 kW



Gordon Commons, UW-Madison



Veterans Administration, Tomah



INSTITUTIONAL

LOCAL GOVERNMENT



Beaver Dam Police Department



Sun Prairie City Hall

MANUFACTURING (PROBIOTICS)

UAS Labs, Deforest



SUNVEST
SOLAR INC

Developing • Renewable • Relationships
www.sunvest.com

PUBLIC LIBRARIES



Milwaukee Central Library • 122 kW in 2019



Lawton Memorial Library, La Farge

TRANSPORTATION



Appleton International Airport



Metro Bus Barn, City of Madison

WASTEWATER TREATMENT

Greater Bayfield



City of Washburn



ELECTRIC VEHICLES



ELECTRIC VEHICLES

Future of Transportation Day



ELECTRIC VEHICLES

Volkswagen Funding - \$10M





THANK YOU!