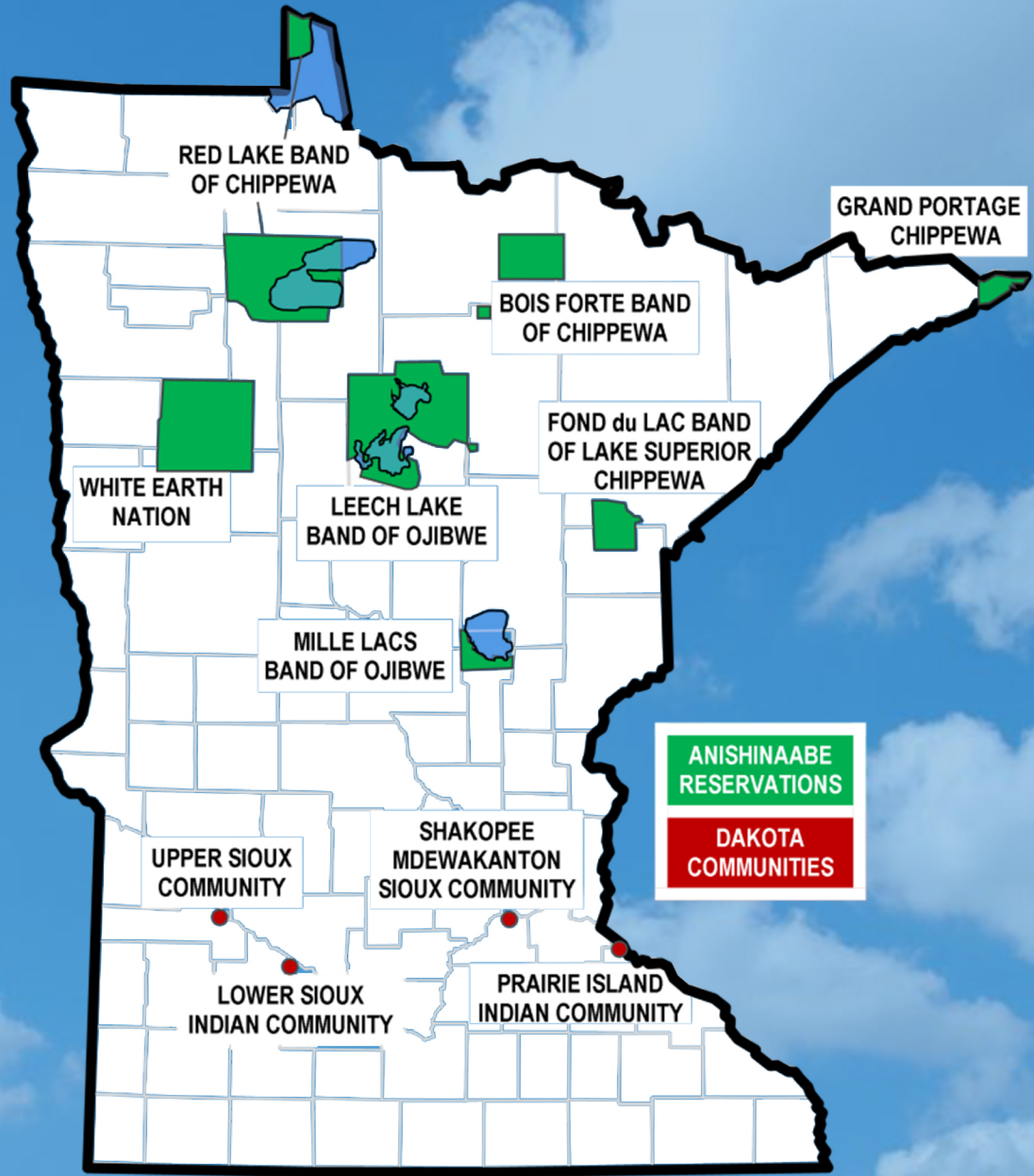


# White Earth Community Facilities Solar PV Project

DE-IE0000044

White Earth Band of Chippewa  
Indians

2018 DOE Program Review –  
December 11, 2018

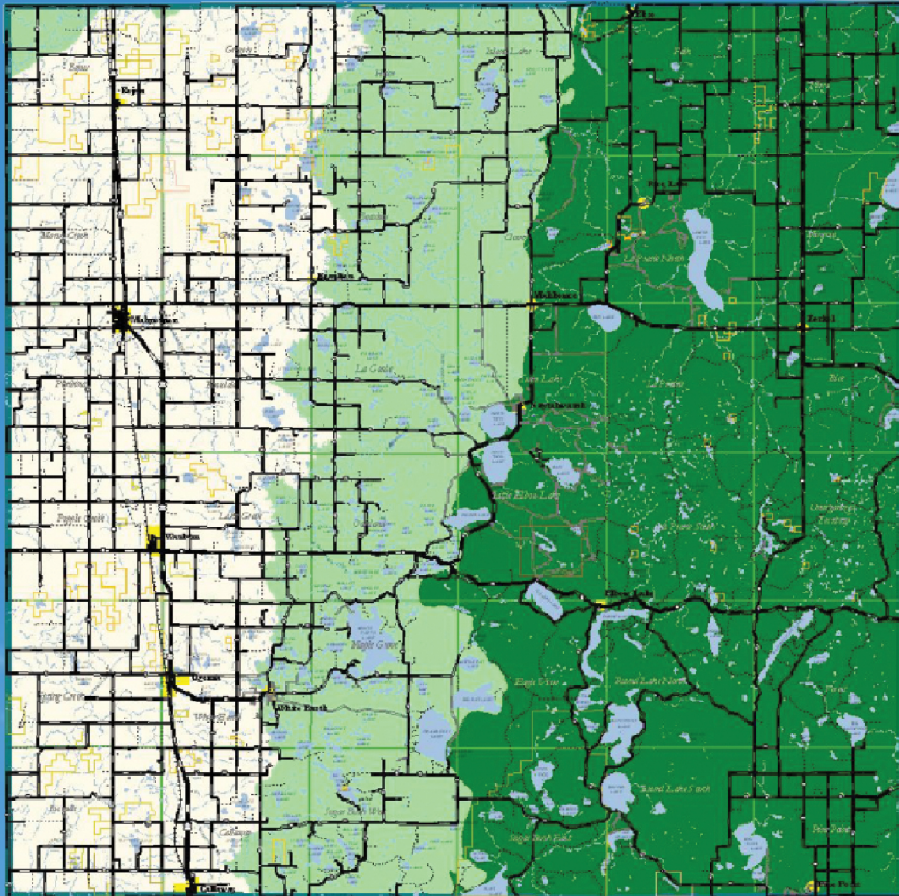


**White Earth Nation has an enrollment of nearly 21,000 members with 40% living on or near the reservation.**

## **Reservation Population:**

- 4,250 Native Americans**
- 5,312 Non-Native Americans**





# Land Area

- 1/3 ag / wetlands
- 1/3 mixed ag / forest
- 1/3 forested

# Project Overview

Installation of ground-mount solar PV at  
3 community facilities:

- Rice Lake Community Center
- Rice Lake Daycare Center
- Elbow Lake Community Center



# SolarWorld *Sunmodule*



TUV Power controlled  
Lowest measuring tolerance in industry



Every components is tested to meet  
3 times IEC requirements



Designed to withstand heavy  
Accumulations of snow and ice



Sunmodule Plus:  
Positive performance tolerance  
320 watts each -0/+5Wp



25-year linear performance warranty  
and 10-year product warranty



Glass with anti-reflective coating



**SW320 XL Monocrystalline PV Module** - The proposed solar PV System will include 38 SolarWorld 320W PV Modules

# Fronius Primo 5.0kW Solar Inverter



**Fronius Primo 5.0-1**



- The proposed system would include two Fronius 5.0kW (AC rating) inverters yielding an array AC/DC ratio of 1.21
- Integrated Datalogger and Webserver
- Integrated WIFI wireless standard 802.11 b/g/n
- Free online monitoring via Fronius Solar.web
- Wide DC input power range 4.0 - 7.8 kW per inverter
- Wide DC input voltage range: 80 - 600 V
- Wide MPPT DC Voltage Range: 270 - 480 V
- Operating Temperature -40° to 131°F
- Peak efficiency at 96.9% and CEC efficiency at 95.5%
- NEMA 4X liquid tight protection
- Conformity to UL 1741-2nd Edition Standard
- 10-year manufacturer's warranty (see warranty statement)



# Fronius Primo 10kW Solar Inverter



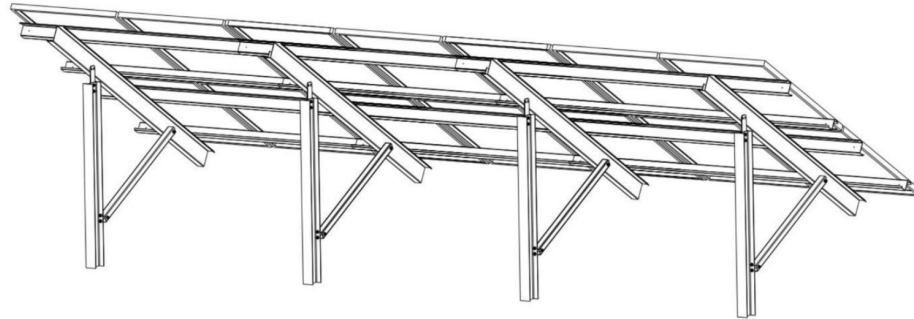
Fronius Symo 10.0-3



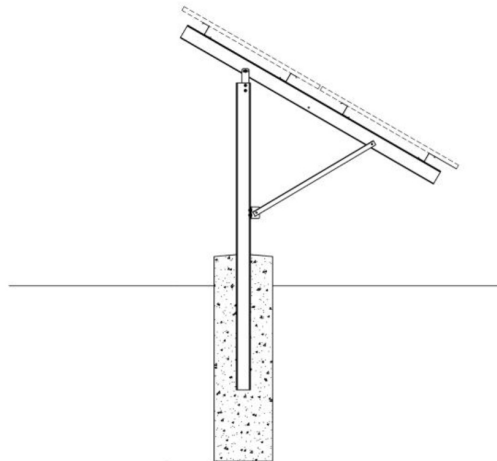
- The proposed system would include three Fronius 10.0kW (AC rating) inverters yielding an array AC/DC ratio of 1.21
- Integrated Datalogger and Webserver
- Integrated WIFI wireless standard 802.11 b/g/n
- Free online monitoring via Fronius Solar.web
- Wide DC input power range 8.0 - 13.0kW per inverter
- Wide DC input voltage range: 200 - 600 V
- Wide MPPT DC Voltage Range: 300 - 500 V
- Operating Temperature -40° to 131°F
- Peak efficiency at 97% and CEC efficiency at 96.5%
- NEMA 4X liquid tight protection
- Conformity to UL 1741-2nd Edition Standard
- 10-year manufacturer's warranty (see warranty statement)



## Rayport™ • G Eco



Rayport-G Eco Ground-Mounted Solar PV Module Racking  
(Back View)



- Designed for 72-cell PV modules, 2-high in portrait layout
- Designed for 90 mph wind load and 60 psf ground snow load
- Single Point of Connection to electrical ground system
- G90 Galvanized Steel for corrosion resistance
- Engineered Racking and Concrete Footings
- 25-year Manufacturer's Warranty
- 30° Fixed Tilt-angle

Rayport-G Eco Ground-Mounted Solar PV Module Racking  
(Side View)

# Rice Lake Community Center

- 14 year old building
- Community building, gym, offices, nutrition
- 16,400 s.f., 175,520 kWh usage
- 38 kW install
- 26.3 percent savings (36 kW)
- \$5,222 savings





HEAD START





# Aerial View of Rice Lake Community Center Proposed Solar PV Array Location



Proposed Solar PV Array location

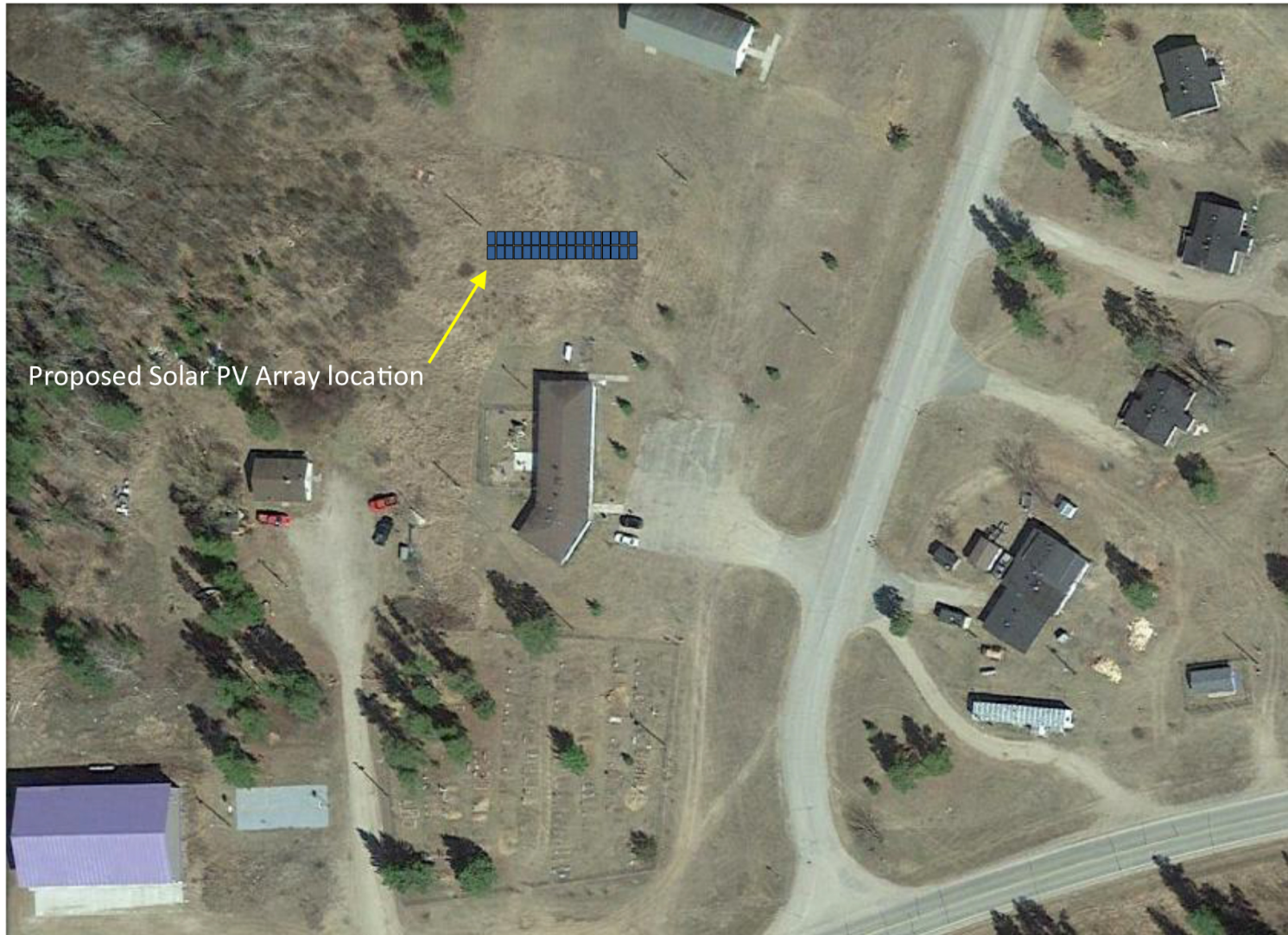
**Proposed Solar PV Array Location**

# Rice Lake Daycare Center

- 32 year old building
- Daycare, tribal program offices
- 3,520 s.f., 52,837 kWh
- 11.4 kW
- 28.85 percent (12.14 kW)
- \$1,814



# Aerial View of Rice Lake Daycare Center Proposed Solar PV Array Location



Proposed Solar PV Array location

**Proposed Solar PV Array Location**

# Elbow Lake Community Center

- 4 year old building
- Community building, elderly nutrition
- 2,464 s.f., 30,453 kWh
- 11.4 kW
- 49 percent (12.16 kW)
- \$1,628





# Aerial View of Elbow Lake Community Center Proposed Solar PV Array Location



Proposed Solar PV Array location

**Proposed Solar PV Array Location**

# Project Participants

- White Earth Economic Development
- White Earth Facilities
- Wild Rice Electric Coop
- Clearwater-Pope Electric Coop

# Project Objectives

- Reduce energy costs, increase energy security
- Add additional solar PV capacity
- Offset/reduce coal-fired electric

# Progress To Date

- Completed RFP for project engineer
- Selected project engineer
- Finalized system design/bid
- 60.8 kW AC installation completed and operational - June 2018
- Currently in annual proof of production phase



# Future Plans

- Potential multi-site community solar in collaboration with local/regional non-profit
- Training contracted local wind tech re solar installs, maintenance

# Technical Contact:

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