

# FACILITY POWER CASE STUDY

## Escanaba Lake Fishery Research Station

Northern Highland State Forest  
Vilas County, Wisconsin  
(near Woodruff)

**Contact Person:** Larry Krom, Bureau of Facilities and Lands, Wisconsin DNR

**Contact Number:** 608.588.7231

**System Supplier:** Photovoltaic Systems Co. and Northern Lights Generator, Inc.

**System Installer:** Photovoltaic Systems Co. and Northern Lights Generator, Inc.

**PV System Cost:** \$ 45,628

**Installation  
Date:** November 1998



### System Components:

<b>array</b>	2.65 kW Solarex MSX-83 (32 modules)
<b>controller</b>	Heliotrope Solpan 110
<b>batteries</b>	42 kWh L-16 Type Flooded Cells (20 batteries)
<b>inverter</b>	SW 4024 Trace Engineering
<b>generator</b>	10 kW Kohler (Model 10RY), LP gas fueled
<b>loads</b>	All building loads for research station including: well pump, lights, computers, furnace fan, and miscellaneous plug appliances.



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## General Comments:

- ⊗ Power system provides energy to a remote fisheries research station (3 miles from utility power).
- ⊗ Owned and operated by the Wisconsin Department of Natural Resources.
- ⊗ The cost of the line extension was estimated in 1996 to be at least \$45,000, plus \$3,600 in annual service charges.
- ⊗ This project received a Federal Grant from the U.S. DOE in collaboration with the Wisconsin Energy Bureau.
- ⊗ The research station is open all year, 7 days per week, from approximately 8:00 a.m. to 10:00 p.m.
- ⊗ Estimated maximum daily energy use: 7 kWh summer load, 12 kWh winter load.
- ⊗ PV supplies nearly 100% of energy during the summer months, generator supplements PV battery charging during winter months.
- ⊗ The generator operation is automatic.
- ⊗ Array support was custom fabricated to increase height of modules for better solar exposure at a wooded site.
- ⊗ No down time since installation.
- ⊗ Routine maintenance is performed by station personnel.
- ⊗ Interactive system performance display planned.



Inverter, Charge Controller/Circuit Breakers, and Transfer Switch



Battery Enclosure