

# VERMONT INSTITUTE OF NATURAL SCIENCE

## CASE STUDY



### ABOUT VINS

Headquartered in Quechee, VT, on 47 acres of forest, meadow, and rolling hills, Vermont Institute of Natural Science (VINS) features 17 state-of-the-art raptor enclosures that house hawks, eagles, falcons, owls, and other birds of prey.

### PROJECT SUMMARY

The Vermont Institute of Natural Science had wrestled with the question “How can we get VINS to go solar?” for years figuring out how a nonprofit organization could raise the capital required to fund the purchase of a solar electric system.

Enter a 2018 visit to a Woodstock Rotary Club meeting where Rattigan heard Norwich Solar Technologies give a presentation highlighting our nonprofit PV projects. Through a Solar Service Agreement (SSA), where nonprofits and businesses with limited capital simply purchase discounted net metering credits produced by solar power without buying the solar array, NST revealed the path for VINS to reap the benefits of renewable energy without the hurdle of a high upfront cost.

VINS now has an 86-kW DC system producing 111,000 kilowatt-hours of electricity per year at their Nature Center in Quechee, Vermont, and plan to use the yearly savings on electricity costs to sustain their mission of providing environmental education, research, and avian rehabilitation.



15 Railroad Row, White River Junction, VT 05001  
(802) 281-3213 [www.norwichsolar.com](http://www.norwichsolar.com) [info@norwichsolar.com](mailto:info@norwichsolar.com)



## SYSTEM SPECIFICATIONS

### SYSTEM CAPACITY

- 86 kW-DC

### TYPE OF SYSTEM

- Roof & Ground Mounted

### PRODUCTS

- REC Solar Modules
- Chint Inverters

### COMMISSIONING DATE

December 2018 & February 2019

### LOCATION

- Quechee, Vermont





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### ENVIRONMENTAL & COST SAVINGS AT-A-GLANCE



Money spent on  
Solar Array:  
**\$0**



Estimated Savings Over  
the First 25 Years:  
**\$85,000**



Estimated CO<sub>2</sub>  
Offset Saved:  
**86 TONS**



Equivalent Trees  
Planted:  
**4,000**

*\* Estimate based on marginal emission rates for the New England regional grid as of 2011 (the most recent data available).*

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[NORWICHSOLAR.COM](http://NORWICHSOLAR.COM)

### NORWICH SOLAR TECHNOLOGIES SCOPE

NST provided guidance to VINS in choosing the most appropriate location for the PV arrays, which are on the roof of one building and in a remote parking lot at their site.

The Project Team completed all design and engineering of the solar system, including obtaining all permits, inspections, review, and approvals from applicable regulatory agencies. We satisfied all interconnection requirements, procure all materials and components and completed commissioning of all equipment.

### PRODUCTION STATISTICS

Without any capital expense or upfront cost, VINS is now expected to save over \$3,000 in year one, and more than \$85,000 over the next 25 years. In addition, the VINS solar array will offset nearly 86 tons of CO<sub>2</sub>, the equivalent of 191,000 miles not driven or 43 tons of coal not burned every year.

### ABOUT NORWICH SOLAR TECHNOLOGIES

Norwich Solar Technologies specializes in end-to-end solar electric services including: Development, Design, Engineering, Procurement, and Construction, Power Purchase Agreements, Structured Financial Solutions and Operations and Maintenance. Clients include Educational Institutions, Utilities, Municipalities, Commercial and Industrial Enterprises, Farms, and Small Businesses.



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