

# Verona Solar

Kate Millar  
Jeff Veazie  
Marguerite Wells  
Brad Plunkett

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# World's Leading Privately Held Renewable Energy Company

## RENEWABLE PROJECT DEVELOPMENT CORE BUSINESS

**Invenergy**  
Renewables

### Our Foundation

Developing and operating  
the technologies of the  
renewable energy future



### Wind

105 projects  
16,695 megawatts



### Solar

43 projects  
5,061 megawatts



### Storage

16 projects  
871 megawatt hours  
300 megawatts



### Transmission

1,500+ miles  
operating or under  
contract

## Our Invenergy Impact



### 10% veterans

Percent of Invenergy's U.S.-based  
workforce who are military veterans  
or reservists



### \$1.2 million

Given to different cause-based  
organizations in 2019, focusing  
on veterans, education,  
emergency services &  
environmental stewardship

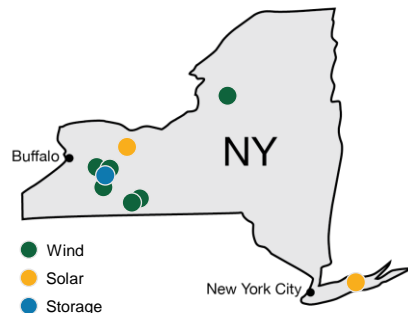


### \$216 million

Total 2019 local economic  
investment in wages & benefits,  
lease payments, and state &  
local taxes

# Invenergy in New York

9 Projects | 893 Megawatts



## 6 wind projects

totaling 668 megawatts



## 2 solar projects

totaling 205 megawatts



## 1 storage project

totaling 20 megawatts



## 261,000 American homes

powered through electricity generated



## 23 employees

including our New York regional office (7) and operations & maintenance full-time staff (16)



## 6 New York counties

including Allegany, Lewis, Livingston, Steuben, Suffolk and Wyoming Counties



## Annual donations

to local education, emergency & veteran services, and environmental stewardship



**\$2.5 million**

invested annually in local taxes



**\$3.9 million**

in annual landowner payments



**\$1.6 million**

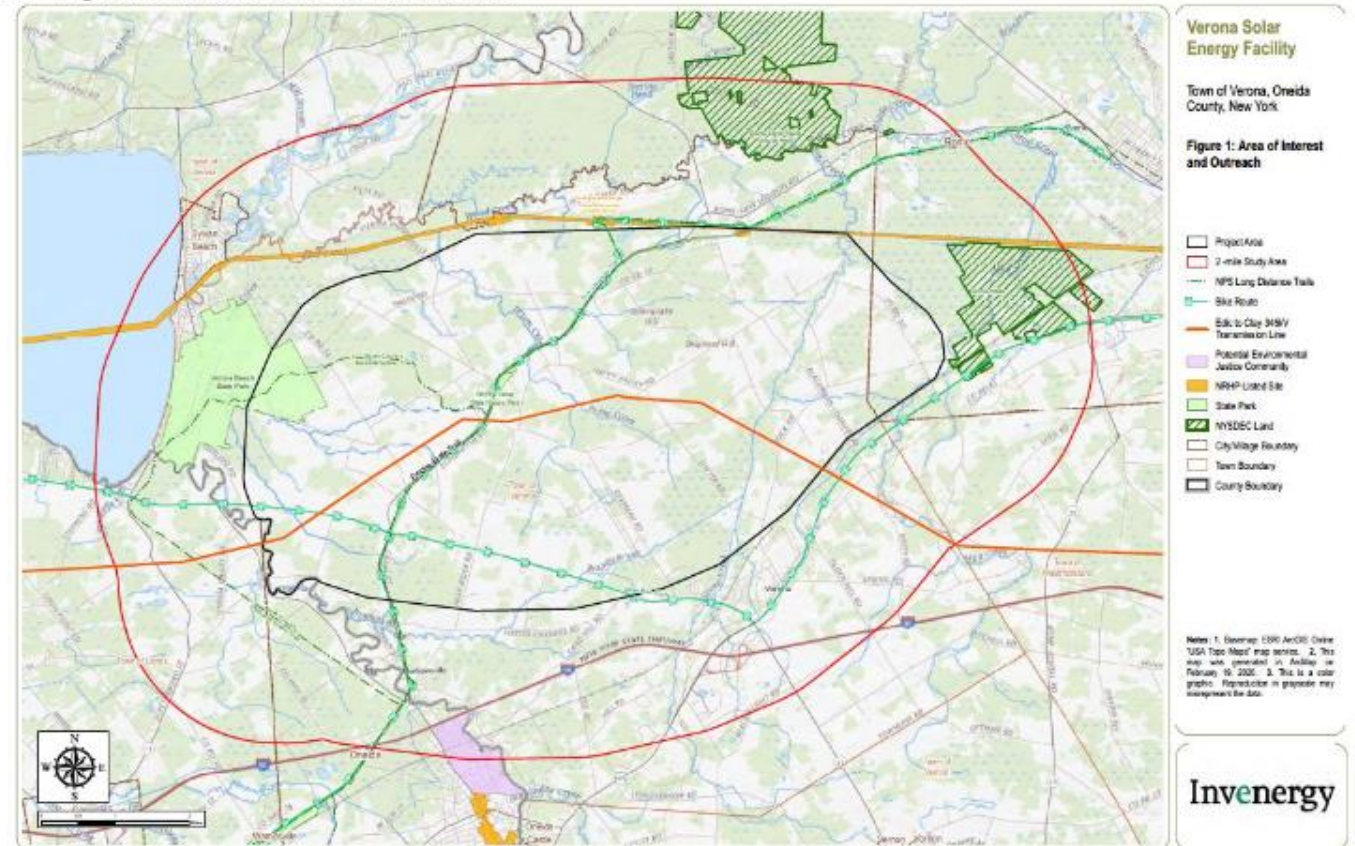
paid in annual wages and benefits



# About **Verona Solar**

- **250 megawatts (MW)**
  - Town of Verona and City of Rome in Oneida County, NY
  - 77,000 homes powered annually
- **Community Benefits**
  - \$2.3 million in annual community revenue
    - Host Community Benefit Agreement
    - Property Tax Agreements
    - Local Landowner Payments
    - Payroll for operations & maintenance, vegetation management
  - \$500/MW paid annually in energy bill discounts to area residents for 10 yrs
  - 400 construction jobs – est. 1-2 yrs
  - 2-5 permanent O&M jobs
  - Environmental benefits
  - Decommissioning plan
- **Project design features**
  - Installed on driven piles
  - Panels rotate on trackers
  - Safe, recyclable components
  - Potential for Co-Located Battery Storage

7.2 Figure 2: Areas of Interest and Outreach



# Permitting & Project Studies

# Project Studies & Surveys

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**Prior to a formal application submittal, Invenergy will commission numerous studies & surveys including:**

- Wildlife/Bird Surveys
- Wetland Delineations
- Noise & Visual Impact Assessments
- Cultural Studies and Consultation with SHPO
- Transportation Studies
- Interconnection Studies
- Geotechnical Surveys
- Site Layout and Detailed engineering

# 94-c Process & Timeline

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Section 94-c (replaces Article 10) is NYS's process for the siting of large-scale renewable energy projects

- Office of Renewable Energy Siting (ORES)
- Uniform permitting process and standard conditions
- Municipal involvement in 94-C process
- ORES and DEC identify site-specific environmental impacts and provide site specific permit conditions
- Public hearings and comment periods



# Community Involvement

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Join our stakeholder list:

- Email: [kwarnar@invenergy.com](mailto:kwarnar@invenergy.com)
- Call: 607-391-2654
- Fill out our contact form: <https://veronasolar.invenergy.com/contact>
- Community Meeting will be held at least 60 days prior to application submittal to ORES
- After draft permit conditions are released there will be a 60 day public comment period along with Public Comment Hearing
- Local Agency Funding
  - An amount equal to \$1,000/MW of facility capacity will be paid into a local agency account managed by the Office of Renewable Energy Siting
  - Intervenor funding will be made available to a host municipality, political subdivision, or local community members per regulations established by the Office.
  - Local Agencies & Potential Community Intervenors are eligible for funds
  - Funding can be used by eligible entities for participation in public comment period or adjudicatory hearing

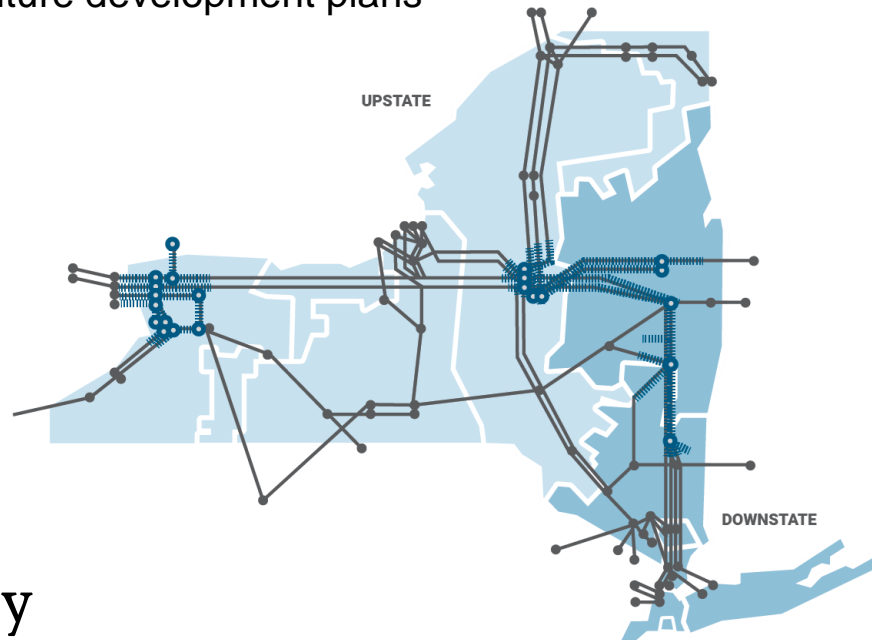


# Solar Siting & Agriculture

# Solar Site Selection

- Site Considerations

- Proximity to transmission lines with capacity
- Topography
- Land use (forested, agricultural, etc)
- Presence of wetlands, flood
- Viewshed
- Future development plans
- Local zoning and receptivity
- Landowners interested in leasing



Years of consultation and studies to understand the potential impacts and to design a project that maximizes local benefits while protecting resources

# Solar + Agriculture

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- Solar siting tends to occur on previously cleared, flat land which is often agricultural
- Solar leases provide long-term, stable revenues to farmers
- Portions of ag land converted temporarily to solar can allow soils to regenerate, decrease runoff, increase biodiversity and provide habitat. Projects follow NYSDAM decommissioning standards.
- Solar & agricultural co-location being adopted all over the world
- Co-location benefits NYS food production and energy goals

## Four Star Sponsor

*First sustainable power developer & operator to sponsor National FFA  
(Future Farmers of America formerly)*



# Solar Grazing with Sheep

## Contract or custom grazing:

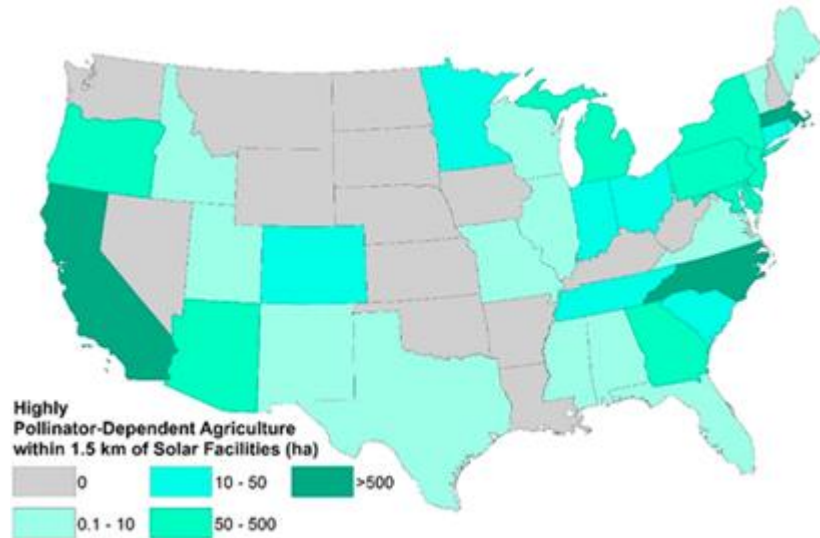
- Solar operators are increasingly using sheep to maintain the vegetation under solar arrays
- Grazing contracts offer a unique opportunity for area farmers to diversify
- Lamb is currently imported from Australia and New Zealand
- Planning for solar grazing can mean design consideration for things like fencing, water, and seed mixes.
- Reduces fossil fuel use associated with mowing and weed whacking
- Overall in line with encouraging biodiversity on site, enhancing soil health, and strengthening connection between solar and agriculture beyond lease payments - keeping connection to the land





# Pollinators

Properly planned solar sites can provide habitat and forage for pollinators (esp. insects, bugs, small mammals) that increase agricultural yields, and health of bee populations in the surrounding area



Examining the Potential for Agricultural Benefits from Pollinator Habitat at Solar Facilities in the United States. Environmental Science & Technology, 2018

The availability of managed pollinators in agriculture has been shown to increase yields – including a 18%-40% increase of soybeans

About 23% of agricultural production in the US, including half of the primary crop types, comes from pollinator-dependent crops.

Approximately 1 out of every 3 bites of food we take is pollinator-dependent!



# Solar Grazing In Action

- Invenergy's La Jacinta Solar



65 MW  
Operating since 2015  
South America



# Decommissioning

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## After the operational life of the project

- The project owner is responsible for the restoration of the land.
- The removal of the facilities is the responsibility of the project owner. There will be a decommissioning bond in place to ensure the funds are available for the removal of the facilities.
- NYS Department of Agriculture & Markets Guidelines for Solar

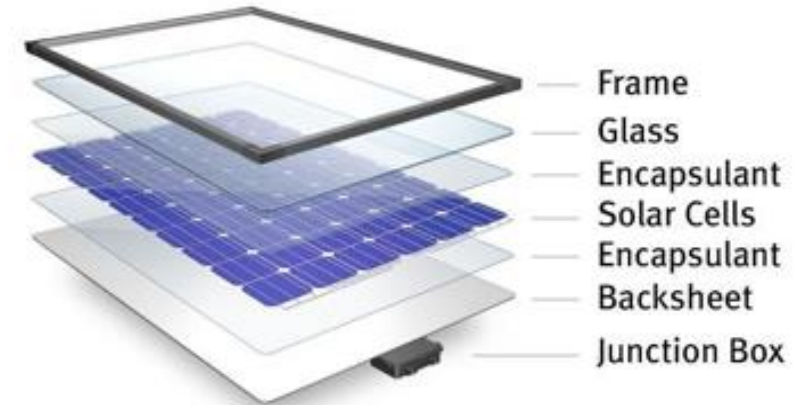


# Project Engineering



# Bi-Facial Solar Modules

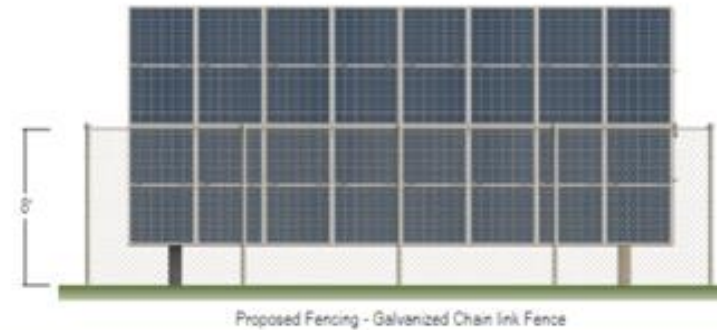
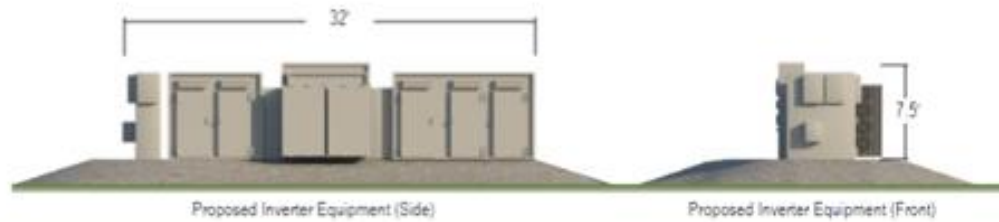
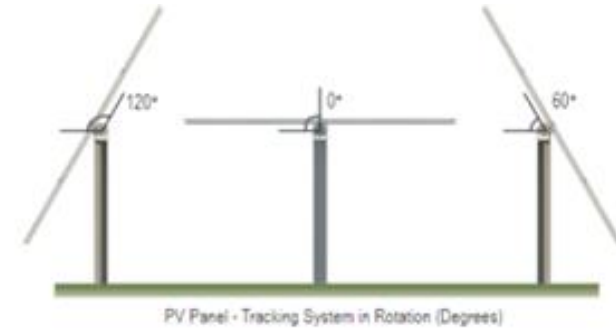
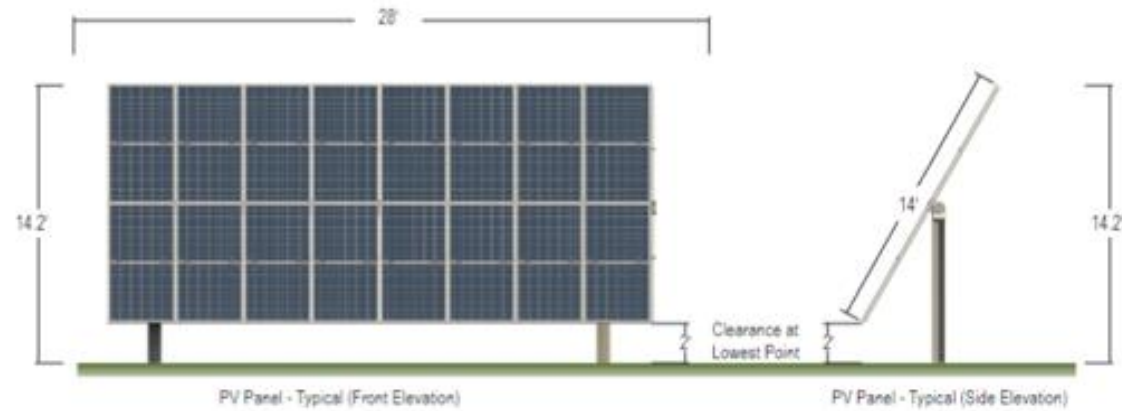
- Innovative design; proven technology.
- Solar panels are made of glass, aluminum, copper and other common materials.
- Solar panels are safe to touch, attach to your home or install in your neighborhood. Solar panels have been attached to houses, hospitals and airports for decades.
- While there are different kinds of solar panels, the most common are made of silica – the second most abundant element on earth after oxygen. The faces of silica panels are similar in substance to standard household glass.
- Verona Solar will utilize panels that will pass the EPA's Toxicity Characteristic Leaching Procedure (TCLP) test and do not contain heavy metals.



Built from durable materials, **our certified solar panels** have a lifespan of more than 30 years.



## ( PV Panel | Typical Equipment )



# Single-Axis Tracking System

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- Follows the sun throughout the day to harness energy at the optimal angle.
- The Project will likely utilize a '1 in portrait' configuration.
- Accommodates variation in ground cover plant species and allows for additional agricultural features.
- Total height of the panels and racking system will not exceed 20 feet (anticipate 15 feet at the most extreme tracking position).





# Other Components

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The Project will also include associated support facilities such as access roads, meteorological stations, buried electrical collection lines, inverters, and a collection substation.

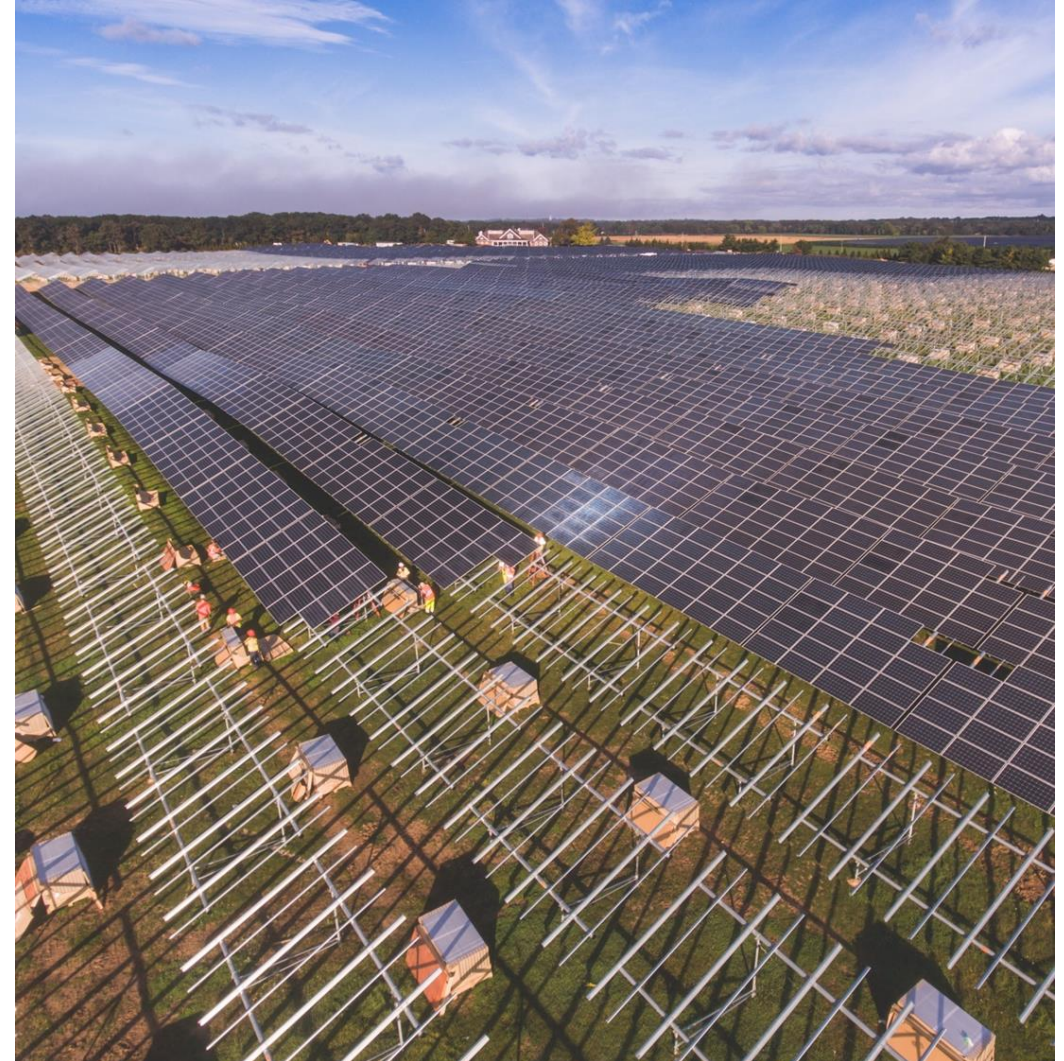




# Construction Overview

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- The project will take approximately 12-24 months to construct.
- Construction will begin with any clearing and grading
- Steel piles will be driven into the ground to support the racking systems.
- Panels will be hung on the racking system. An inverter will be installed per block of panels to convert the electricity from DC to AC.
- Electricity will flow to the new project substation where it will be stepped up to be put onto the grid at the interconnection substation.
- Invenergy works with local governments to restore roads to same or better condition as pre-construction.



# Safety & Security

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- Verona Solar will develop an Emergency Response Plan in coordination with local first responders.
- We will provide on site training during construction and once per year during operations.
- Invenergy Services employees are required to undergo 48 hours of safety training annually.
- Measures to prevent unauthorized site entry and unsafe practices will be implemented during the construction and operation of the facility.



# Question & Answer

# Get in touch!

Project Website: <https://veronasolar.invenenergy.com/>

Invenenergy: <https://invenenergy.com/>

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## Project Manager

Kate Millar

[Kmillar@invenenergy.com](mailto:Kmillar@invenenergy.com)

607-882-1225



Invenergy

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sustainable world.**

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