

GEO

**Green Energy Ohio is a
nonprofit organization
dedicated to promoting
environmentally and
economically sustainable
energy policies and
practices in Ohio**

Ohio Solar Applications

**Bill Spratley, Executive Director
Green Energy Ohio**

Green Home Workshop

4-H Center

Ohio State University

May 4, 2016

www.GreenEnergyOhio.org



Ohio Solar Applications

Solar Electric – Photovoltaic

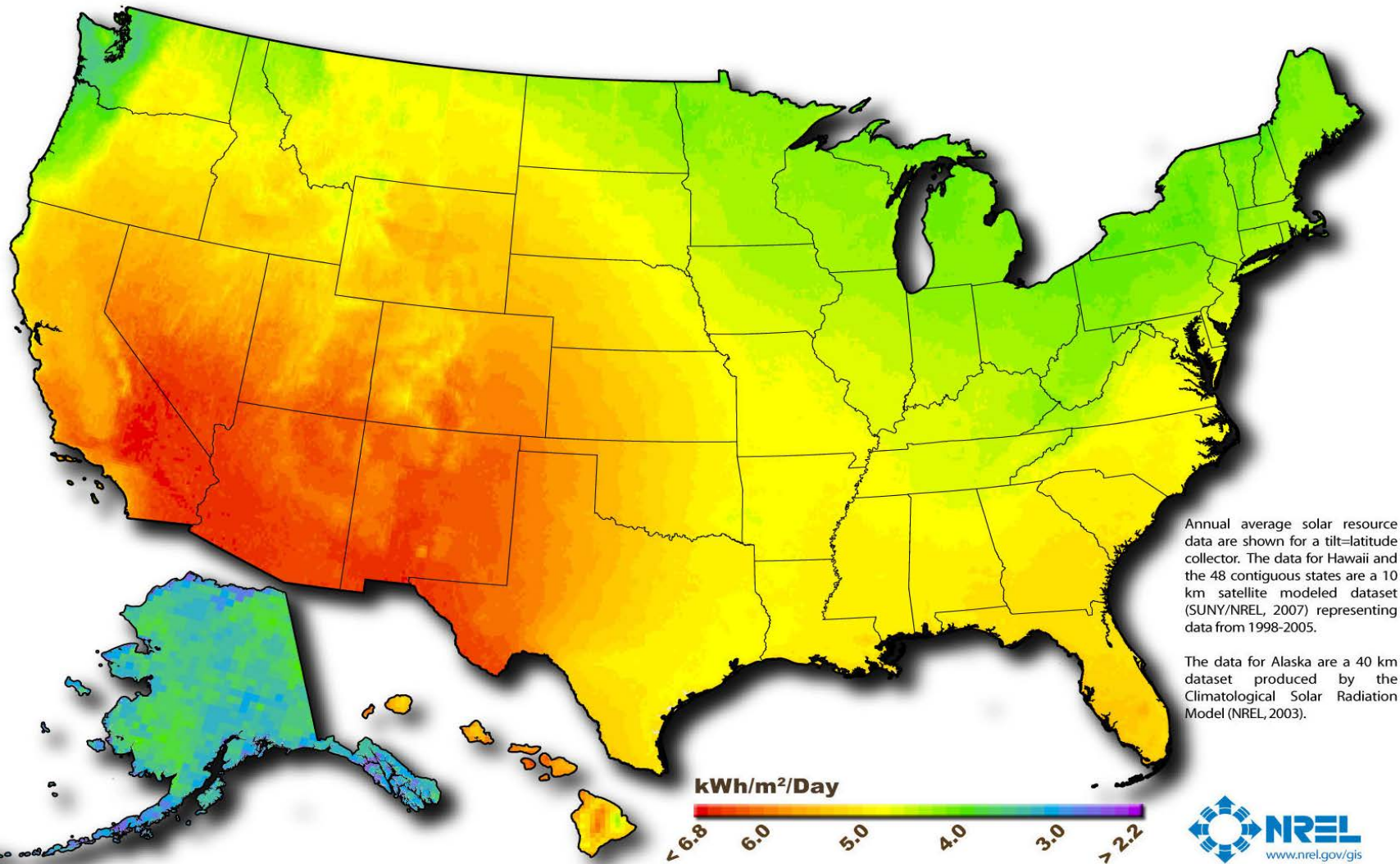
Statewide Overview

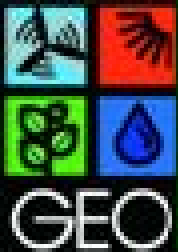
Solar Electric for Green Homes

GEO Tour Across Ohio June 3, 4&5, 2016

Public Policy Issues Impacting Green Homes

U.S. Photovoltaic Solar Resource





Ohio's Solar Potential

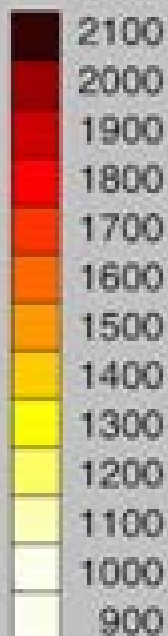
Resource

"There is a form of renewable energy in every county of Ohio."

- Biomass & Renewable Energy Taskforce, 2004

Solar Energy

kWh/kW-yr.



Even with less solar energy resource, Germany has much more energy production than Ohio.

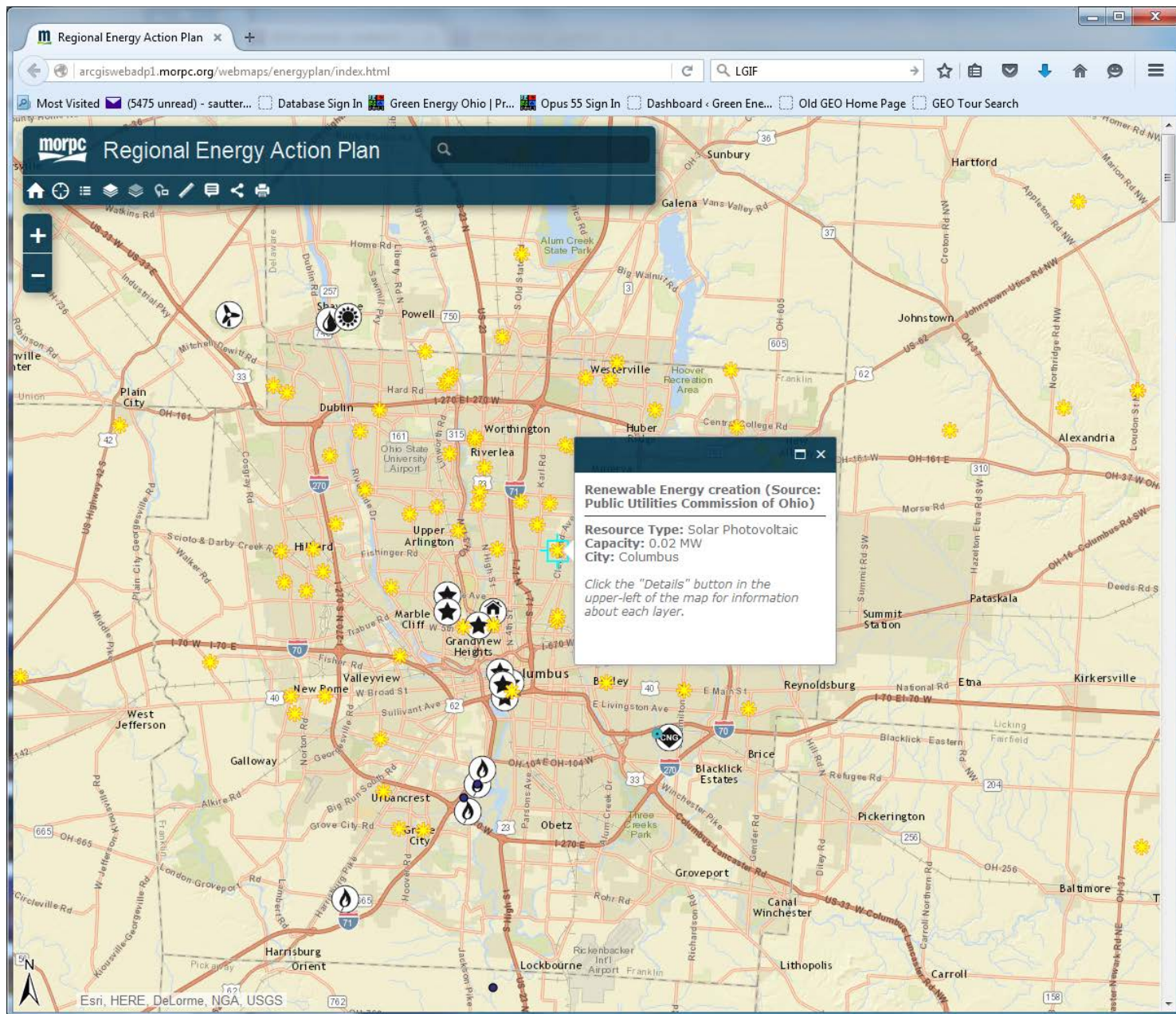


State Wide Data Sources for Renewable Energy Systems

- GEO Tour Database
- PUCO
 - Certified Renewable Energy Resource Generating Facility
- Ohio Renewable Energy Installers
 - Individual queries

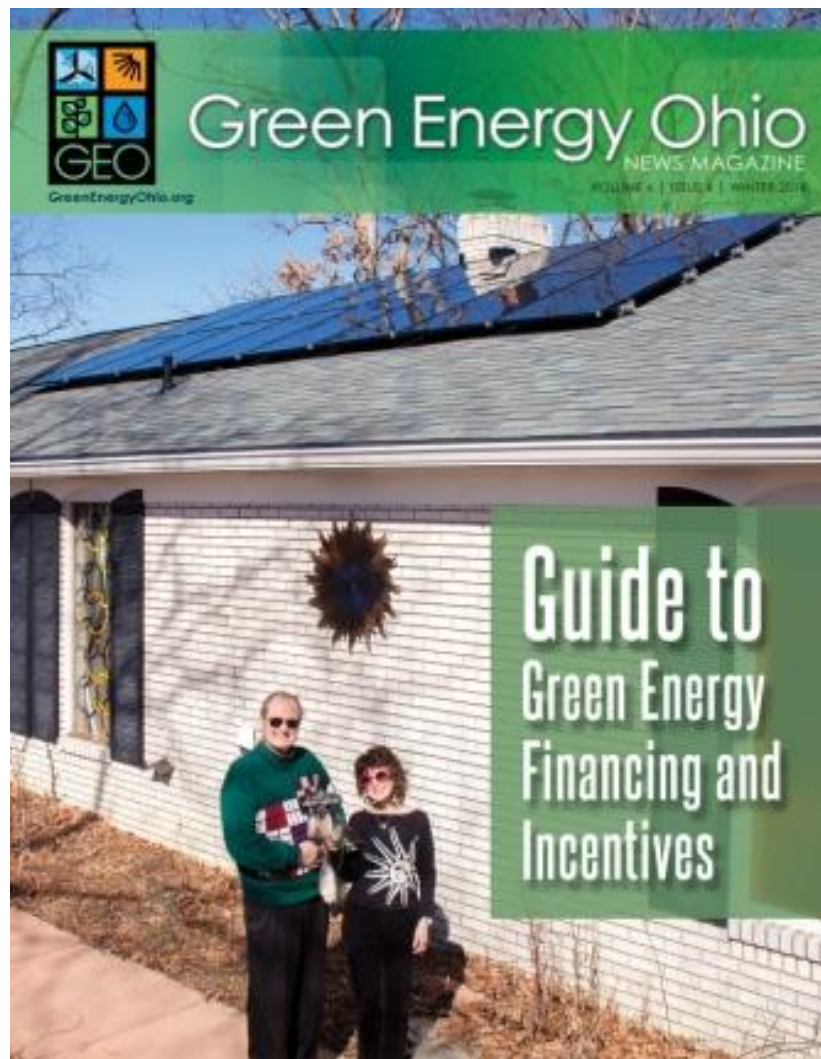
GEO Tour Sites October 2,3 & 4 2015







Green Energy Ohio News Magazine Summer 2014





If a tree falls in a suburb...





Leak Proof Racking Attached to Roof





**Photovoltaic Panels
Convert Light into
Electricity**

**These SolarWorld 255
Watt Panels are 3 X 5
feet weighing 40
pounds**

**16 Monocrystalline
Black Panels were fitted
with 16 Enphase Energy
Microinverters**





Panels Fixed & Wired on Racks





Panels Fixed & Wired on Racks





All-American Roof-Mounted Solar Array





Surviving the Polar Vortex





All-American Roof-Mounted Solar Array



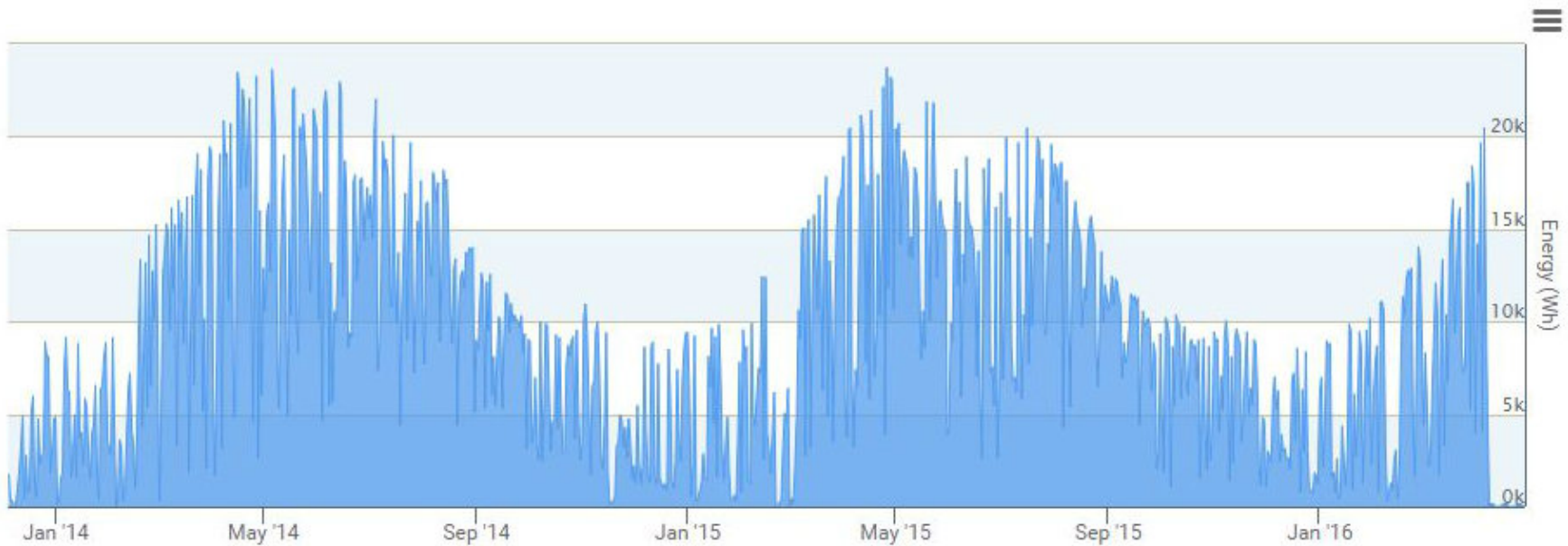


Revenue Grade Meter Measures Solar





Electrical Energy Produced Dec 4 2013 to April 8 2016



Spratley Array Data On-Line at: <http://bit.ly/1VWUa0U>



Incentive Program(s) Utilized:

30% Federal Income Tax Credit and Sale of Solar Renewable Energy Credits (SRECs)
yielded solar system installed at \$3.85 per Watt

Estimated Annual Production:

3,689 kWh estimated annual production.

From installation on Dec. 4, 2013 to Sept. 4, 2014 system produced 3 MegaWatt
Hours or 3,000 KiloWatt Hours with peak day of May 6, 2013 at 23.6 kWh

Over 25 years, the system is estimated to offer 92,223 kWh of electricity or 31% of
estimated future usage.

Estimated Utility Savings:

\$543 First Year Electric Bill Savings Estimate with annual kWh offset estimated at
31% of electricity usage

Net savings over 25 years including bill savings, SRECs, maintenance &
microinverter replacement (after-tax) estimated at \$22,495.

Simple Payback estimated 14 years

Pre-Tax Compound Annual Rate of Return (IRR) over 25 years 12%

Estimated Initial Increase in Property Value \$10,859

Maximum resale value increase occurs at year 11 at value of \$14,898