



One of the Largest Solar Power Plants in the Midwest

Safeguarding investments and performance in the largest solar power plant in Michigan with top-quality components and construction

The 58 megawatt (MW) direct current solar system situated on approximately 360 acres southwest of Lapeer, Michigan is one of the largest solar plants in the entire Midwest. It is also the largest in Michigan. From a state that reported a total solar capacity of 16 MW in 2016, that is quite an accomplishment. Here's the backstory. In late 2016, Michigan legislators expanded the state's Renewable Portfolio Standard from 10 to 15%. Michigan is expected to install approximately 537 MW of solar over the next 5 years. As the levelized cost of solar continues to fall in comparison to conventional energy, it's a smart move for local utilities to leverage economies of scale and construct larger-sized solar power projects.

The utility-owned Lapeer project is comprised of 2 sites, 34 MW and 24 MW. The solar electric plant generates enough electricity to power almost 11,000 households per year and offsets over 16,000 tons of carbon emissions annually. That is equivalent to the amount a forest of over 80,000 trees would offset

As an investor-owned utility serving millions of customers, the organization makes careful decisions. They selected Inovateus Solar, a midwestern-based, leading solar project engineering, construction, and procurement firm, to manage the project. Inovateus Solar has grown its company with a highly-experienced leadership team ensuring professional execution in every project they complete. As of 2016, Inovateus has installed solar or supplied quality solar products to countries in North America, Europe and Asia-Pac. Inovateus was pleased to have the opportunity to work on this major renewable energy project.

Construction on the Lapeer projects began in May of 2016 and lasted for 10 months. Sited in "The Thumb" of Michigan's Lower Peninsula, the project location had previously been used for crop production. [J. Ranck Electric](#), a national electrical contractor, lead the installation and worked closely with [Clark Dietz](#), a consulting engineering firm to complete the design. The mild rolling hills of the site presented some unique technical challenges. There were opposing slopes and grades in excess of 10° and like many projects - there were definitive milestones and an aggressive project schedule to be met. J. Ranck's team have a well-established track record of success with over 184 MW of solar installed. 25 of the projects in their portfolio were performed for this particular utility company. The J. Ranck crew concentrated attention on the design and layout through the pre-construction phases to ensure they effectively addressed the terrain variances and optimized land use.

Inovateus is a quality-driven organization and that permeates through their operations. Their construction partners deliver the same high-quality standard. The components selected for the Lapeer project were: [Canadian Solar MaxPower](#) 315 and 320 W solar modules. The 72 cell, large format, polycrystalline modules have a 16.94% efficiency rating. The inverters installed are [Schneider Electric Conext Core XC](#) central inverters. The XC series has peak efficiencies of 98.9%. [Solar FlexRack's fixed tilt, G3-X](#) ground mounting handled the racking and services support. Designed with generous construction tolerances, the highly adjustable solution delivered the robust terrain adaptability needed.

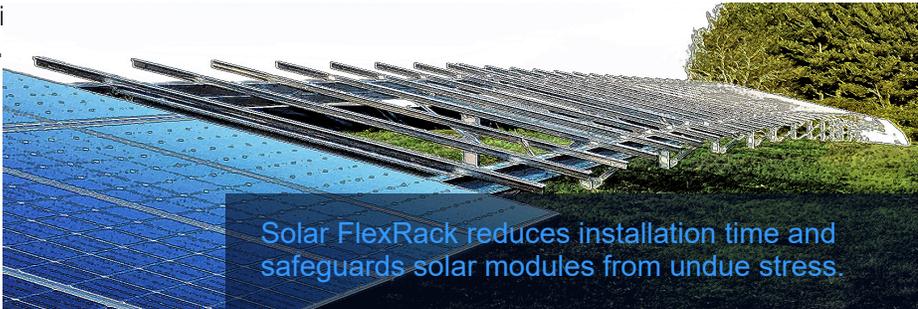
Solar FlexRack's mounting solution has additional value for solar project installations. G3-X's unique design allows modules to easily slide into alignment during installation without prying or applying pressure that could lead to module damage such as frame breakage, microcracking, di cell string ribbons or other types of module failure. The proprietary design ensures that all loads flow from the modules down through the racking system and into the ground - without placing secondary stresses into the modules or depending on the modules to brace the system. Hence Solar FlexRack's mounting solution safeguards the solar project's most important power generation



The Lapeer projects are located off of DeMille and Turrill Roads.

"We had prior experience with both Solar FlexRack's products and project services and that was a factor in our racking selection. We were confident the array would be installed properly, efficiently and meet the project's critical time schedule."

- Scott Walker
Business Development Director, J. Ranck Electric



Solar FlexRack reduces installation time and safeguards solar modules from undue stress.

components and reduces installation time.



ABOUT SOLAR FLEXRACK G3-X

EASE AND SPEED IN INSTALLATION

The Series G3-X Ground Rack is easily staged on the jobsite and can be assembled in the field by crews of any skill level. It's been third party verified for speed of installation by Industrial Time Study Institute, Inc.

SEAMLESS FLEXIBILITY

The unique design of the series G3-X makes it a perfect fit for nearly any installation. A flexible and adaptable model on the jobsite, G3-X can accommodate up to 20% slope in the E/W direction

INTELLIGENT DESIGN

The series G3-X is value engineered by our world-class team to optimize materials, limit components and create a cost effective solution. The unique design stabilizes and squares the racks creating both a durable system and one that actually accelerates the module installation process by preventing spacing issues during installation. It allows the horizontal rails to be set in place with no hardware during initial placement and can be easily adjusted in the field. The proprietary design safeguards owners' investments and the power generating components of the solar installation.

ABOUT SOLAR FLEXRACK

Solar FlexRack, a division of Northern States Metals, is an integrated solar company that offers custom-designed, fixed tilt ground mount and single-axis solar tracking systems in the commercial and utility scale, solar mounting industry. Solar FlexRack also offers full turnkey packages, including engineering, geotechnical, pullout testing, field, layout, and installation services to address the actual site conditions of an installation, providing a full scope of services from design to delivery and installation. Solar FlexRack has completed more than 1.5 GW of solar racking installations in 32 states across America and five countries globally. For more information, go to www.solarflexrack.com and follow us on [Twitter](#), [Facebook](#) and [LinkedIn](#).

ABOUT CANADIAN SOLAR MAXPOWER

MaxPower is Canadian Solar's series of robust solar panels with 72 solar cells. The panels have high system energy yield at low irradiance and low NOCT. Their frames measure 40 mm and they will withstand a 5400 Pa snow load.

- Low irradiance performance of up to 96.0%
- IP67 junction box
- Wind load up to 2400 Pa
- Efficiency of up to 16.94%
- 10-years product warranty
- 25-years power output warranty

ABOUT CANADIAN SOLAR

Founded in 2001 in Canada, Canadian Solar (NASDAQ: CSIQ) operates as a global energy provider with successful business subsidiaries in 24 countries on 6 continents. Besides serving as a leading manufacturer of solar PV modules and provider of solar energy solutions, Canadian

Lapeer Solar Power Project

Plant Size: 58 MW DC
Location: Lapeer, Michigan
EPC: Inovateus Solar
Designer: Clark Dietz
Installer: J. Ranck Electric
Modules: Canadian Solar
190,000 MaxPower
Inverters: Schneider Electric
71 Conext Core XC 680 kW
Racking: Solar FlexRack G3-X



Solar has a geographically diversified pipeline of utility-scale power projects. Canadian Solar's total project pipeline is now 20.4 GW, including an increase of the late-stage project pipeline to over 2 GW. With state-of-the-art manufacturing facilities in Canada, China and Vietnam, Canadian Solar employs over 8,900 workers worldwide. Learn more at www.canadiansolar.com



ABOUT INOVATEUS SOLAR

Inovateus Solar has become one of the leading solar development, design, engineering, procurement, construction and supply companies in the United States' Midwest. Headquartered in South Bend, Indiana, the company has developed and built more than 250 megawatts of utility, rural electric cooperative, commercial, industrial, governmental, educational and microgrid solar power systems in the U.S., the Caribbean and Latin America. Inovateus' customers range from Fortune 500 companies to utilities, municipalities, universities and governments. Learn more at <https://inovateus.com/>



ABOUT J. RANCK ELECTRIC

For nearly 30 years, J. Ranck Electric has provided design-build and bid/spec construction services. A family business with roots in the Midwest, JRE has become a national presence in electrical and communications contracting. We strive to grant every customer the highest quality, safety, and professional experience with each construction project we perform. JRE keeps a close watch on our ever-changing industry while upholding our corporate values and remaining a financially sound, stable company with prudent growth. Learn more at <https://www.jranck.com/>

