

POWER PROFILE

Illinois Municipal Electric Agency (IMEA)

POWER NEED

Established in 1984, the Illinois Municipal Electric Agency (IMEA) is a not-for-profit unit of local government that is comprised of 32 independent municipal electric systems. While each of these entities owns and operates its own electric distribution system – including some that operate local power generation plants – they combine the power needs of all their members through the IMEA to secure and ensure the reliable delivery of bulk power and energy to their members at low and stable prices.

In 2015, the IMEA Board of Directors decided to diversify the organization's power generation portfolio by adding a renewable source of electricity through a solar demonstration project in Rantoul, Illinois.

"We were motivated to explore the benefits of solar power generation for numerous reasons," said Greg Hazel, public works director for the Village of Rantoul. "It's an opportunity to add a renewable energy source to our power generation mix, it provides real-world data for us to evaluate the performance and reliability of solar power in a utility setting, and it will generate interest in solar power in our local schools and community."

SOLUTION

Following a competitive bidding process, Cat® dealer Altorfer won the right to install, operate and maintain a 1000-kW solar photovoltaic (PV) system that will fulfill a 20-year power purchase agreement with the IMEA. The installation was constructed on an eight-and-a-half-acre site near Heritage Lake Park and the University of Illinois Transportation Lab in a southeastern section of the former Chanute Air Force Base.

"Apart from the financial and environmental benefits of operating a solar facility, turning a vacant property into a productive community asset is an added bonus for this project," said Kevin Gaden, president and chief executive officer of the IMEA.

The site uses advanced solar modules from Caterpillar that are setting the industry benchmark with improved performance over conventional silicon solar panels. Fully scalable and pre-engineered for quick and easy installation, the system offers reliable and predictable energy in all climates and applications with modules that are independently tested to pass accelerated life and stress tests beyond industry standards.

The system also includes the Cat microgrid master controller (MMC), which leverages Cat Connect technology for real-time collection and communication of onsite performance data that can be remotely monitored and analyzed.

Construction of the facility commenced in the summer of 2016, and officials from Rantoul and the IMEA inaugurated the site as part of an Earth Day celebration in April of 2017.

RESULTS

In its first year of full-capacity operation, the solar facility in Rantoul produced a 2.5 percent better yield than what was guaranteed. It produced 1.65 million kWh of electricity in 2017 – enough energy to power approximately 145 homes, or up to one percent of Rantoul's total power need.

As the facility demonstrates its economic viability and the capabilities of its advanced technologies, local officials have noted that the site has been configured to allow for the installation of additional solar-power generating capacity.



Built on an eight-and-a-half-acre site, the solar facility in Rantoul, Illinois, USA, repurposes an underutilized property at the former Chanute Air Force Base.

CUSTOMER

[Illinois Municipal Electric Agency \(IMEA\)](#)

LOCATION

Rantoul, Illinois, USA

CUSTOMER BUSINESS ISSUE

Need to diversify power supply with renewable sources of energy

SOLUTION

[1000-kW solar photovoltaic \(PV\) system comprised of 10,200 Cat® high-efficiency modules](#)

CAT DEALER

[Altorfer](#)

"We are learning a great deal from this demonstration site, and we would welcome an expansion of this site at the appropriate time in the future if it continues to deliver the return we need," Hazel said.

The IMEA showed continued confidence in Altorfer and Caterpillar by commissioning a 500-kW solar PV utility-scale demonstration project in St. Charles, Illinois, as part of a 20-year power purchase agreement. Featuring more than 4,800 Cat solar panels, the facility began generating power in late 2017. It is expected to produce approximately 650,000 kWh annually.

[For more information, please visit
cat.com/powergeneration.](http://cat.com/powergeneration)

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