

CASE STUDY

Burns & McDonnell Builds Ameren Missouri's Largest Solar Power Generation Plant

Ameren Missouri aims to increase clean energy production in the Greater St. Louis region with a new solar array. The project is part of a program to encourage a reduction in carbon emissions.



Challenge

To continue pursuing a renewable-focused future, Ameren Missouri needed a 6.5-megawatt (MW) solar array located in New Florence, Missouri. The facility, which is Ameren Missouri's largest solar installation to date, gives the utility the capability to power the utility's customers with renewable energy and is a stepping stone in the goal of achieving net-zero emissions by 2050.

Solution

With a long-standing relationship with the utility, Burns & McDonnell was hired for design and construction of the solar array. The project was executed using an engineer, procure, construct (EPC) approach to cost-effectively self-perform construction from start to finish. Taking an innovative approach from the traditional single panel in portrait installation, a two panel in portrait orientation was used — where two panels are effectively side by side — with the 535-watt/1500-volt photovoltaic (PV) modules pivoting on a single-axis tracking system.

Project Stats

Client

Ameren Missouri

Location

New Florence, Missouri

12,204
SOLAR PANELS

12K
MEGAWATT HOURS
GENERATED PER YEAR

1100
HOMES POWERED

Our integrated solar design and construction team optimized project delivery to maximize energy yield and capacity cost-efficiently. Over 12,000 solar panels were installed to accommodate the energy needs of the residents and businesses that signed up to receive energy as part of the utility's Community Solar program.

Construction was self-performed through the use of direct hire capabilities with AZCO, part of the Burns & McDonnell family of companies. Nearly 27% of local vendors and contractors used were diverse owned, exceeding the original supplier diversity spend goal of 20%. There were zero safety incidents recorded throughout the project's duration. Throughout the project, our integrated team engaged in value engineering to optimize the site layout to fit the project budget estimates.

Results

Covering nearly 30 acres, this plant is Ameren's largest solar facility to date and is another step toward establishing a net-zero carbon emissions goal by 2050, reduce carbon emissions 50% by 2030 and 85% by 2040 based on the utility's 2005 levels.

The facility is vital helping meet clean energy needs as part of Ameren's Community Solar program, a solution that enables customers to participate in solar generation without having to install often costly solar panels on their own home or business. Panels in the New Florence community solar program will provide enough power to serve 1,100 homes.

Incorporating a fully integrated approach provided a cost-effective solution and allowed Ameren Missouri to develop a solar standard and build strong industry connections. This standard will carry over to future projects the utility pursues in the solar construction field. For decades, our firm and Ameren Missouri have worked together on innovative solutions for communities in the Midwest — a beneficial partnership for achieving a more renewable-focused tomorrow.

About Burns & McDonnell



Burns & McDonnell is a family of companies bringing together an unmatched team of engineers, construction and craft professionals, architects, and more to design and build our critical infrastructure. With an integrated construction and design mindset, we offer full-service capabilities. Founded in 1898 and working from dozens of offices globally, Burns & McDonnell is 100% employee-owned. For more information, visit burnsmcd.com.