

CASE STUDY / **SOLAR PHOTOVOLTAIC ARRAY PROJECT**

TURNING TOWARD THE SUN

To boost its power generation capabilities, a confidential client set its sights on a utility-scale solar project — spanning 106 acres. Using EPC project delivery, our team created a solar field to follow the movement of the sun and convert the solar energy captured into enough electricity to serve 3,300 homes.



HARNESSING THE POWER OF THE SUN

EPC model delivers a client's first utility-scale solar project — on budget and on schedule.

CHALLENGE

A confidential client, serving more than 700,000 customers in southeastern U.S., was in search of a solar solution to add to its traditional power generation. After deciding on a location, significant design challenges surfaced: corrosion issues due to the proximity to the Gulf of Mexico and the need for the design to accommodate the area's hurricane-force winds and flood plain location.

The client turned to our team for engineer, procure and construction services (EPC) to overcome these challenges and deliver a 23-megawatt direct current (MWdc), 106-acre solar photovoltaic (PV) field — its first utility-scale solar project.

SOLUTION

Through thoughtful civil and structural design, our team collaborated with the client to evaluate numerous technology assessment iterations and develop an approach to cost-effectively mitigate these challenges, while meeting capacity requirements and budget parameters.

Due to the location of a portion of the site in a flood plain, the bottom of the module was required to be six feet above grade in certain areas. This added height also had to be

considered in the modified design to withstand the added wind loading of hurricane-force wind speeds. In order to meet the minimum energy capacity and stay within budget, we designed a single-axis tracking system.

The design featured more than 202,000 thin-film PV panels installed in 1,772 rows supported by 14,000 direct-driven steel piles. The panels were outfitted with sensors and drive motors to enable them to track the movement of the sun, resulting in a more than 20 percent energy gain over fixed solar installations. The solar energy is then distributed to a solar plant through nine inverters for conversion from direct current (DC) to alternating current (AC) power.

RESULTS

Completed on March 1, 2017, the project took 138,000 man hours with 80 percent of project workers hired locally. The new solar field is the largest single source of solar power in the area with capacity to serve 3,300 homes. Delivering an estimated \$10 million in local economic impact, the project has illustrated that utility-scale PV is cost competitive with traditional generation for regulated utilities.

PROJECT STATS

CLIENT

Confidential Client

LOCATION

Southeastern U.S.

23

MEGAWATT DIRECT
CURRENT (MWDC)

106

ACRE SOLAR FIELD

202K

PV MODULES

20%

ENERGY GAIN VERSUS
FIXED SOLAR PANELS