

Success Stories

Avangrid Renewables



CUSTOMER & PROJECT

*Avangrid Renewables
El Cabo Wind Farm*

MARKET FOCUS

Renewable Energy



WeatherBuild

Success Stories

EL CABO WIND FARM

Executive Summary

Avangrid Renewables, Wanzek Construction, Siemens Gamesa Renewable Energy, and Sparling Construction Company joined forces on the El Cabo Wind Farm project, a 298-megawatt wind farm in Torrance County, New Mexico, slated for commercial operation in the second half of 2017.

The El Cabo Wind Farm project features 142 Siemens Gamesa G114-2.1 MW turbines, standing 80m above ground level from the base to the nacelle and hub. The on-site construction includes civil and road work on the combined 56,000-acre project area, comprised of private and state trust land managed by the New Mexico State Land Office.

Once operational, the El Cabo wind complex will meet the energy needs of over 200,000 households while preventing the emission of around 447,000 tons of CO₂ (equivalent to the greenhouse gas emissions of some 149,000 cars in one year).

Owner's Weather Risks

- Weather can affect the project schedule. Wind turbines and transmission networks must be constructed, energized, and commissioned on time to meet the commercial operation date and power purchase agreement.
- Safety incidents or fatalities could potentially shut down the site for weeks, cause OSHA investigations and penalties, increase insurance premiums, lead to bad press, and strain relations between the trade partners.

Customer Challenges

Weather risk management was an essential responsibility for the project team on the El Cabo Wind Farm. It played a crucial part in meeting the commercial operation date (COD), earning critical tax incentives, and protecting the health and safety of tradecraft across the geographically distributed wind farm site.

Traditionally, managing weather risk poses a host of problems. Team members struggle to "connect the dots" between generic weather forecasts and short-term project schedules. Communication is often an issue, as team members guesstimate outcomes, reallocate resources, and often suspend work in error. A single missed workday represents a loss of about \$75,000 in crew idle time, equipment rental fees, and general and administrative overhead. Therefore, minimizing the impact of weather was vitally important for the on-time, on-budget handover of the project.

Time to operation and time to revenue, particularly in the energy sector, is critical. As the owner of the project and a leader in the field of renewable energy, Avangrid Renewables knows that it's in all the parties' best interests to deliver the project safely, on time, and on budget. To that end, they leveraged WeatherBuild to help them answer the following questions:

- How do we manage weather risks and mitigate schedule impacts to meet our commercial operation date (COD) and accelerate time to revenue?

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- How do we meet the schedule milestones and performance measures in our power purchase agreement (PPA) terms?
- How do we improve project IRRs and provide greater certainty to tax equity investors with earlier revenue and less downtime?

Using WeatherBuild to Manage Risk

Weather risk management is one of our most important responsibilities to meet our commercial operation date and power purchase agreement.

- Construction Manager, Avangrid

Innovative Technology for Increased Productivity

WeatherBuild provides a variety of hyper-local weather risk reports. Unlike the generic reports from the National Weather Service, these are specific to the project.

WeatherBuild Solutions enabled Avangrid to increase the impact of positive weather events or opportunities and decrease the effect of adverse weather events or threats.

Instead of tackling adverse weather with manual, error-prone measures, Avangrid and its trade partners could take proactive and preventative action, allowing for smoother project completion, on or even ahead of schedule.

Ensuring Safety

As an owner, safe and on-time project completion is mission-critical for us and our EPC contractors.

- Construction Manager, Avangrid

Avangrid Renewables' facilities throughout the United States maintain consistently high operational standards for environmental, health, and safety (EHS) considerations through a framework known as the EHS Management System. This framework is articulated in their policy, "Integrating EHS in Everything We Do" applies to all employees and specialists hired on a contract basis.

Weather, including wind and wind gusts, jeopardizes the safety and impacts the productivity of crane offloading, rigging, and lifting operations in the field. In addition, high temperatures pose health and safety risks to work crews, which can lead to heat stress, heat stroke, and heat exhaustion. WeatherBuild's weather risk reports provided Avangrid with early warning indicators to take proactive and preventive measures to mitigate health and safety risks.

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Handover and Historical Record Keeping

Three measures of successful project delivery and weather risk management are safety, quality and production. We aim for zero recordable injuries and strive for high quality results, both during the construction and across the lifecycle of the project.

- Construction Manager, Avangrid

WeatherBuild's benefits extend beyond the project completion as well. WeatherBuild enables Avangrid to go back in the weather report logs and confirm if and when project teams experienced weather delays, on what days, and at what periods during each work shift and work day, enabling historical record-keeping and improved risk management in the future.

As part of the handover of the assets from construction to commissioning to operations and maintenance, Avangrid reviews weather risk reports to ensure that the transition and the transfer process meets or exceeds vital milestones, on or ahead of schedule.

About Wanzek

Wanzek Construction, a MasTec Company, is a direct-hire, heavy industrial contractor that provides world-class construction expertise in the industrial process, heavy/civil, biofuels, wind energy, and power sectors. Mastec, Inc. is an American multinational infrastructure engineering and construction company based in Coral Gables, Florida.

About Avangrid Renewables

Headquartered in Portland, Oregon, Avangrid Renewables is a subsidiary of Avangrid (NYSE: AGR) and part of the Iberdrola Group, an energy pioneer with the most extensive renewable asset base of any company in the world, with more than 14,000 megawatts (MW) of renewable energy spread across a dozen countries.

About WeatherBuild

WeatherBuild offers weather-enabled decision support solutions that empower contractors, owners, and operators to improve situational awareness and make better-informed decisions about weather events, schedule impacts, safety risks, and probable outcomes. Our mission is to leverage weather data, machine learning, and predictive analytics to increase productivity, enhance safety and manage risk.

Increase productivity. Enhance safety. Manage risk.™