

EPE Enables a Smooth Interconnection Application Process

Background

When an energy company was developing a 350 MW wind farm with 80 Vestas V163-4.5 MW turbines in the Western Electricity Coordinating Council (WECC) region, the team turned to EPE to complete the interconnection process.

The project needed to connect to the Tri-State Generation & Transmission (TSGT) system through a 345 kV transmission line, linking to the AULT and Laramie River 345 kV bus. EPE provided detailed engineering support, which included completing the interconnection application, preparing technical documents, and ensuring compliance with grid requirements.

Challenge

Interconnecting a large-scale wind farm to the grid presents significant technical and regulatory challenges, especially in regions like WECC, which has strict grid compliance standards. The client needed to ensure that the 350 MW wind farm met these standards without causing grid instability.

The interconnection request process requires precise technical modeling, detailed documentation, and coordination with the grid operator — usually all under tight timelines. With its experience and expertise in interconnection applications, load flow studies, and regulatory compliance, EPE was well-versed in overcoming these hurdles.



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Approach

The EPE team started by evaluating the project's technical needs and grid compliance requirements. They developed electrical models to ensure the wind farm would perform reliably on the grid, using load flow studies, fault analysis, and dynamic simulations to see how it would operate under different conditions.

EPE also handled all the technical documentation for the interconnection application. They created diagrams showing the connections between turbines, substations, and transmission lines. In addition, they designed the system to safely deliver power from the turbines to the substation and put in place measures to prevent overloads or faults. Models showing how the wind farm would react to grid disturbances were also submitted to WECC for approval.

EPE maintained clear communication with the client and the grid operator throughout the process, proactively addressing technical challenges and providing ongoing timing and budgetary updates.

Outcome

With EPE's expert guidance, the client successfully submitted the 350 MW Interconnection Application to TSGT, fully meeting WECC's regulatory standards. EPE's involvement ensured the wind farm would operate smoothly and reliably once connected to the grid.

The project is also on track to hit key milestones, including energization and commercial operation dates. EPE's deep knowledge of grid integration and regulatory standards not only ensured project success but also helped the client avoid costly delays and technical setbacks.

This partnership underscores the importance of working with a skilled engineering team like EPE, especially when navigating the complexities of renewable energy projects and interconnection processes.

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