Renewable Energy Simulation Studies using PROMOD IV

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Is Siemens PTI well positioned to provide detailed economic and reliability analyses for generation and transmission expansion projects? Yes! Siemens PTI identified this as a growth area and followed the lead of U.S. Independent System Operators (ISOs) by licensing PROMOD IV, Ventyx analytics software. PROMOD IV is a generation and transmission dispatch modeling system that comes with a full suite of simulation-ready data for the Eastern, Western and ERCOT Interconnections, and is used by all U.S. ISOs.

Siemens PTI is not limited to the use of the generic models provided with PROMOD IV. To expand and improve the capability and services being offered, PROMOD studies can be developed on a smaller footprint. For example, we are currently converting a customer-provided generation dispatch model to include a full representation of an island power grid so that the integration of renewable energy can be better analyzed. This project involves creating detailed hourly models of potential wind, solar and waste-to-energy sites, then running a comprehensive series of production cost simulations. This analysis will determine the transmission network’s adequacy and the cost of any additional ancillary services needed to maintain current levels of system reliability once the renewable assets are added to the island’s transmission system.

Another effective use of the PROMOD IV software is to evaluate operating performance and profitability of new technology in existing energy markets. Siemens PTI recently completed an in-house analysis of how Siemens’ fast-start combined cycle units compare to those of a competitor’s technology when they are dispatched into the ERCOT energy market. Results from studies such as these are site specific, as this analysis would yield different conclusions if modeled in a different energy market. Having the in-house capability to provide competitive analyses provides both Siemens and our customers with invaluable market insight.

For further details regarding our market analysis capabilities, please contact Donna Vittek Anderson, Senior Staff Consultant at Siemens PTI.