Interconnection Seams Study Delivers $1B in Value

Study Demonstrates the Benefits of Joining Eastern, Western and ERCOT Interconnections in the US

90,000 nodes and 10,000 generators as well as all main lines were modelled in detail with PLEXOS.

The National Renewable Energy Laboratory (NREL) is dedicated to research, development, commercialization and deployment of renewable energy and energy efficiency technologies.

Situation

There are three major components of the US power system: the Western Interconnection, the Eastern Interconnection and the Electric Reliability Council of Texas (ERCOT).

Very little electricity is transferred between the interconnections however, there is significant value in strengthening the connections (or seams) to encourage efficient development and utilization more reliable, resilient, sustainable, and affordable electricity system.

Solution

Representatives from more than 30 utilities, system operators (MISO, SPP, WECC, AESO, ERCOT, IESO) and industry organizations, including Energy Exemplar, developed a study to evaluate the optimal solution for joining the interconnections.

The team specifically chose PLEXOS as the model because of its unprecedently resolution and Mixed Integer Programming, (98,000 nodes, more than 100,000 lines and approximately 12,000 generators). It was the first model to simulate East and West Interconnections in US/Canada together.

Results

The study found that more than $1 billion of economic value could be delivered by joining the interconnections. It also proved that **proper modeling and geographic diversity (wind, solar) increases the ability to integrate more renewables**.

Additional study details are availalble here.

To learn more about PLEXOS and transmission operations, visit: **energyexemplar.com** or contact us at **info@energyexemplar.com**.