**Forecasting is the Key to Smart Use of Renewable Energy**

**by Todd Stone, Director of Marketing and Communication, 3TIER Inc.**
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A smart grid will enable a higher percentage of power to come from clean and renewable sources, abundant in the Pacific Northwest.

Integrating large amounts of renewable energy into the current grid system is challenging because power from the two primary technologies – wind and solar – varies with weather conditions. For the electrical grid to be efficient and reliable, it is critical to know exactly *when* and *how much* power will be produced from the wind and the sun so that the total supply of energy can be balanced with demand.

Using sophisticated weather prediction computer models, Seattle-based company 3TIER provides minutes-, hour-, and day-head ahead power production forecasts for all of the wind and solar farms in the Pacific Northwest Smart Grid Demonstration Project. This information is a critical component of the transactive incentive signal that impacts the overall supply, demand, and price of electricity in the project.

With accurate wind and solar power forecasts, the signal can influence demand in order to maximize the use of all available renewable energy, while producing less surplus energy to back up renewable energy in the event weather conditions are not favorable.

The flexibility of a smart grid system, combined with accurate wind and solar power forecasting, creates a more efficient system. Such a system enables greater use of renewable energy sources, while ensuring the reliability that consumers demand.

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