

Renewable Energy Forecast Error Correction

Applications

- Wind power
- Ocean power
- Solar power

Problem & Solution

In renewable energy, utility operators use forecast models to predict energy fluctuations over a future time horizon to account for operating reserves, and protect grid infrastructure from instabilities. These models are of limited accuracy and as a result operating reserves may be inadequate or over-provided, and grid instabilities may be caused by under or over production of power. Forecasting enables operators to manage varying levels of power generation and operate equipment efficiently and traders to make marketing decisions.

This invention makes it possible to quantify two errors, used to qualify and improve forecast models, protecting against losses in revenue and grid instabilities caused by energy fluctuations.

Benefits

- Minimal data is required to perform forecast error analysis; time series for actual power generated and forecast power
- Applicable to any data sampling rate

Patent Pending

Keywords

Renewable energy, wind power, ocean power, solar power, forecast, operating reserves, penalties, energy markets, energy spot markets, grid instability

For more information

Business Development/Technology Licensing Section

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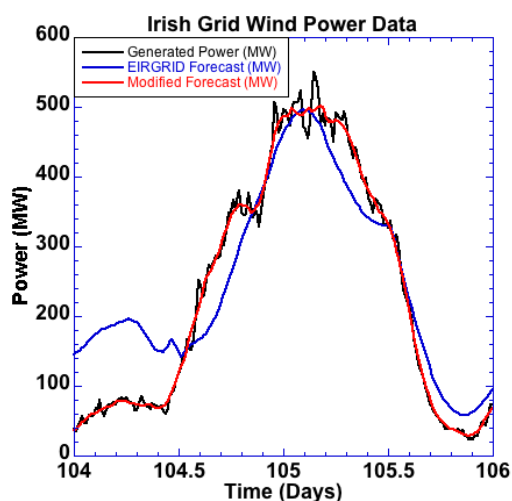


Figure showing EIRGRID's forecasted power (blue), modified forecast (red) and generated power (black). The modified forecast using this technology significantly reduced the forecast error which is the difference between forecast power and generated power.