COGNITE

OPTIMIZING POWER TRADING FORECASTING WITH COGNITE DATA FUSION

Take Advantage of Flexible Generation • Better Characterize Intermittents • Capture Market Drivers

While business drivers and context vary market-to-market, the power & utilities industry relies on forecasting for critical daily generation and dispatch activities. But with many variables in these forecasts changing rapidly due to external factors such as new demand patterns, an evolving generation mix, and an increasing rate of dynamic weather events, forecasts risk becoming unreliable and lead to suboptimal decision-making. With Cognite Data Fusion, generators and independent system operators (ISOs) can leverage their existing data and improved forecasting abilities to build efficiencies and competitive advantage from their operations.

Opportunities for Renewable Generators:

In the case of hydropower or other flexible generation where startup costs are low, accurate forecasting in both the day-ahead and intra-day markets can help pinpoint profitable opportunities to generate additional power when prices are high and the marginal ramp rates are low.

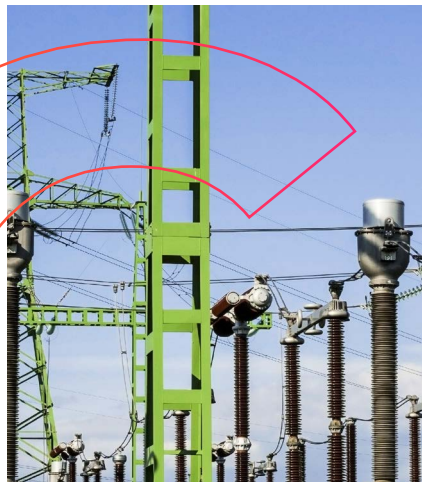
Wind and solar operators, on the other hand can leverage next-generation forecasting techniques to avoid imbalance costs by more accurately predicting the amount of generation capacity based on operational data, weather patterns, and historical activity.

Opportunities for Independent System Operators

For ISOs and TSOs charged with balancing daily power supply with expected load, the increasing volatility of a number of forecasting variables has made it ever more challenging to keep energy prices low for consumers. In addition to better understanding the forecast drivers from a demand perspective, they must also better characterize the predictability and impact from intermittent generation including wind and solar.

The challenge with data-driven forecasting methodologies today is that many remain constrained by legacy trading applications and data feeds that favor long-term energy trends over indicators from rapidly-developing markets and weather patterns. Forecast models must evolve to become self-learning and self-weighting so that all data and all trends can be accounted for in predicting the next day's demand and supply. But this is easier said than done; the evolution and productionalization of next-generation forecasting models depends on an ecosystem of key functions:

- Consistent data availability from an expanded set of traditional and non-traditional data sources including existing streams, operational data, weather, and other external forecasts;
- Rich, hybrid predictive models that offer explainability and under standing of the forecast drivers so that intermittent supply patterns can be captured and incorporated into the models;
- A robust data environment for internal collaboration on model methodologies that supports data discovery, automatic contextualization, and model generation management.



Cognite Data Fusion is the leading industrial data operations software that facilitates the next-generation of dynamic power trading models with higher performance and at lower total costs.

- Makes data available by aggregating and contextualizing big data from all traditional and non-traditional IT and OT data sources
- Empowers statisticians, data scientists, and trading experts to leverage AI & Machine learning to develop and deploy higher-performance forecast models
- Enables operationalization and scaling of these models in a stable, sustainable environment

Operational Solution Framework: