OMNETRIC
A Siemens Company

DATA SHEET

Analytics-based wind power forecasting

With analytics-based forecasting, utilities can harness wind power more reliably

Wind power is clean and it's abundant. Around the world, wind is playing an increasingly important role in the energy mix. Governments have set targets to further increase wind penetration over the next decades in order to meet growing energy demand and sustainability concerns.

For example: by 2020 the European Union needs 20% of its energy to come from renewable sources; by 2030, the United States is targeting 20% of its energy to come from wind. Many utilities are asking themselves if they have what it takes to satisfy a larger proportion of demand with wind energy, without compromising grid stability, or requiring further asset investment. Better wind power forecasting is the key.

The power of analytics-based forecasting

Transmission system operators, distribution system operators, generation companies and trading houses all need to be able to forecast wind as accurately as possible, in order to make better decisions about how they best exploit this source of energy.

A number of forecasting tools are available on the market. For example, OMNETRIC has experience implementing Siemens Spectrum Power Short Term Wind Power Forecast: a state-of-the-art forecasting solution based on an algorithm first developed and deployed by Spain's REE. However, many actors in the wind power value chain use more than one solution.

Analytics-based forecasting helps utilities combine the forecasts they use in a smarter way, drawing on operational and information technology data to generate more accurate final forecasts, as well as better insight into related data.

Improve results from existing tools

OMNETRIC deploys its pioneering Data Discovery for Smart Grids approach to help utilities forecast wind more reliably. OMNETRIC Data Discovery for Smart Grids is based on Teradata's ASTER Discovery Platform and SNAP Framework. It eliminates the effort-intensive activity of preparing and providing data, moving away from traditional analytics, which queries cleansed data from trusted sources residing in relational databases. Data discovery lets utilities interrogate and explore unknowns, delivering insight faster.

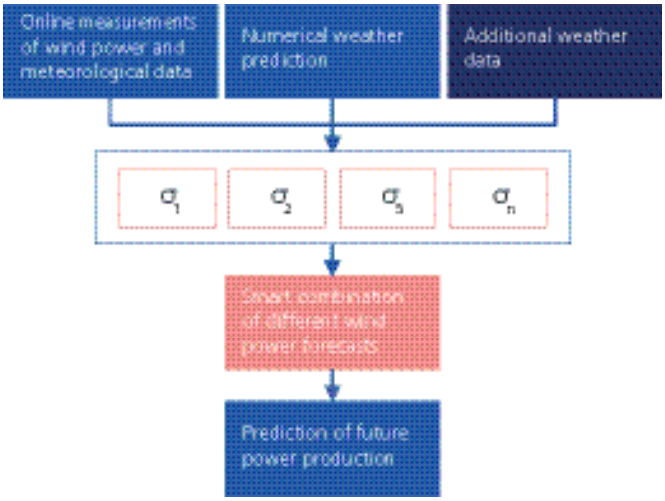
Highly skilled practitioners from analytics and data science domains, along with field experts, collaborate in order to understand and interpret the data that OMNETRIC Data Discovery for Smart Grids delivers. The team works to identify new correlations using data not considered in a classical wind power forecast but that can significantly improve it. They employ state-of-the art algorithms and methods, including a smart combination used to make an optimal meta-forecast out of several available forecasts.

The smart combination of different wind power forecasts (see chart overleaf) can surface insights including:

- Assessment of forecast accuracy in short or long term horizons
- Evaluation of the optimal solution in different scenarios (
- for example high wind conditions)
- Detection of anomalies and historical patterns.

Where a forecasting solution is already in use, OMNETRIC can adapt its approach to a utilities' existing system.

A smart combination of different wind power forecasts



The formula

The combination of OMNETRIC's state-of-the-art analytics solution and data experts, together with utility forecasts and data, enables utilities to benefit from:

- A solution customized to the utility's existing forecasting system
- An improved combination of multiple forecasts
- More accurate final forecasts
- Deeper insight into related data.

This approach enables higher accuracy, making wind power easier to manage. It can contribute to day-to-day operational effectiveness, such as improved day-ahead planning (calculation of required reserves, congestion management), and improved asset management. Additionally, the improved forecast can help predict extreme events (ramps, turbine icing etc.). Finally, an improved forecast maximizes profit by reducing imbalance fees and optimizing bidding.

Get in touch

We have the skills, infrastructure and know-how to help utilities with the technology solutions needed when integrating renewables into the energy mix. Contact us today to start the conversation.

Business requests
request@omnetric.com

Marketing and corporate communications
pr@omnetric.com

Careers enquiries
careers@omnetric.com

About OMNETRIC

OMNETRIC is dedicated to helping energy providers reap the benefits of the digital energy system by integrating their energy operations with IT to support their business goals.

Our global team of engineering, IT, security and data experts brings extensive industry experience to help customers discover and exploit data intelligence to capitalize on industry change, and realize new business models.

Helping customers since 2014, we are an inventive, technology services company. For more, visit www.omnetric.com.

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