Press Release

Machine Learning in Support of Complex Wind Data Management

Karlsruhe, 21/02/2014. EWC Weather Consult take part in the European largest and most important wind event, the EWEA 2014 Annual Event, 10-13 March 2014 in Barcelona. In Hall 6, Stand 6B42, the weather service providers and wind experts from Karlsruhe will be presenting their solutions in complex weather data management. The service portfolio includes MCP (Measure Correlate Predict) wind measurement procedures, analyses for assessing wind farm locations, simulation calculations (based on historical data) and forecasts for power feed-in, together with solutions for optimum combination of (third party) wind forecasts.

With more than 60 nations participating, the event will provide the international wind community with a platform incorporating exhibition, conference and network facilities. EWC, weather service provider in the energy sector since 1999 with a leading position in the forefront of technology relative to the long-term correction of yield calculations and weather measuring service data processing, will actively approach traders, planners, project developers, investors and network as well as wind energy plant operators. To meet the ever-increasing demands of the wind market in terms of highly accurate forecasts, EWC compile complex physical forecasts, calibrate measuring data and combine a very wide diversity of forecast models and model parameters, MERRA reanalyses, satellite images and other wind data sources. Thus, energy traders, for example, are supported by a Meta forecasts based on machine learning techniques: an overall portfolio forecast improved through combining a range of various types as well as independent third-party forecasts. The advantage achieved is the highly improved forecast quality, which is evident, for example, as regards the day-ahead forecast error (15% lower MAE = Mean Absolute Error).

A new product launch at the E-world energy & water 2014 in Essen in February was the renewable energy index, a partial solution to the energy meteorological analysis and a long term index depicting current power production. This comprises meteorological time series and fields based on MERRA reanalysis and simulation calculations. It provides an opportunity for comparing current energy production data with a 35-

year production review taking into account build-up data.

Further focal points for the South German wind experts at the fair are high-resolution, up-to-date wind (and solar) power forecasts for enhanced intraday- and day-ahead forecasts. These forecasts, over the past year, have found themselves similarly catapulted into a new and significantly higher quality league by using machine learning techniques. The short-term forecasts suitable for trading are calibrated with current feed-in data from existing wind farms and any errors eradicated by means of probabilistic fault characterisation.

EWC's wind potential analysis which has already existed in the energy market for the past three years and available online within a matter of minutes, has been supplemented by extensive wind power and yield time series. This also incorporates the wind energy index and the leading technique for tackling the long-term correlation of measuring data. Long-term corrections (MCP) for wind measurements using machine learning reduce any yield uncertainties in wind energy projects and increase the chance of achievable, realistic power yield figures and/or the calculation of margins with enhanced reliability.

The obligatory weather forecasts are now available for any worldwide location at EWC – based on official global weather data and high-resolution forecasting models. The EWC portfolio also incorporates the relevant analyses, plausibility checks for feed-in data as well as filtering of weather measurement and wind metering data.

Not only historical analyses but also the ability to glimpse future happenings on the weather front is important to EWC and its customers. Consequently, weather, wind and power yield forecasts all constitute contributory factors towards optimised maintenance planning and problem-free fault elimination in wind- and solar parks (e.g. thanks to severe weather warnings).

In terms of their participation in the conference, EWC wants to position itself as a solution-orientated weather data manager with the focus on the refinement and adaptation of wind data. As part of their conference activities at the EWEA, they will be presenting poster sessions dealing with the „Long term correction of wind measurements (MCP) using machine learning techniques**„** and „From uncertainties in the model

chain to probabilistic forecasts” to their specialist audience. Further information available online; visit www.weather-consult.com/en/ewea_2014.

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EWC Weather Consult GmbH

As an independent, private weather service provider, EWC supplies time- and location-specific weather data, archives, expertises and forecasts as well as lightning and climate statistics for enterprises in the insurance and energy industry, for official authorities as well as for the sports & leisure time sector. By means of the latest internet technology as well as time- and location-specific data, meteorologists prepare short- and medium-term forecasts and make statements to all weather conditions in Germany and abroad. The company was founded in 1999.