The different application of the ECMWF Short-Term Forecast model in the management of renewable energies

Lucía Benito[1] Begoña Luaces[1]
[1] Iberdrola Renovables. .Avd. Manoteras 20, 28050 Madrid, SPAIN. +34 917 132 631 lbca@iberdrola.es blda@iberdrola.es

COMMITTED

Iberdrola is a leading multinational company in the energy sector that focuses on creating value for our customers, shareholders and society as a whole.
Our capacity to anticipate, our encouragement of innovation, our commitment to protecting the environment and our over 170-year history has made us what we are today, the leading power company in renewable energy generation in Europe, one of the lowest emission companies in the sector, one of the largest *utilities* enterprises in the world in terms of market capitalisation, leaders in digital transformation and the top power company in the 2016 Dow Jones Sustainability Index.
Iberdrola, committed to the international protocols to reduce greenhouse gas emissions, focus its day by day on the management of wind, solar and hydraulic energy.


PHOTOVOLTAIC

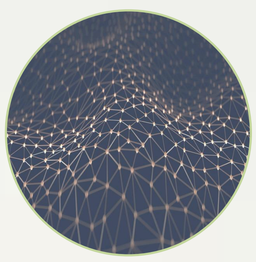

OFFSHORE WIND


THERMOSOLAR


ONSHORE WIND

R + D + i

For efficient energy management, Iberdrola bases a large part of its R + D + i on quality weather forecast, based largely on ECMWF short-term forecast models. Our developments are based on Meteorological Mesoscale Models applied to production curve and Statistical Models with a calibration curve through historical global models, ECMWF and others, and historical productions. These two methods are combined and optimized by data mining methodologies to obtain the best prediction.


NEURAL NETWORKS

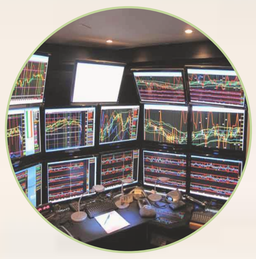

GENETICS SEARCH


RANDOM FOREST


SUPPORT VECTOR MACHINE

ESSENTIAL

A quality weather forecast is essential for optimum maintenance planning of the different facilities, a secure interaction in the energy market and a reliable diagnosis of possible incidents.
ECMWF products allow Iberdrola to obtain quality forecasts to reduce maintenance and operation costs and achieve the minimum deviation in the energy market.


TRADING

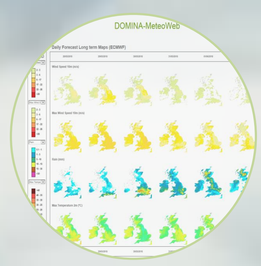

REPORTING



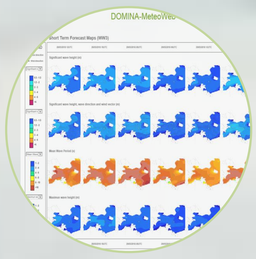
OPERATION AND MAINTENANCE

FRIENDLY

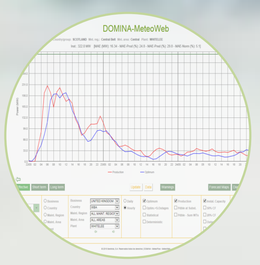
The available information is shown in friendly graphics making it possible to streamline the work.
MeteoWeb is a web application where End Users can access power and meteorological variables forecasting as well as meteorological warnings that may impact on power production.



WEATHER FORECASTING



WAVE FORECASTING



POWER FORECASTING

METEOROLOGICAL WARNINGS