

# Environmental Intelligence Suite for Renewables Forecasting



## The challenge

Growing environmental and climate change concerns, together with the rapidly growing capacity in intermittent renewable energy sources, have made forecasting for renewable generation a vital technology across the globe.

By 2050, 50% of the world's electricity is expected to be generated by wind and solar.<sup>1</sup> Renewable energy growth is greatly outpacing critical integration technologies, including storage and forecasting. As more renewable energy resources such as wind and solar increase, inaccurate or coarse weather data makes forecast reliability difficult.

How important is this? Being able to accurately forecast renewable generation plays an important role in the world's transition into a sustainable energy future. That's why 94% of global utility CxOs surveyed believe that improving weather insights could reduce annual operating costs by up to 2% or more.

## Forecast wind and solar farm operation to plan ahead for greater grid resiliency and reliability

IBM Renewables Forecasting, within the Environmental Intelligence Suite is an IBM Global Business Services led solution that generates high-accuracy forecasts of wind and solar farm assets. Through the use of AI and advanced analytics, sophisticated instrumentation, and best-in-class weather data to help utility operators increase the integration of renewables into the grid while optimizing operational efficiencies, resiliency, and reliability.

"Big data, AI and machine learning are essential for advancing our strategic goals – and the IBM forecasting solution has brought us enormous benefits. Omega Energia has seen a 30% improvement in solar forecasting accuracy and a 15% improvement in wind forecasting by using the IBM Renewables Forecasting Platform."

– Daniel Biaggio, CIO & CTO, Omega Energia

The IBM Renewables Forecasting Platform can deliver more accurate predictions than competitors with the advantages provided by the IBM Environmental Intelligence Suite: Geospatial Analytics (formerly IBM PAIRS), a largescale geospatial data and analytics platform that hosts relevant data sources including wind and irradiance forecasts. By combining historical forecasts of different models with observational data, automated models are trained and ensembled with weather situation categorization and smart model selection, in near real-time. The resulting model is very robust, versatile, and accurate.



**15% to 30% improvement in wind and solar forecasting** accuracy over publicly available weather models.<sup>2</sup>



**5% to 10% improvement over competitors** renewable energy forecasting solutions.<sup>3</sup>



**92% ACCURACY** for day-ahead wind and solar forecasts.<sup>4</sup>

Explore the entire IBM Environmental Intelligence Suite



## Turn environmental insights into actionable business decisions

IBM's environment, climate and weather solutions are empowering energy companies with the information they need to make smarter decisions. The IBM Renewables Forecasting Platform provides high-accuracy forecasts of wind and solar farm assets, using advanced analytics, sophisticated instrumentation, and best-in-class weather data. Clients can attest to our results. With the IBM Renewables Forecasting Platform, Omega Energia increased wind utilization and reduced operating costs due to more accurate forecasts and more efficient maintenance scheduling.

## Sources

1. Bloomberg New Energy Finance, 2018
2. Omega Energia; US Department of Energy
3. Omega Energia
4. US Department of Energy



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