Smart4RES

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 864337.

Smart4RES aims to improve the whole model and value chain in renewable energy forecasting by proposing the next generation of RES forecasting models, enabling an increase of 10-20 % in RES forecasting performance.

Next-Generation Modelling and Forecasting of Variable Renewable Generation for Large-scale Integration in Energy Systems and Markets

Smart4RES aims to bring substantial performance improvements to the whole model and value chain in renewable energy (RES) forecasting, with particular emphasis placed on optimizing synergies with storage and to support power system operation and participation in electricity markets. This is thought in a context of steady increase in the quantity of data being collected and computational capabilities and comes in combination with recent advances in meteorological forecasting and data science.

High-resolution forecasting approaches

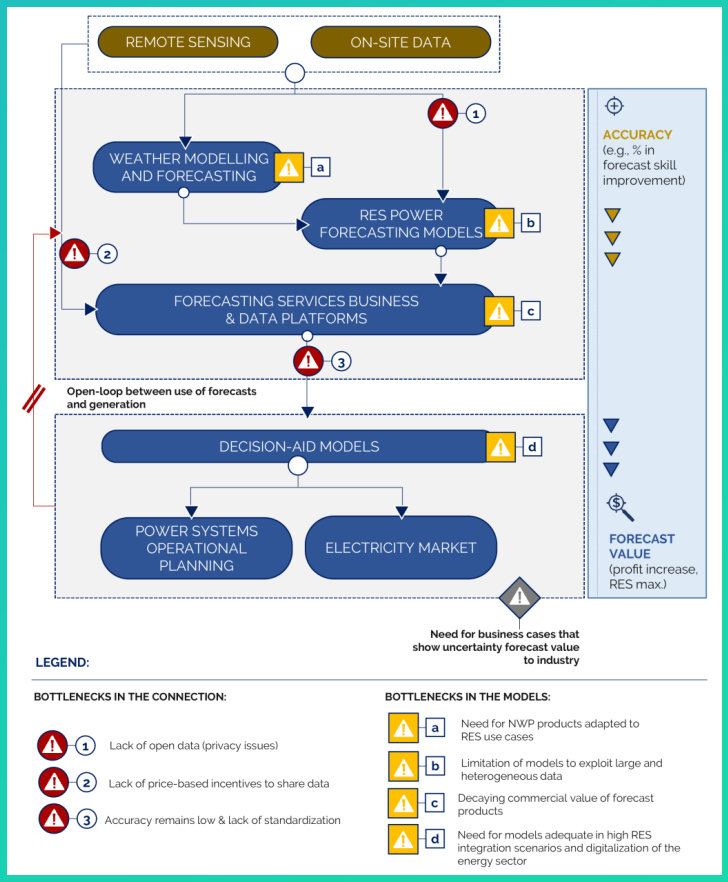
Smart4RES concentrates on novel developments towards very high-resolution and dedicated weather forecasting solutions. It makes optimal use of varied and distributed sources of data e.g. Numerical Weather Predictions, remote sensing (sky imagers, satellites, etc), power and meteorological measurements, as well as high-resolution weather forecasts, to yield high-quality and seamless approaches to RES forecasting.

Data markets & collaborative forecasting

The project accommodates the fact that all these sources of data are distributed geographically and in terms of ownership, with current restrictions preventing sharing. Novel alternative approaches are to be developed and evaluated to reach optimal forecast accuracy in that context, including distributed and privacy-preserving learning and forecasting methods, as well as the advent of platform-enabled data-markets, with associated pricing strategies.

Decision-aid strategies to optimize renewable value in energy systems

Smart4RES places a strong emphasis on maximizing the value from the use of forecasts in applications through advanced decision making and optimization approaches. Focus is on developing models for applications involving storage, the provision of ancillary services, as well as market participation.



Visit the project website at

www.smart4res.eu

Led by ARMINES—Mines ParisTech, the project gathers 12 partners from 6 European countries, with a recognised leadership along the modelling and forecasting ecosystem.