Smart4RES

Newsletter #3
- December 2020 -

Editorial

Dear partners and colleagues,

Smart4RES has completed its first year of project life. Significant progress has been achieved in the development of new solutions for Numerical Weather prediction and RES forecasting applied to electricity markets.

We are pleased to present the 3rd issue of the Smart4RES newsletter.

We wish you all our best wishes for this end of year and look forward to meeting you next year.

Enjoy reading!

Georges Kariniotakis, Project coordinator

Smart4RES Webinar series - Season 1

To facilitate knowledge sharing among stakeholders of the energy system, Smart4RES launched its webinar series. Setting-up the scene of the project, the Season 1 aims to present Smart4RES approach towards a new standard for the entire RES forecasting value chain.

Last chance to register to the 2nd Smart4RES webinar!

On **December 17th**, Smart4RES will present its second webinar 'Extracting value from data sharing for RES forecasting: Privacy aspects & data monetization'. To give you a taste of the topics that will be addressed, check out the short interview of Ricardo Bessa, Senior Researcher and Coordinator of the Center for Power and Energy Systems at INESC TEC. Read the interview.

Extracting value from data sharing for RES forecasting

Privacy aspects & data monetization

Ricardo Bessa
Senior Researcher
INESC-TEC

Liyang Han
Postdoctoral researcher
DTU

REGISTER & JOIN US ONLINE

17 December 2020 – 14:00 CEST

Hosted by ISGAN

Smart4RES
WEBINAR SERIES

Webinar #2

Register

In 2021, four episodes will complete this series of webinar, addressing the following topics:

- Episode #3 – March 2021 Advanced weather forecasting for RES applications
- Episode #4 – May 2021 Optimising participation of RES generation in electricity markets: new opportunities and the role of forecasting
- Episode #5 – July 2021 Optimising the value of storage in power systems and electricity markets
- Episode #6 – September 2021 Modelling tools for integrating RES forecasting in electrical grids

Stay tuned for more information!

Lightning Interviews

Next Generation of Weather Forecasting Models for RES Purposes

The objective of WP2 is to develop weather predictions with high resolution and lower errors than the state of the art. **To get more insights on the work carried out, the WP Leader, Météo-France, together with its contributing partners, Whiffle and DLR have been interviewed** to understand:

- How Smart4RES partners proceed to decrease errors associated with Numerical Weather Predictions and validate their performance in RES-related applications
- What are the innovative contributions of Smart4RES high-resolution predictions, addressing multiple scales from a single power plant to several European countries
- How can observations be used to improve the forecasts

Read the interview
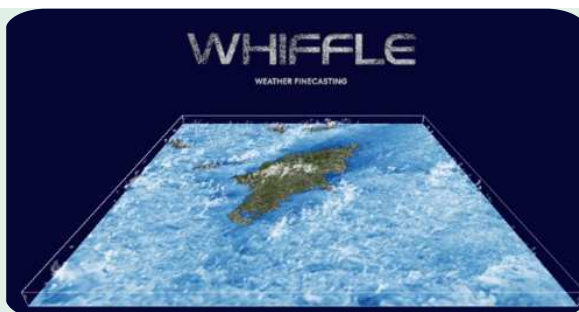
To get a better understanding of what a Large-Eddy Simulation can be, watch out this short movie, prepared by Whiffle. The movie shows a Large-Eddy Simulation based weather forecast for 2018-01-13 for the island of Rhodes. Surface wind speed is visualised in blue shades (dark blue is lower wind speed). Low clouds are visualised in white.

Data Science and the future of RES forecasting

WP3 aims to develop complementary approaches to blending information from multiple source of information and to propose novel approaches towards a seamless view of RES forecasting at various temporal and spatial granularity levels. We've had a quick chat with the WP leader, EMSYS, to get a better understanding of their approach.

Read the interview

Collaborative Framework to RES Forecasting and Resulting Business Models

WP4 explores efficient solutions and concepts for sharing data for RES forecasting and derived use cases. We interviewed, DTU, the WP leader, to dive into these concepts and understand:

- Which method is proposed to optimise collaborative forecasting while preserving privacy
- Why the Data Markets concept, as proposed by Smart4RES, is an essential tool for stakeholders

Read the interview

Highlights on events and publications

H2020 Low TRL Smart Grids and Storage Projects Clustering workshop

Smart4RES has been delighted to participate in a two-day virtual workshop organised by INEA – Innovation and Network Executive Agency – together with 41 EU-funded projects in the energy field. During this 'H2020 Low TRL Smart Grids and Storage Projects Clustering workshop' seven different topics have been addressed:

- Business models
- Data management & interoperability
- Ancillary services at distribution grid level
- Novel energy storage
- New compatible architectures for the grid
- Sector coupling
- Flexibility assessment and modelling, including probabilistic services

Smart4RES looks forward to continuing the discussion on Flexibility assessment and modelling, including probabilistic services.

Recent publications

- C. Di Modica, P. Pinson and S. Ben Taieb, "Online forecast reconciliation in wind power prediction", in Electric Power Systems Research, 190, 2021,

https://doi.org/10.1016/j.epsr.2020.106637.

- C. Gonçalves, L. Cavalcante, M. Brito, R.J. Bessa and J. Gama, "Forecasting conditional extreme quantiles for wind energy," in Electric Power Systems Research, 190, 2021, https://doi.org/10.1016/j.epsr.2020.106636
- C. Gonçalves, R. J. Bessa and P. Pinson, "A critical overview of privacy-preserving approaches for collaborative forecasting", in International Journal of Forecasting, 37, 2021, https://doi.org/10.1016/j.ijforecast.2020.06.003
- K. Bellinguer, V. Mahler, S. Camal, G. Kariniotakis. Probabilistic Forecasting of Regional Wind Power Generation for the EEM20 Competition: a Physics-oriented Machine Learning Approach. 17th European Energy Market Conference, EEM 2020, KTH, IEEE, Sep 2020, Stockholm (by visio), Sweden. (hal-02952589)
- C. Gonçalves, P. Pinson and R. J. Bessa, "Towards Data Markets in Renewable Energy Forecasting," in IEEE Transactions on Sustainable Energy, doi: 10.1109/TSTE.2020.3009615

Stay tuned - Visit the Smart4RES website

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