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Newsletter #6
- September 2021 -

Editorial

Dear partners and colleagues,

Smart4RES is entering its second reporting period. We hope that everyone had a great and restful summer.

Significant progress has been made in preparing the Smart4RES uses cases and consortium members have been very proactive in sharing knowledge.

We are pleased to present the 6th issue of the Smart4RES newsletter summarizing these last months.

We hope to meet you in person very soon!

Enjoy reading!



Smart4RES Webinar series - Season 1
COMING UP SOON!

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

Coming up soon: The 5th Smart4RES webinar!

Smart4RES will present its fifth webinar 'Optimizing the value of storage in power systems and electricity markets'. During this webinar Smart4RES will discuss the value of RES storage, recent contributions, and the role of RES dispatch. Distinguished experts from ARMINES, EDP New and EDP renewables will tackle interesting and intriguing subjects.

Intended audience: International TSOs/DSOs, Storage system industrials, RES producers, aggregators, grid operators, RES traders, Academia, Regulation bodies.

In 2021, one episode will complete this series of webinar, addressing the following topics:

- Episode #6 – October 2021 Modelling tools for integrating RES forecasting in electrical grids

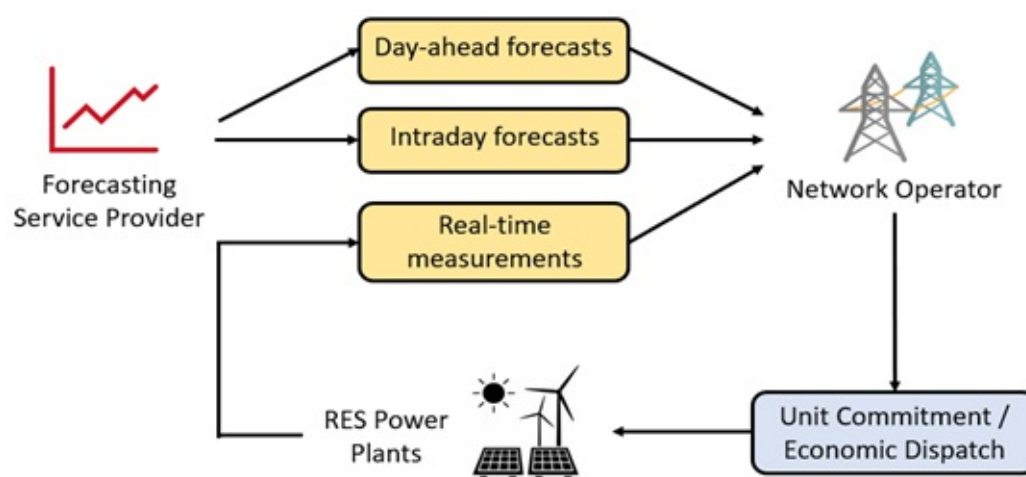
[Stay tuned for more information!](#)



Update on WorkPackages

Design of forecasting framework and data management platform

Defining the requirements for forecasts considering different use cases and end-users is a crucial objective of the [WP1](#). Although there are numerous well-established use cases for which the requirements are well defined and forecasts are already used in business practices, there are several innovative use cases that were tested in pilot conditions, where RES forecasts are considered.



Credits: © Smart4RES

The deliverable 1.1 presents the results of Task 1.1 where the requirements for RES forecasts for different applications and end-users are analyzed. Several well-established, as well as innovative use-cases, are assessed with respect to the way RES forecasts are considered. The expected performance by end-users and corresponding metrics are also surveyed whereas KPIs for the project are defined.

We are happy to announce that all the Smart4RES use cases are available and accessible to the public on the project's website.

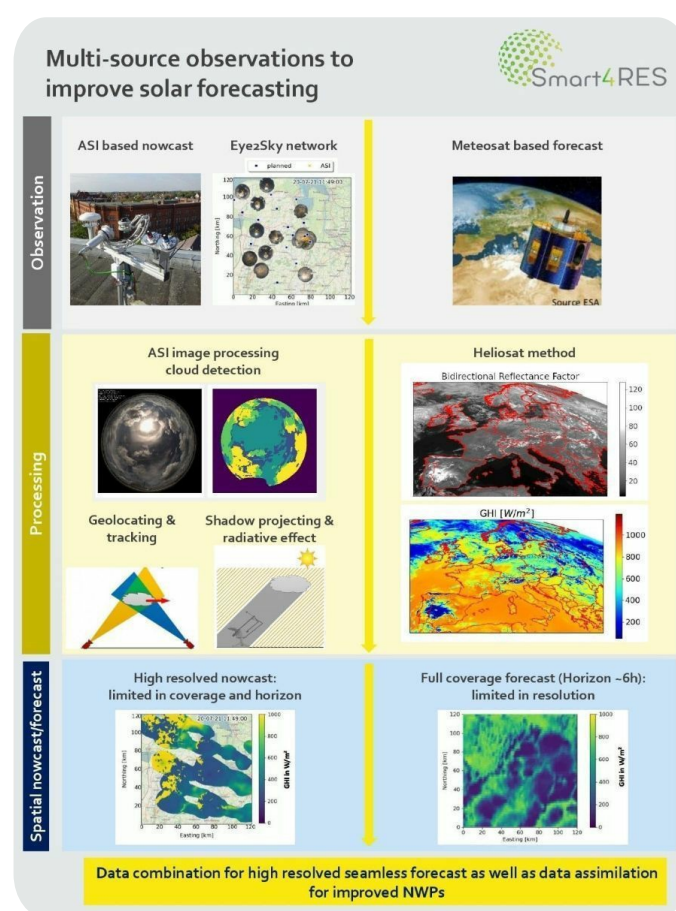
[Read the Smart4RES use cases](#)

Next generation weather forecasting models for RES purposes: short article released!

[WP2](#) aspires to develop and enhance weather predictions with high resolution and lower errors than the state of the art. Recently, The German Aerospace Center (DLR) Institute of Solar Research and the Institute of Networked Energy Systems have been working on improving the solar forecasting within the Smart4RES project. To get a clearer understanding, DLR has captured the essence of the subject and addressed many aspects of solar forecasting through the web article “multi-source observations to improve solar forecasting within the Smart4RES project”.

[Read the article](#)

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To get more insights, many key points were addressed during the Smart4RES webinar episode 3 on Advanced weather forecasting for RES applications. This episode was presented in two parts:

- ep 3.1 deals with Smart4RES developments towards high-resolution and Numerical Weather Prediction solutions to improve RES forecasting models. [Read the key messages.](#)
- ep 3.2 addresses multi-source observations to improve solar forecasting within the Smart4RES project. [Read the key points](#) .

Don't worry if you missed it, you can still watch the replay of the webinars and read about the key messages.

[Watch the replay ep 3.1](#)

[Watch the replay ep 3.2](#)



Summer highlights on events and publications

Smart4RES publications and other scientific communication are available in the [Smart4RES Resource Center](#).

International conferences and workshops

[Past events](#)

Smart4RES partners have been participating in key international events in recent weeks. Download the presentation material [here](#).

- The 4th Smart4RES webinar: Optimizing participation of renewables generation in multiple electricity markets: Smart4RES vision, opportunities and role of forecasting, June 09th 2021. (ARMINES, EMSYS, DTU). [Watch the replay](#)
- The 14th IEEE PowerTech 2021 Conference, June 28th/ July 2nd 2021 (ARMINES, DTU).
- The International Symposium on Forecasting (ISF), 27-30 June 2021 (ARMINES, DTU).
- 16th EDP New R&D session: “The power of AI for renewables”, 21 July 2021 (EDP New, ARMINES, Météo France).

[Upcoming events](#)

[Join us at the European PV Solar Energy Conference and Exhibition – September 06th / 10th 2021! \(online\)](#)

DLR will present Improved hybrid solar irradiance nowcast: combining all sky imager and persistence based nowcasts at the 38th European Photovoltaic Solar Energy Conference (Session 'Forecasting Solar Radiation and PV Power') to be held on Tuesday, 7 September 2021. For more information, [consult the conference website](#).

[Wind Europe Technology Workshop – 08th / 10th September 2021 \(online\)](#)

ARMINES will present Artificial Intelligence: from design to operation at the workshop. The session will be held on Wednesday, 8 September 2021 and will address the scalability of artificial intelligence (AI) tools for predictive maintenance of wind turbines, where massive data are considered. For more details about ARMINES's session and the program, [visit the Wind Europe website](#).

[CIRED conference and exhibition – 20th / 23rd September 2021 \(online\)](#)

ARMINES will participate in the CIRED 2021 and present Smart4RES: Next generation solutions for renewable energy forecasting and applications with focus on distribution grids. The session will take place on Tuesday, 21st September from 09:00 AM until 06:00 PM CEST. For more details, [checkout the event's website](#) and read more about ARMINE's session.

[Wind/Solar Integration Workshops – 28th September / 01st October 2021 \(hybrid\)](#)

DTU will be participating in the session 2B: Forecasting and will present:

- Update of the IEA Wind Task 36 Recommended Practices and Extension with Measurements for Real-time Forecasting Applications.
- Wind power forecasting using LSTM incorporated by Fourier Transformation based Denoising Technique.
- Games and Other News from IEA Wind Task 36 Forecasting for Wind Energy.

The session will take place on Wednesday, 29th September 2021 from 11:20 AM until 01:00 PM CEST.

ARMINES will be participating in the Session 4b - Forecasting as Well As System Aspects and will present Data Science for Next Generation Renewable Energy Forecasting - Highlight Results from the Smart4RES Project. The session will take place on Tuesday, 28th September 2021 from 04:15 PM until 05:45 PM CEST.

[INFORMS Annual Meeting – 24th / 27th October 2021 \(hybrid\) –DTU](#)

[Wind Europe Electric City – 23rd / 25th November 2021 \(Copenhagen, Denmark\) –DTU](#)

[Journées Nationales du PhotoVoltaïque \(JNPV\) – 30th November / 03rd December 2021 \(Dourdan, France\) –MF](#)

Publications and scientific communications

Recent publications

Recently, ARMINES has submitted two articles:

- A Value-Oriented Price Forecasting Approach to Optimize Trading of Renewable Generation. The preprint is available [here](#) .
- Prescriptive Trees for Integrated Forecasting and Optimization Applied in Trading of Renewable Energy. The preprint is available [here](#) .

DTU has submitted two articles following the 14th IEEE PowerTech 2021 Conference:

- Adaptive Generalized Logit-Normal Distributions for Wind Power Short-Term Forecasting. The preprint is available [here](#) .
- Monetizing Customer Load Data for an Energy Retailer: A Cooperative Game Approach. The preprint is available [here](#) and the also the [presentation](#).

Don't miss Smart4RES's latest news, contents of workshops and webinars by visiting our Smart4RES website



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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691800. The present document reflects only the author's view. The European Innovation and Networks Executive Agency (INEA) is not responsible for any use that may be made of the information it contains.