PRESS RELEASE

REVOLUTIONISING PHOTOVOLTAICS WITH DIGITAL INNOVATION

Digitalising the PV sector with technical solutions to solve PV owner problems

Brussels, 12 December 2024 – The **PVOP project**, an ambitious initiative to digitalise the photovoltaic (PV) sector, is setting new benchmarks for operational efficiency, profitability, and sustainability in the era of terawatts. By leveraging cutting-edge **artificial intelligence** and **advanced digital tools**, PVOP is poised to transform the renewable energy landscape in alignment with the EU's REPowerEU target of 600 GW by 2030.

PVOP aims to deliver tangible benefits to PV owners and operators, including a **4.7% improvement in system performance** and a **32% reduction in operational costs**. This transformative project will empower stakeholders to manage their assets more effectively and significantly expand their PV portfolios.

> "By digitalising operations, we can manage vast volumes of data generated by PV plants, develop 100% automated failure detection solutions, and diagnose root causes of issues. This approach will significantly enhance plant performance while reducing operational and maintenance costs."
>
> - **Luis Narvarte, PVOP Project Coordinator and Director of the Photovoltaic Systems Research Group at the Institute of Solar Energy.**

The PVOP project introduces eight advanced technical solutions to optimise PV systems. A sensorisation toolkit (**Solution 1**) ensures quality operational data that enables AI to be applied to detect degradation and failures with precision, while smart tracking control (**Solution 2**) enhances solar tracker performance on terrains of arbitrary orientation and slope and in extreme weather.

Nearly fully automated AI solutions revolutionise fault detection and diagnosis. **Solution 3** integrates sensor and image data for resource optimisation, while **Solution 4** uses autonomous aerial inspections with high-resolution imaging to streamline reporting and improve energy yield.

Predictive asset management software (**Solution 5**) maximises system performance and reduces O&M effort, while tools for grid integration (**Solutions 6–8**) forecast energy yield, predict electricity market trends, and optimise battery-equipped PV plant control for energy trading.

> "PVOP wants to provide solutions to the main problems of the current PV sector, thus extending PV portfolios greatly."

PVOP

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor CINEA can be held responsible for them.

- **Luis Narvarte, PVOP Project Coordinator.**

PVOP's AI-enabled solutions will revolutionise the way PV plants are operated, with features like automated failure detection and root cause diagnostics. These advancements are critical for handling the growing complexity of large-scale PV installations, ensuring owners can efficiently respond to alarms and optimise their assets.

By solving the operational hurdles of the PV sector, PVOP aims to lay the foundation for a **fully digitalised PV ecosystem** that can sustain Europe's energy transition. This project represents a significant stride toward a cleaner, more resilient energy future.

ENDS

About PVOP

The PVOP project is transforming Europe's approach to solar energy, enhancing efficiency and slashing maintenance costs across the continent. By leveraging advanced artificial intelligence and big data, this initiative analyses over 11 gigawatts of operational data from solar installations to pinpoint and address system inefficiencies. Through rigorous testing of eight innovative solutions, PVOP aims to boost system performance and support the EU's sustainable energy goals. This pivotal effort advances solar technology and brings us closer to a sustainable, cost-effective energy future, positioning Europe as a leader in clean energy innovation.

Want to know more about EU projects on sustainability? Or speak to a sustainability expert on topics such as energy transition or sustainable cities? Then join REVOLVE's pool of journalists here.

Media contact

Anna Nazario | Press Officer
REVOLVE – Fostering Cultures of Sustainability
e. press@revolve.media
t. +32 2 318 3984
a. Ave. Palmerston 3, 1000 Brussels

PVOP

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor CINEA can be held responsible for them.