

# AI<sup>4</sup> PV

## Artificial Intelligence for Operation and Maintenance of PV Plants



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### Description

This **24-month project** (July 2021-June 2023) with a total budget of **813 thousands euros**, will develop **AI-based tools and Digital Twin to enhance O&M in PV parks**, thus reducing costs and increasing plant reliability and availability.

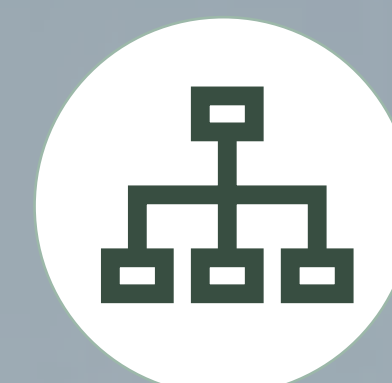


### Objectives

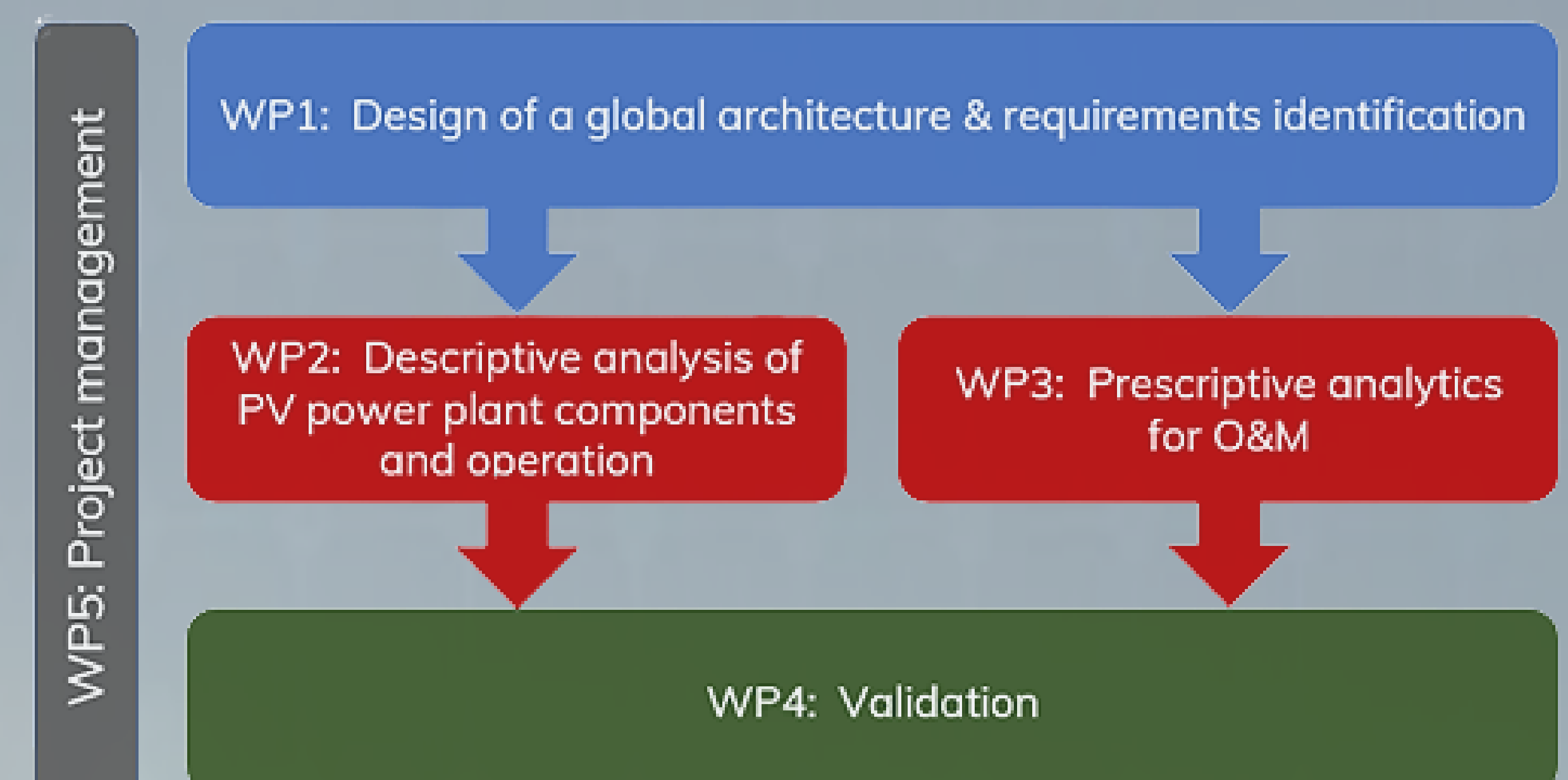
- **Specific objective 1** – Increasing PV Plant reliability through development and validation of models, simulation tools and AI-based data analysis for fault prediction and detection:
  - ❖ **SO 1.1- Early fault detection tools** through advanced monitoring, automated data analysis and comparison with model-generated values.
  - ❖ **SO 1.2 Predictive maintenance tools for increased reliability.**
- **Specific objective 2** - Optimizing PV Plant generation performance:
  - ❖ **SO 2.1 - Early degradation and underperformance detection tools.**
  - ❖ **SO 2.2 - Root cause analysis for prescriptive maintenance tools.**



### Partners



### Structure



### Results

The expected result of the Project is a set of tools for PV plant O&M and Asset Managers for:

- **increasing the operational reliability and efficiency of PV plants:** high accuracy of early detection of faults and degradation problems and Optimization of O&M activities;
- **enhance economic performance:** reduction of downtimes of elements, detection of underperformance problems that can affect the energy production.

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