

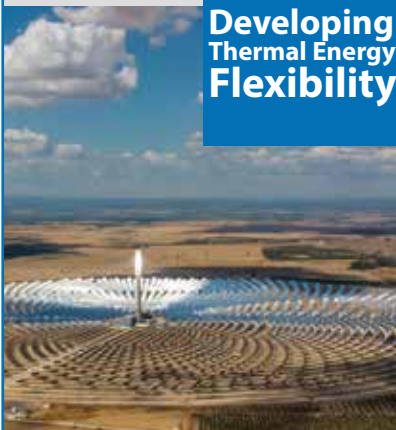


## HYBRIDplus

HYBRIDplus aims to demonstrate the use of PCM "Phase Change Materials" in thermal energy storage (TES) systems as a driver to develop enhanced hybrid CSP plants using supercritical CO<sub>2</sub> cycles.



### Developing Thermal Energy Flexibility



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[www.hybridplus.eu](http://www.hybridplus.eu)



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HYBRIDplus

## TECHNOLOGY

HYBRIDplus proposes a novel PV+CSP plant with an electrified PCM thermal energy storage system in cascade configuration coupled with a high temperature supercritical CO<sub>2</sub> power cycle. This new plant is called to form the backbone of the coming energy system thanks to a higher efficiency and lower LCoE. The enabling hybrid TES developed provides full dispatchability due to its embedded electric heaters, which allow higher shares of variable output renewables in the energy system and increases environmental friendliness.



*This project has received funding from the European Union's Horizon Europe Research and Innovation Programme Under grant agreement N° 101084182*



## PCM CASCADE

HYBRIDplus TES cascade configuration using 3 to 4 different PCM reproduces the effect of a thermocline. The heat is stored as latent and sensible heat, which greatly increases the energy density, reducing the tank volume & cost.



**HYBRIDplus is pioneering the next generation of Concentrated Solar Power (CSP) plants**



**Cristina PRIETO**  
Coordinator of HYBRIDplus

## HYBRIDIZATION

HYBRIDplus hybridization uses an innovative electrified TES. The enhanced thermal storage will be able to store excess electricity from variable renewable energy systems, reducing curtailments and allowing a higher share of renewables in the EU grid.

*HYBRIDplus project includes a real-world testing of the cascaded thermocline building a pilot at University of Sevilla. HYBRIDplus consortium aims for a fast journey from research to market!*

## THE CONSORTIUM

Players from France, Germany, Spain and Sweden develop the HYBRIDplus project for 48 months, starting 1st Oct. 2022.

Multidisciplinary expertise: thermal energy and storage, solar power, engineering, metal fiber, innovation, communication and dissemination.

