



Welcome to the Powder2Power NEWSLETTER #2!

We are pleased to share the latest news and achievements from the Powder2Power project.

In this edition, you will discover:

- How the Themis solar tower is being transformed into a unique MW-scale demonstration platform for fluidised particle-based concentrated solar power
- How hybrid electric heating is enabling particles to reach 750°C using both solar energy and renewable electricity
- How the first commercial-scale designs and techno-economic assessments are shaping the future deployment of the technology
- Where Powder2Power has taken the stage at leading scientific conferences and events
- What new publications, deliverables and outreach materials are now available
- What exciting milestones and events are coming next

Would you like to share information relevant to the Concentrated Solar Power community, such as events, webinars, publications, partnerships, awards, or collaboration opportunities?

Add us in your dissemination list: contact@powder2power-project.eu or tag us on LinkedIn: [@Powder2Power - Horizon Europe Project](https://www.linkedin.com/company/powder2power-project)

Enjoy reading!

Latest News

From construction to commissioning: the Powder2Power pilot takes shape at Themis, Targassonne, France

Discover how the Themis solar tower in southern France is being transformed into the heart of the Powder2Power project. With major infrastructure modifications completed and key components now in place, the MW-scale particle-based CSP pilot is entering the commissioning phase. The first large-scale experimental campaigns are planned for autumn 2026.



[Read full article](#)

Heating Particles to 750°C: Powder2Power validates a key technology for flexible solar thermal energy

See how Powder2Power is combining solar energy with renewable electricity through innovative electric particle heating. Laboratory experiments at KIT and the delivery of a 250 kW industrial heater by SECIO are paving the way for hybrid operation at Themis and greater flexibility for future solar thermal systems.



[Read full article](#)

Designing the future: Powder2Power defines its commercial-scale system

Explore how the consortium is preparing the technology for industrial deployment. Advanced system designs, supercritical CO₂ cycle optimisation and the first techno-economic assessments are revealing the strong potential of Powder2Power for dispatchable renewable electricity and high-temperature industrial heat.



[Read full article](#)

Behind the scenes: Transforming Themis research infrastructure for the Powder2Power demonstration

Go behind the scenes and watch the transformation of the Themis research infrastructure. A timelapse video captures the relocation of major components and the engineering work that is bringing the Powder2Power pilot to life.



[View the video](#)

Past conferences & events



SolarPACES 2025

Powder2Power took the stage at SolarPACES 2025, one of the world's leading conferences on concentrated solar power. Through six scientific contributions, the consortium presented its latest advances in prototype development, electric particle heating, solar receiver modeling and commercial-scale system design.

[Read more](#)



Doctoral Research Days 2025 at PROMES-CNRS

Discover how Powder2Power is helping train the next generation of researchers. At the Doctoral Research Days (JDocs PROMES 2025), Eduardo Oñate Oyandier presented a poster on modeling and AI-based control of the project's MW-scale fluidised-particle solar receiver.

[Read more](#)



Powder2Power highlighted in keynote at COFME 2025

At COFME 2025 (Tangier, Morocco), Gilles Flamant delivered a keynote lecture on particle-based thermal energy storage, highlighting how technologies developed in Powder2Power are helping pave the way for flexible renewable electricity and high-temperature industrial heat.

[Read full presentation](#)

Project outputs: Articles, Publications, Deliverables

Explore all Powder2Power publications, conference contributions and public deliverables in the [Powder2Power Zenodo Community!](#) Highlighted outputs include:

Scientific Publications:

- A methodology for the thermal design and integration of fluidized bed heat exchangers in H_2/CO_2 -based solar tower plants - March 2025
- Design, construction and operation of a particle-driven CSP conveyance loop: attrition, erosion, and thermal performance aspects - December 2025
- Particle Conveyance in a Particle-driven CSP Loop: Design, Operation, Attrition and Erosion - August 2025
- Techno-Economic Analysis and Optimal Supercritical Carbon Dioxide Power Cycle Configuration for Novel Concentrating Solar Power Plants Adopting Lubular Fluidized Particles Central Receivers - May 2025
- Optimization of the Integration of Fluidized Bed Particle Heat Exchanger in H_2/CO_2 Based Solar Tower Plants - April 2025

Media & Outreach:

- Les scientifiques européens au service d'une révolution énergétique ! - Septembre 2025

Public deliverables and Summaries:

- Deliverable D1.3 - Data Management Plan
- Deliverable D1.4 - Project Management Plan
- Deliverable D2.1 - Report on particles flow properties (Summary)
- Deliverable D2.2 - Report on particle erosion, attrition, and dust emission (Summary)
- Deliverable D2.3 - Assessment of particle transport at pilot and commercial scale (Summary)
- Deliverable D5.3 - Definition of KPIs and methodology for techno-economic assessment
- Deliverable D6.1 - Plan for Exploitation and Dissemination of the project Results

Upcoming steps

ESRE 2026 Special Session

Powder2Power will take stage at ESRE 2026 in Milan, where the consortium is organizing a dedicated special session on particle-driven concentrated solar technologies, from component development to digitalisation.



SolarPACES 2026

Powder2Power will participate in SolarPACES 2026, the world's leading conference on concentrating solar power, thermal and chemical energy systems, to be held in Bad Neuenahr-Ahrweiler from 15 to 18 September 2026. In addition to scientific contributions currently under review, the project will be represented with its own exhibition booth.



CESE 2026

Powder2Power will be presented at CESE 2026, the 4th International Conference on Chemical, Energy, Science and Environmental Engineering, taking place from 27 to 30 May 2026 in Vienna, Austria. The project will highlight research on Cellular Metals and Metal Foams to Enhance In-Tube Heat Transfer, exploring innovative materials to improve heat transfer performance.



EU-SOLARIS InfoDay Chile

Powder2Power will be featured during the EU-SOLARIS InfoDay Chile webinar on concentrating solar technologies, bringing together European and Chilean stakeholders working on CSP and CST collaborations.



6th Steering Committee meeting in Targassonne, France

In October 2026, the consortium will gather in France to review technical progress, discuss commissioning activities at Themis and prepare the next steps of the project.



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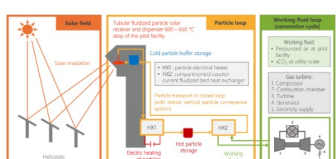
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About Powder2Power



Powder2Power is a four-year Horizon Europe research and innovation project developing a next-generation concentrated solar power (CSP) technology based on fluidised particles. The project aims to demonstrate, at pre-commercial scale (TRL 7), a cost-effective and reliable solution for renewable electricity generation and high-temperature industrial heat production.

The technology uses particles heated up to 750°C to store and transfer thermal energy. These particles are combined with advanced power conversion technologies, including supercritical CO₂ (sCO₂) cycles, to improve system efficiency and flexibility.

Bringing together ten participants partners from six European countries, the project is implementing and testing its technology at the Themis solar tower in Targassonne, France, paving the way for future commercial deployment.

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- [Dissemination & Results](#)
- [Latest news](#)

