Powder2Power first biannual newsletter!

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NEWSLETTER #1
August 2024 Edition

www.powder2power-project.eu

MW-scale fluidized particle-driven CSP prototype demonstration for more efficient and cost-effective energy

Welcome to the Powder2Power NEWSLETTER #1!

We are delighted to share the latest news and achievements the Powder2Power project. In this edition, you'll find an overview of the project, meet our consortium, and discover recent progress and upcoming events.

Would you like to share any information (such as, event, webinar, publications, partnership(s), award, cooperation and collaboration opportunities and other) relevant to the Concentrated Solar Power related community?

Add us in your dissemination list: contact@powder2power-project.eu or tag us on the social media:

LinkedIn: @Powder2Power - Horizon Europe Project

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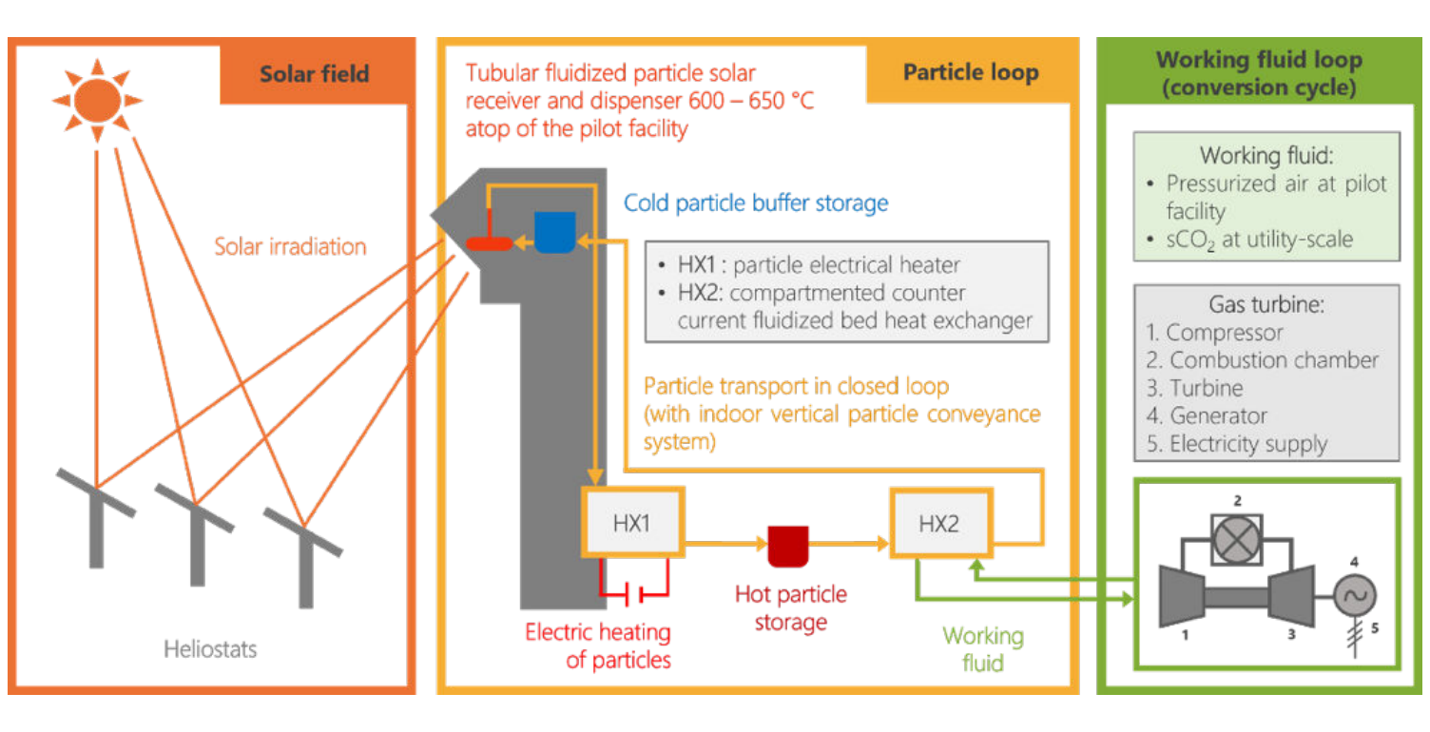
Enjoy reading!

Discover the Powder2Power project



Launched on October 1st, 2023, Powder2Power is a four-year collaborative R&I project funded by the EU's Horizon Europe program. Our goal is to demonstrate a cost-effective, reliable particle-driven CSP solution for power and industrial heat cogeneration at a pre-commercial scale (TRL7). Involving 9 partners from six European countries, we aim to advance this technology towards commercialization.

Testing will occur at the Themis solar tower in Targasonne, France, using a hybrid gas turbine with pressurized air and high-temperature particles (750 °C) for thermal energy storage. We will also study the supercritical CO_2 (sCO_2) Brayton cycle to enhance efficiency for commercial applications.

Our Concept | Our Objectives | Our Consortium

Latest News

Launch of Powder2Power: Kick-off Meeting in Brussels, October 2023

Powder2Power began its 4-year journey on October 1st, 2023. The ick-off meeting was held in Brussels on October 5th, 2023, where the project partners outlined their roles and planned activities for the coming months.

Learn more

Preparing Themis Solar Tower for Prototype Installation and Testing

The WP3 team is actively preparing the Themis solar tower for the installation and testing of our particle-based CSP prototype, including relocating the hybrid gas turbine and manifold from the top to ground level.

Learn more about the work carried out and don't miss the upcoming timelapse video capturing a key moment of the turbine's relocation.

Learn more

Communication highlights

Powder2Power is online now: Visit our website to find out more about the project, latest activities and news and follow us on LinkedIn and X!

Project factsheet: Download our factsheet for a brief overview of the project objectives, concept, and expected impacts.

Download

First Online Consortium Meeting Held in April 2024

The first Powder2Power Consortium meeting was held virtually on April 3rd, 2024, marking six months of progress since the Kick-off meeting. Learn more about the meeting's highlights on our website.

Learn more

Electric Heater Prototype Design Achieved

The electric heater prototype, developed in collaboration with our project partners SEICO and KTH, has evolved from a horizontal to a vertical design with multi-staged control. This new design improves control at different flow rates and enhances the heat transfer rate.

Learn more about this achievement and the next steps on our website.

Learn more

Powder2Power on the stage: Conferences & Events

ASME Turbo Expo 2024

On June 24, 2024, our project member Ph.D. Dario Alfani (Politecnico di Milano, Italy) presented a significant paper at the Turbomachinery Technical Conference and Exposition (ASME Turbo Expo) 2024 in London.

This research highlights the preliminary techno-economic optimization of a solar tower based on the Powder2Power fluidized particle receiver. The study provides valuable insights into the cost-efficiency balance and optimal design of Powder2Power plant.

Learn more

ESRE2024

On June 29, 2024, our project member prof. Jan Baeyens (EPPT, Belgium) presented a paper at the 6th International Conference on Environmental Sciences and Renewable Energy (ESRE 2024).

The paper, titled "Heat Losses during Hot Particle Storage," provides critical insights into minimizing energy losses in CSP systems. This research is key to enhancing the efficiency of the Powder2Power project.

Learn more

Project outputs: Articles, Publications, Deliverables

Deliverable D1.1 – Project Handbook (Summary available soon)

Deliverable D1.2 – Project Intranet (Summary available soon)

Deliverable D1.3 – Data Management Plan (Available soon)

Deliverable D1.4 – Project Management Plan (Available soon)

Deliverable D6.1 – Plan for Exploitation and Dissemination of the project Results (Available soon)

Upcoming steps

SolarPACES
Solar Power & Chemical Energy Systems
October 8-11, 2024
Rome, Italy
30th SolarPACES Conference

SolarPACES 2024

We are excited to announce that the Powder2Power project will be prominently featured at SolarPACES 2024 with two significant paper submissions. These papers highlight our innovative research and advancements in concentrated solar power (CSP) technology using fluidized particle systems.

Learn more

Upcoming 2nd Consortium Meeting in Milan,Italy in October 2024

We are pleased to announce that the 2nd Consortium Meeting of the Powder2Power project will be hosted by Politecnico di Milano (POLIMI) in Milan, Italy, in October 2024. This meeting will offer a crucial opportunity for all partners to review progress, discuss upcoming milestones, and plan the next steps to ensure the successful advancement of the project.

Upcoming PhD Opportunities in Powder2Power in autumn 2024

Two PhD thesis opportunities in innovative CSP research, hosted byPROMES, are upcoming. Starting this autumn, join the Powder2Power team and contribute to cutting-edge research in:

- Modeling and control of a receiver for next generation of solar thermal power plant, and

- Modeling of a fluidized bed heat exchanger to be integrated in a solar thermal power plant.

Stay tuned for more details coming soon !

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Funded by
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This project has received funding from the European Union's Horizon Europe research and innovation programme under the grant agreement No 101122347.

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