# test

The DREAM project aims to design, develop and demonstrate a radically improved architecture for ceramic industrial
kilns, characterised by optimised energy consumption, reduced emissions, and lower operating costs compared
to currently available technological solutions. This will be obtained by substantially enhancing specific kiln parts
(control system, refractories, emissions abatement system) and by adding new modules and sub-systems (microCHP unit,
heat pipes) to the current industrial kiln architecture.
DREAM Specific objectives will be:
O1 – To design innovative hardware kiln components improving energy efficiency (biofuel-fed CHP unit, heat
pipes, emission abatement system)
O2 – To introduce substantial improvements on current hardware-software kiln parts (kiln control tool, refractory
materials)
O3 – To test the DREAM solutions in a variety of industrial settings (retrofitting and pilot kiln demonstrators)
O4 – To pave the way for a full seizure of DREAM related market opportunities (dissemination, exploitation within
the ceramic sector and market replication)
DREAM will develop and demonstrate technologies enabling a significant advancement in the sustainability of
ceramics processes, implementing 5 synergic lines of research and 6 industrial demonstrators, which will act as
technological showcases for market deployment. Such approach will enable to advance, in the five lines of research,
from TRL4 to TRL6.
DREAM will contribute to both the sustainability and competitiveness of the European ceramics and process
industries. In particular, the DREAM technologies will earn an overall 20% OPEX and energy consumption reduction
for industrial furnaces, with an average investment payback time for end users lower than 3 years.
The DREAM coordinator and industrial partners are technology and market leaders in the ceramics equipment field,
and this will streamline the translation of the DREAM research results into successful products and services.

https://www.spire2030.eu/dream

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Sector:

## Ceramics

# Engineering

Summary:

Innovative hardware furnace components improving energy efficiency

- *Cogeneration unit integration in firing stage*
- *Waste heat recovery through heat exchanger*
- *Emissions monitoring and abatement techniques optimisation*

**Substantial improvements on current hardware-software kiln parts**

- *Advanced simulation tools equipped kiln control system*
- *Innovative refractory solutions and new materials for insulation*

**DREAM solutions in a variety of industrial settings**

- *Demonstrator 1 will host the innovative emission abatement technology and the innovative refractory materials and solutions based on emissivity coatings will be integrated in an already operating (retrofitting)*
- *Demonstrator 2 will host the heat exchanger and the control system equipped with simulation tools (retrofitting)*
- *Demonstrator 3: A brand new kiln equipped with the CHP generation unit and the innovative refractory materials and solutions based on foam ceramics and opacifiers (pilot kiln)*
- *Life Cycle Assessment and Life Cycle Costing*

**DREAM related market opportunities**

- *Dissemination of project results*
- *Exploitation within the ceramic sector*
- *Cross-fertilisation within other process industries*

Advisory Notes:

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Keywords:
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Type:
**Case study**
Rights:

# Paid Public Access

## Resources

Link:
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