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Supercritical CO<sub>2</sub> power cycles demonstration in Operational environment Locally valorising industrial Waste Heat

D8.1 – CO<sub>2</sub>OLHEAT Public communication materials (i.e. logo, leaflet, poster)

Lead partner: ETN





## Project Contractual Details

<b>Project Title</b>	Supercritical CO <sub>2</sub> power cycles demonstration in Operational environment Locally valorising industrial Waste Heat
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## Deliverable Details

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<b>Contributing Author(s)</b>	Jitka Spolcova		
<b>Reviewer(s)</b>			
<b>Final review and quality approval</b>	Rene Vijgen		

## Document History

Version	Date	Name	Comments <sup>2</sup>
0	29/09/2021	Jitka Spolcova	Creation
V1	30/09/2021	Rene Vijgen	Final comments

<sup>1</sup> Dissemination level: **PU** = Public, **PP** = Restricted to other programme participants (including the JU), **RE** = Restricted to a group specified by the consortium (including the JU), **CO** = Confidential, only for members of the consortium (including the JU)

<sup>2</sup> Creation, modification, final version for evaluation, revised version following evaluation, final





## Executive summary

CO2OLHEAT aims to unlock the potential of industrial waste heat and transform it into power (WH2P) via supercritical CO<sub>2</sub> cycles (sCO<sub>2</sub>).

Through the development of a 2MW sCO<sub>2</sub> power block and its integration in the cement plant of CEMEX in Prachovice (CZ), CO2OLHEAT will enable the operation and design of a novel integrated WH2P plant layout to untap the industrial waste heat valorisation at T>400°C in an efficient and cost-effective way. The concept will be studied for upscale and replication in other type of resource and energy intensive industries and in power plants.

This report corresponds to the D8.1 – CO2OLHEAT Public communication material (i.e. logo, leaflet, poster). It presents CO2OLHEAT's logo, leaflet, poster and a roll-up banner.





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## List of abbreviations

ETN – European Turbine Network  
EU – European Union  
GDPR – General Data Protection Regulation  
GHG – Green House Gases  
sCO<sub>2</sub> – supercritical CO<sub>2</sub>  
WH2P – Waste Heat to Power

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## Introduction

The current deliverable (8.1) is entitled “CO2OLHEAT Public communication materials (i.e. logo, leaflet, poster)”. It is a public document produced within Task 8.1 “Dissemination and communication activities” (WP8) of the CO2OLHEAT project.

The main objective of WP8 is to conduct targeted, effective and high impact dissemination and communication activities, and the public website described in this document is a structural pillar to achieve optimal communication and dissemination results throughout the entirety of the project and beyond.

The report describes the project logo and communication materials specifically developed for the project: a promotional project leaflet, a general project poster and a roll-up banner. These materials have been developed to support dissemination activities and to promote the project’s objectives and findings. Their design is specifically adapted to raise awareness and provide visibility to the project, appealing to the large non-specialist community, to scientific as well as business and regulatory stakeholders.

Last but not least, the development of a project poster and leaflet enhances the project visual identity and public image, hence allowing an easier identification by the public, ensuring visibility and recognition. The construction of a strong brand identity initiated with the public communication materials paves the path towards future exploitation activities and market uptake.

The aforementioned material will be properly displayed and distributed during conferences, exhibitions and workshops. Dissemination activities are undertaken from the beginning of the project and aim at raising interest in the proposed technology of relevant stakeholders, as well as at promoting the novel technology that are developed/adapted throughout the project, and at speeding up its adoption and market take-up, targeting mainly potential end-users/adopters. Hence, the distribution of the communication material is foreseen as an effective solution of promoting the concept and results of CO2OLHEAT.

All the assets will also be available for download on the project’s website, making it easier to promote the project during webinars, virtual meetings and online events.

In particular, this report aims at making the CO2OLHEAT’s communication and dissemination promotional material available for:

- Project partners, so that they can use both the leaflet and the poster to raise awareness about CO2OLHEAT at (scientific) conferences, fairs, webinars and other online and offline events.
- Event organisers, so that they can understand the main concept of the project and help the partners to promote it in the best way.





## CO2OLHEAT logo

The project logo was developed to emphasise the following project characteristics:

- Technology application in industrial plants (hence the schematic drawing of the chimney)
- Presence of the cool and hot temperature (hence the choice of colours)
- Reduction of CO<sub>2</sub> emissions (hence the arrow); the CO<sub>2</sub> serves us both purposes – to showcase the presence of CO<sub>2</sub> in its supercritical state as the working fluid, which in turns reduces GHG emissions, thus also CO<sub>2</sub>
- Modern nature of the project (approach, technology)

The logo was developed by a professional media agency and delivered to us in different formats, usable both for Windows and MAC environment. We place the whole logo package on our project website (<https://co2olheat-h2020.eu/media-2/>) to allow all the stakeholders to use the logo in proper manners.



Figure 1 – Project logo

## CO2OLHEAT leaflet

Amongst the different public communication materials, an appealing and effective trifold leaflet has been developed. This leaflet will allow:

1. To promote the project.
2. To promote the technology that will be developed within the project.
3. To convey the project's objectives and the scope in a clear and visually appealing way.
4. To have a leave-behind to be shared with interested stakeholders at conferences and other relevant events. In particular, the targeted audience is composed of public authorities, the scientific and business communities, as well as general public.





The leaflet will be printed and distributed at fairs, conferences and other external events where CO2OLHEAT is presented. All the partners of the consortium will receive printed copies of the leaflet to maximise outreach in different countries and at different events. The leaflet is also downloadable from the CO2OLHEAT’s website (section Documentation – Dissemination materials). In this way, it will be easier to promote the project also during webinars and events that are taking place virtually.

The leaflet has been designed to contain all the most relevant information, while remaining current throughout the entirety of the project. It could be updated if new developments within the project require it.

## Leaflet’s front

The front of CO2OLHEAT’s leaflet (Figure 2) is developed in the form of a triptych and features the main general information about the project. Throughout the leaflet, the shape of the chimney, introduced by the logo, is omnipresent, and thus giving the consistent design image.



Figure 2 - CO2OLHEAT leaflet front

More specifically, the front of the leaflet is structured as follow:

Left column:

- Expected impacts of the project on:
  - Technology
  - Environment
  - Economy





**Middle column:**

- An overview of the consortium featuring all the Partners’ logos
- Technical information about the project: funding, duration, project coordinator
- Contact information for the project office (ETN) as well as the project itself (including social medias)

**Right column:**

- Typical project image (present also on the website and poster), relating to the project leitmotif – the heat (courtesy of CELSA Barcelona)
- Project logo
- Full project name
- EU flag and reference to EU funding and to grant agreement number

**Leaflet’s back**

The back of CO2OLHEAT’s leaflet (Figure 3) is developed in the form of a triptych. It is developed in an aesthetically pleasing way to increase its effectiveness and it features more specific and detailed information about the project.

**The concept**

CO2OLHEAT is a Horizon 2020 project aiming at unlocking the potential of industrial waste heat (WH) and its transformation into power via supercritical CO<sub>2</sub> (sCO<sub>2</sub>) power cycles. Highly innovative and cutting-edge technologies will be used to design and demonstrate in a real industrial environment the EU-first-of-its-kind 2MW sCO<sub>2</sub> plant.

This pioneer power block will generate completely clean energy while saving significant amount of primary energy and thus also CO<sub>2</sub> emissions.

The technology will be demonstrated in the CEMEX cement plant in Prachovice in the Czech Republic. The project will have six virtual replication sites at our Partners active in Resources and Energy Intensive Industries.

**Key goals**

- Untapping industrial waste heat potential**  
Design of a novel waste-heat-to-power (WH2P) plant layout for WH valorisation at temperatures above 400°C
- Innovations, economic viability and easy replicability**  
Development of the state-of-the-art sCO<sub>2</sub> power block offering numerous financial benefits and a vast replicability potential, which will be tested already during the project
- Increase of energy efficiency**  
CO2OLHEAT will enable industries to improve their resource utilisation and will contribute towards a reduction of energy costs

**Technology**

CO2OLHEAT’s WH2P application is based on a recuperated closed-loop Brayton cycle with sCO<sub>2</sub> as a working fluid. Thanks to its flexibility (compact size and capability to better accommodate load changes), high efficiency and the ability to work with significant temperatures, the sCO<sub>2</sub> power block offers benefits beyond traditional WH2P applications.

**Demonstration site**

CEMEX cement plant in Prachovice (CZ) has a wide untapped waste heat potential amounting to ~16 MW. At the moment, it is not exploited in the facility, and it is rejected by means of water-cooling towers.

**Replication sites**

- Şişecam – Glass industry (Ankara, TR)
- MYTILINEOS – Aluminium Industry (Viotia, GR)
- CELSA – Steel production (Barcelona, ES)
- ENGIE Laborelec – Waste Incineration (Beringen, BE)
- EDF – Power Generation CCGT (Montereau, FR)
- RINA Consulting – Power generation CSP (Cordoba, ES)

Figure 3 - CO2OLHEAT leaflet back

More specifically, the information featured on the leaflet’s back are:

**Left column:**

- A brief description of CO2OLHEAT’s concept



- List of CO2OLHEAT's Key Goals

Middle column:

- Schematic drawing of the sCO<sub>2</sub> power cycle (Figure 4) depicting the recuperated closed-loop Brayton cycle, and the brief cycle description
- Demonstration site description

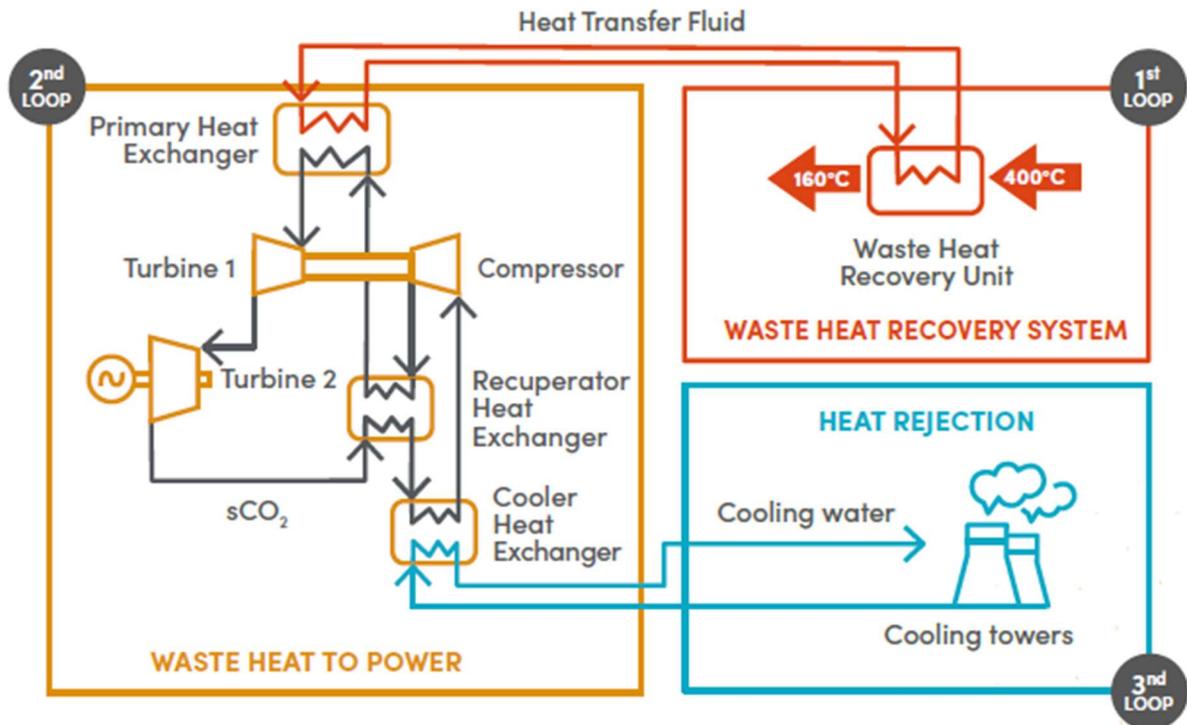


Figure 4 – sCO<sub>2</sub> power cycle scheme

Right column:

- List of replication sites where the CO2OLHEAT project simulation will be virtually performed; this list features an image of each site, country, place and the replication activity description



## CO2OLHEAT poster

The project poster (Figure 5) is a useful communication tool that can be posted permanently at the premises of the project partners. The poster has a particular relevance since it offers a permanent and effective way to inform the stakeholders involved in the project. Moreover, the poster is extremely effective when displayed during public events and conferences.

The design of the poster has been created in order to achieve three main objectives:

1. To promote the project.
2. To convey the project's objectives and scope in a clear and visually appealing way.
3. To encourage different stakeholders, including potential end-users, to contact the project coordinators and get involved in the project.

In light of this, the ETN team has worked closely with professional graphic designers experienced in communication and dissemination campaigns of EU funded projects in the energy sector. As a result, a project poster in the format A0 has been created. The poster follows the same reading logic as the leaflet illustrated in the section above; it features all the most relevant information to explain the project to all types of audiences.

The CO2OLHEAT poster is structured as follows:

- Project logo and contact details;
- Picture of the industrial heat (present also on the project website as well as on the leaflet), featuring the project name and key information (project duration and its budget)
- Brief explanation of the concept;
- Expected impacts (on Technology, Environment, and Economy);
- Schematic drawing of the sCO<sub>2</sub> power cycle;
- Overview of the demonstration and replication sites placed in a shape that has a direct reference to the project logo
- Partners' logos;
- EU flag and a reference to EU funding and to grant agreement number.

The design is captivating: the poster's clear structure and the appealing schematic drawing will catch the attention of potential stakeholders during the poster sessions at scientific events, increasing the exposure of CO2OLHEAT.

As for the project leaflet, the contacts of the CO2OLHEAT's website and social media channels are featured. This will help drive traffic to the official project channels, where the public will find more detailed information on the project.

This poster will also be printed for all partners' use at conferences, events and workshops where CO2OLHEAT will be presented. According to the project's further developments and needs, the design may be updated by ETN into future versions, to advance new promotional campaigns. A digital version of the poster will be downloadable from the CO2OLHEAT's website (section Documentation – Dissemination materials).





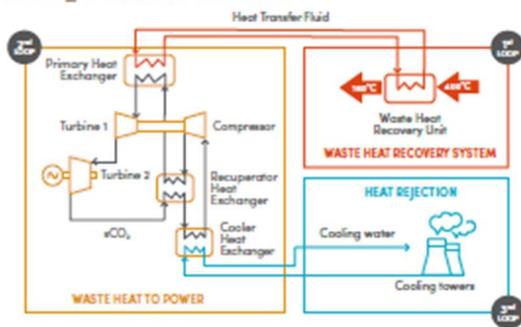
### CONCEPT

CO2OLHEAT aims to unlock the potential of industrial waste heat and to transform it into power via supercritical carbon dioxide cycles. The cutting-edge sCO<sub>2</sub> technologies will be employed to design and demonstrate the EU's first-of-its kind 2MW sCO<sub>2</sub> plant in a real industrial environment.

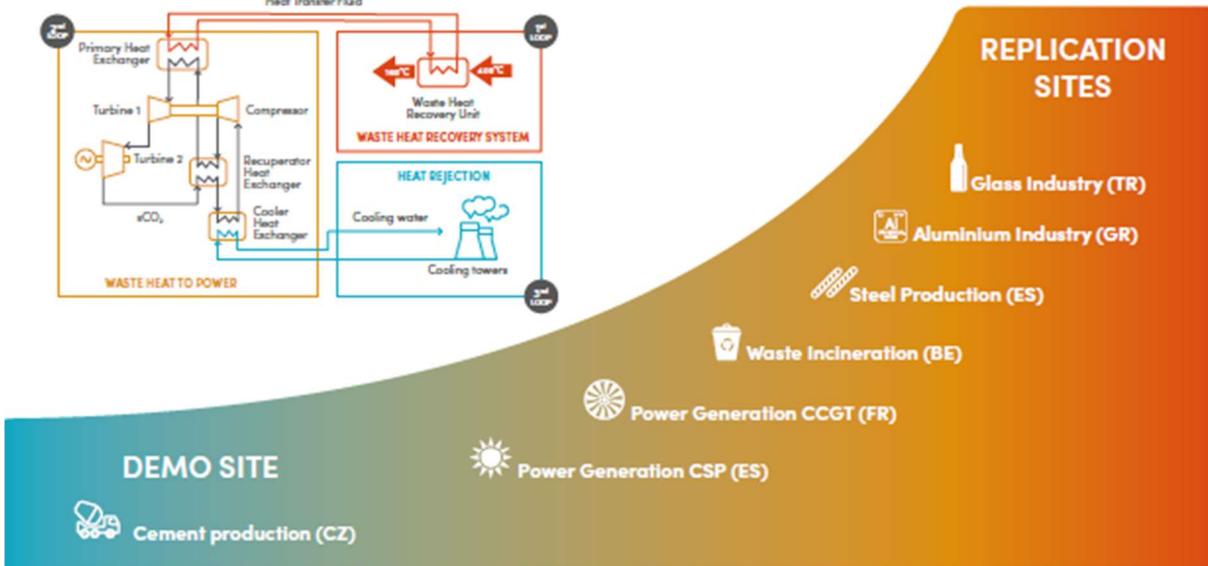
### EXPECTED IMPACTS

- Technology:** Unprecedented combination of improved power block characteristics
- Environment:** Reduction of GHG emissions & primary energy, water and material savings
- Economy:** Avoided costs of electricity, short payback period, low LCOE and CAPEX

### sCO<sub>2</sub> POWER CYCLE



### REPLICATION SITES



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Figure 5 - CO2OLHEAT project poster





## CO2OLHEAT roll-up banner

A highly graphic roll-up banner (Figure 6) has been developed to be displayed at public events, conferences and fairs. The attractive design of the roll-up banner will draw people's attention to booths and stands where CO2OLHEAT is featured, increasing altogether the dissemination of the project. Its main purpose is to provide initial basic information to the public, while increasing curiosity around the project and its goals.

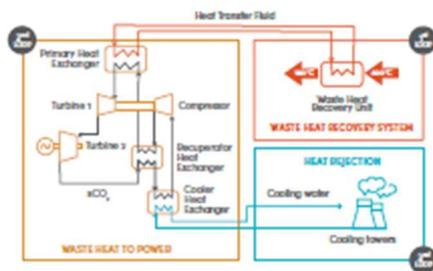
A digital version of the banner will be downloadable from the CO2OLHEAT's website (section Documentation – Dissemination materials).

The CO2OLHEAT roll-up banner will have dimensions of 210x85 cm and is structured as follow:

- Project logo;
- Highly attractive CEMEX cement plant picture (also present on the project website), featuring brief project description and key information about project duration and funding;
- Schematic drawing of the power cycle;
- Overview of the demonstration and replication sites placed in a shape that has a direct reference to the project logo;
- Partners' logos;
- Contact information (i.e. website, social media channels, email address) ;
- EU flag and a reference to EU funding and to grant agreement number.

The banner bottom was left intentionally blank as the space below the knees is considered a dead space and therefore not appropriate for information sharing.





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CO2OLHEAT  
@co2olheat

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Figure 6 - CO2OLHEAT project roll-up banner



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## Conclusions

In accordance with the other deliverables defining the project dissemination strategy, this deliverable provides information on the project logo, leaflet, poster and roll-up of the CO2OLHEAT project. They will be used by the consortium as means of raising general awareness in the communities of stakeholders relevant for the CO2OLHEAT project.

With all these measures, including a graphically appealing, easy text formats and well-structured contents, ETN and the other Consortium partners have laid the ground for an appealing dissemination campaign that attracts many visitors and will redirect to the main communication channels (website/social media).

The structure of the printed material is similar and effectively connected to the main concepts that the project would like to promote.

All the material has been created to be informative and exhaustive. The leaflet, the poster, and the roll-up banner feature the most relevant and updated information and have been structured to remain current throughout the entirety of the project. However, ETN will further update the contents of the communication materials shall the need arise and based on the feedback received by the project partners.

All the partners involved in the project will receive physical and digital copies of the communication assets so to maximise the communication and dissemination efforts, while strengthening the brand recognition of CO2OLHEAT ahead of future market uptake.

