

## Consortium partners

The consortium is formed by a collaboration of 29 partners, with CIRCE on the driver's seat. It is a multidisciplinary and well-balanced consortium integrated by 5 RTOs, 2 universities, 4 SMEs, 15 large companies and 3 associations with complementary expertise from 7 different European countries, hence guaranteeing wide dissemination of the project outcomes, the replication of the solutions and their adaptation to the different regulatory and social particularities.



## Contact



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CORALIS EU Project



[www.coralis-h2020.eu](http://www.coralis-h2020.eu)

### Project coordinator:

FUNDACIÓN CIRCE - CENTRO DE INVESTIGACION DE RECURSOS Y CONSUMOS ENERGETICOS

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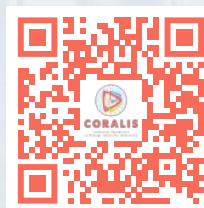
Total cost: 22.756.791,25 €

EU contribution: 17.987.565,27 €

Call: H2020-LOW-CARBON-CIRCULAR-INDUSTRIES-2020

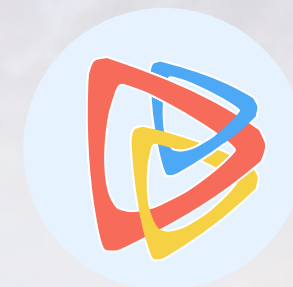
Type of action: Innovation Action

Duration: 48 months (01/10/2020 - 30/09/2024)



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# CORALIS

Industrial Symbiosis  
in Energy Intensive Industries

Creation Of value chain  
Relations through  
novel Approaches  
facilitating Long-term  
Industrial Symbiosis





## About CORALIS

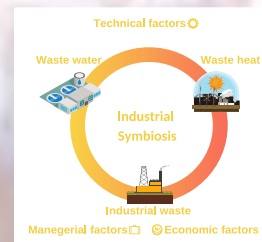
CORALIS aims at demonstrating long-term synergy models in a total of 3 industrial areas, each of them supported by an industrial symbiosis (IS) facilitator that will ensure that all technical, economic and managerial factors that should be considered to maximize the collective benefits and guarantee the continuity of the IS activity are properly addressed. For the CORALIS methodology to be perpetuated, a total of 3 industrial areas acting as followers will learn from the project results to progress in their IS readiness level and implement new IS activities after the project's end.

## Objectives

- ▶ To acquire a deeper understanding of industrial symbiosis performance and conditioning factors from the technical, economic and managerial perspective;
- ▶ To promote the design and management of industrial symbiosis projects and delivering tools for processes monitoring and data sharing;
- ▶ To enhance the profitability and sustainability of symbiotic interactions by defining new methodologies;
- ▶ To implement novel symbiotic value chains in 3 real industrial areas for their decarbonization;
- ▶ To provide technical and management guidance to 3 industrial areas in successfully exploiting identified symbiosis synergies;
- ▶ To raise awareness and ensure the exploitation of the industrial symbiosis potential in the Resource and Energy Intensive Industries (REIIs).

## The Strategy

After a deeper understanding of the preconditions that facilitate or hinder the implementation of IS (implementation enablers, tools and methods, management and communication mechanisms), the design and development of the technology enabling the IS will be carried out. The engineering works will be followed by their commissioning and demonstration under real conditions. CORALIS will support the mobilisation of local and regional stakeholders with the final aim of elaborating an action plan for each of the followers to guide the technical implementation of the case studies, after the project execution. Finally, a monitoring strategy will be executed to ensure the correct flow of information and the implementation of the enablers. Lessons learnt and an inventory of successful cases will be provided, complemented by an impact calculation with a life-cycle approach.



## Expected impacts

CORALIS will develop a set of indicators for supporting the technical, environmental and economical evaluation of IS, demonstrating how symbiotic value chains in the process industry can optimise the utilisation of various resources, including water, CO<sub>2</sub>, energy and different types of commodities, chemicals, metals and slags. CORALIS is expected to improve the energy efficiency of targeted processes in the lighthouse demonstrators by at least 15% and the reduction of waste generation by at least 15%. The approaches deployed are expected to achieve up to 30% of the total reduction of energy intensity. CO<sub>2</sub> total emission savings in the lighthouse are estimated to range between 25% and 50%, with a reduction of 1,000 ktons of CO<sub>2</sub> per year in total. Moreover, an average reduction in raw material intensity expected to be up to 20%. The CORALIS Handbook will be compiled with guidelines and recommendations to understand critical barriers affected to multiply by 10 the impact in the next 5 years.

## Demosites

### Lighthouses



#### Escombreras (Spain)

A novel process installation for KNO<sub>3</sub> production that enables circular economy and industrial symbiosis in the industrial park.



#### Höganäs (Sweden)

An integrated unit for CO<sub>2</sub> capture and waste heat recovery.



#### Brescia (Italy)

A collaborative scheme for industrial waste exchange and valorisation.



### Followers



#### Basauri (Spain)

The demonstration will assess the feasibility of a thermal energy storage system for waste heat recovery.



#### Linz (Austria)

The demonstration will widen the application of H<sub>2</sub> production.



#### Izmit (Turkey)

The demonstration will provide a feasibility assessment for the reuse of refinery spent caustic and the valorisation of waste.

