

COMPAS_sCO₂ Components and Materials Performance for Advanced Solar Supercritical CO₂ power plants

The context

The goal of this R&D European-funded (H2020) project is to develop new materials withstanding very high temperature and pressure conditions occurring in a particle/supercritical-CO₂ heat exchanger (HX). It fits to the Solar team products diversification strategy while contributing to the development of the next generation of Solar Receivers for CSP technology.

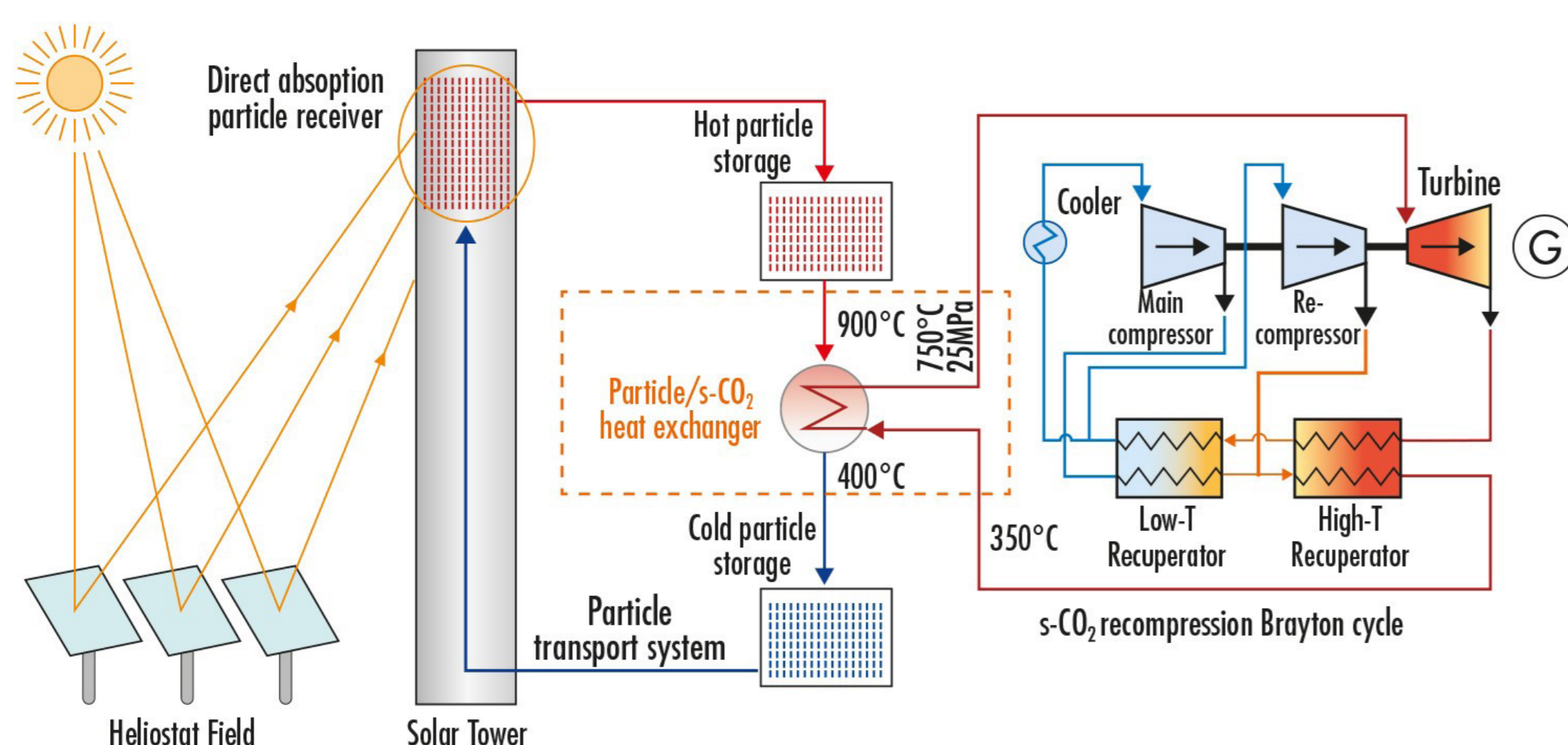
Project Description

John Cockerill Renewables scope encompasses the following activities:

- Design of both low- and high-pressure Pa-sCO₂ HX
- Supervision of new materials development and integration to an industrial-scale HX design
- Design of lab scale Pa-sCO₂ HX

Schedule

From 01/11/2020
to 31/10/2024



12 Partners

John Cockerill

Renewables (BE):

Pa-sCO₂ HX design and business plan

DLR (DE):

Project management
- solar particle cycle modelling & particle degradation

CIEMAT (ES):

Particle degradation testing

CVR (CZ):

Technology validation

DECHEMA (DE):

Interaction medium-metal

FZJ (DE):

Material performance in oxidizing and carburizing atmospheres

OCAS (BE):

Coatings and material coupons production

Sugimat (ES):

Industrial particle-sCO₂ HX survey

Saint Gobain (FR):

New particles development and production

University of

Birmingham (UK):

Development of metals

VTT (FI):

Numerical simulations of particle and materials degradation dynamics

OME (FR):

communication

Budget

Total: 6M€ & JCR: 300K€ (100% EU funding)

