

# Waste heat produces electricity



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*A concrete project to be developed in a cement factory, using supercritical CO<sub>2</sub>*



Ambra Giovannelli

Producing electricity using waste heat from an industrial site, thanks to a supercritical CO<sub>2</sub> plant. This is an operation that to date has only been attempted on test plants.

The stated objective of the “CO<sub>2</sub>OLheat” project - an H2020 project that started at the beginning of June - is to create a concrete plant that will be built and tested in a cement factory in the Czech Republic.

“The innovation inherent in the project is precisely linked to the concrete realisation of an efficient and compact plant, unique in Europe, and the integration with an existing industrial site presupposes absolute reliability,” emphasises Ambra Giovannelli of the Department of Industrial, Electronic and Mechanical Engineering of

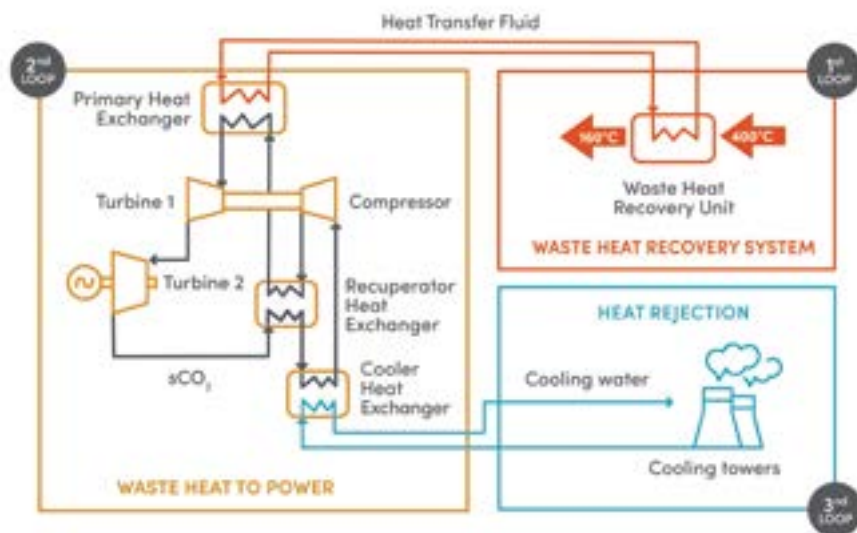
the Roma Tre University, one of the partners of “CO<sub>2</sub>OLheat”. The project brings together some of Europe’s excellence in the field of supercritical CO<sub>2</sub> plants, including several Italian companies such as Nuovo Pignone, Rina Consulting, and Enea, Roma Tre and the Politecnico di Milano. The four-year duration is necessary to follow all the plant design and construction phases.

“First of all, the plant will be designed and the innovative components manufactured - explains Giovannelli - and then assembled and sent to the cement plant”. The last two years will be devoted to integration into the industrial site and long-term testing.

The working group at the Uni-

versity of Rome is in charge of research and development: “We are mainly responsible for the technical and economic optimisation of the test plant and the benchmarking with conventional technologies, not only in the specific industrial sector we are actually going to operate in, but also in a broader context”.

If the project is successful, it is likely that CO<sub>2</sub> plants will be of great interest in reducing consumption in many other energy-intensive industries, and can also be installed where there is a shortage of water: it is no coincidence that the consortium also includes leading companies in the fields of glass, steel and aluminium production. ■



For further information: [www.co2olheat-h2020.eu](http://www.co2olheat-h2020.eu)