

TURBODEN LEADER IN THE EUROPEAN LIFE-HEATLEAP PROJECT TOWARDS A GREATER CORPORATE SUSTAINABILITY

The innovative heat recovery project from low-temperature thermal waste of ORI Martin steel plant serving the local district heating network.

Brescia, May 6th 2020

Turboden, in collaboration with **ORI Martin, CSMT** – Centro Servizi Multisetoriale Tecnologico, **Rina Consulting, COGEN Europe and A2A**, announces the starting up of the project **HeatLeap “Low-Grade Waste Heat recovery in steel-making industry by coupling of Large Heat Pump and Gas Expander”**, financed by the European Commission with the LIFE programme.

“The excellence and the innovation of Brescia do not stop despite the period characterized by an exceptional event such as the pandemic currently underway. We are proud to be able to collaborate with strategic players to carry out a virtuous circular economy project, aimed not only at recovering the waste heat from industrial processes dissipated into the atmosphere, but also at promoting the decarbonisation process. This is a key objective of the strategic vision of the European Commission for 2050 which Turboden fully subscribes.” states **Paolo Bertuzzi, CEO di Turboden**.

-The project

Turboden designs and installs an innovative **Large Heat Pump of 5-7 MWth** at ORI Martin steel plant, in order to elevate the waste heat, (by adding electrical energy) coming from the low-temperature thermal waste of the steel plant, from about the actual 70°C to 120°C, to transfer it to the A2A district heating network.

The feasibility is also studied for the installation of a **Gas Expander system** up to 1MWe, which takes advantage of the pressure drop from the gas distribution network to the plant, thus allowing ORI to produce electricity for internal self-consumption.

-The scenario

Currently in Europe about 84% of the energy needed to heat civil and industrial buildings is generated by burning fossil fuels and only 16% is produced from renewable energy.

An enormous amount of heat deriving from various types of industrial processes must be wasted and dispersed in the environment in the form of low-temperature thermal waste (about 70° C).

Overall, **it is estimated that up to 25 TWh of electricity can potentially be produced every year in Europe from the recovery of residual heat from industrial processes, now dispersed in the atmosphere.** These temperatures are too low both to be enhanced to produce electricity and for the direct reuse in the form of steam; to ensure that heat can be fed into an existing district heating network (in fact, the few cases of low-temperature district heating for new units are exceptions), the temperature must be raised in the order of 100° C.

-The project LIFE and its benefits

LIFE is a program that finances environmental sustainability projects, published annually by the Commission and which currently sees the 2020 call open with a budget of 450 million Euros. Turboden has already successfully participated in previous LIFE programs.

As a direct consequence, it is estimated that **the project prevents the emission of up to 5,750 tons of CO₂ into the atmosphere**, thus combining economic advantages and environmental and social benefits.

Turboden S.p.A., is an Italian firm and a global leader in the design, manufacture and maintenance of Organic Rankine Cycle (ORC) systems, highly suitable for distributed generation, that generate electric and thermal power exploiting multiple sources, such as renewables (biomass, geothermal energy, solar energy), traditional fuels and waste heat from industrial processes, waste incinerators, engines or gas turbines. Today Turboden expands its solutions with gas expanders and large heat pumps to play a broader role in the decarbonisation of the District Heating sector and of some energy-intensive industrial processes.

ORI Martin Founded in 1933, it developed into an electric furnace steel mill to produce continuous casting billets and hot rolled wire rod, bars in coils and alloy steel bars for special applications in the automotive sector, such as: nuts and bolts, suspension springs, torsion bars, steering components and mechanics in general. It is also fitted with installations for annealing and tempering thermal treatments.

CSMT Polo Tecnologico is a technological hub that connects companies, universities and research centers, dedicated to the propagation and transfer of technology, with particular attention to the enhancement and promotion of research, also through technical and specialized training. It favors the diffusion of original and competitive technologies and methodologies, manages and finances complex multi-sectoral projects and promotes skills and solutions in the reference markets. It develops innovation projects aimed at businesses, institutions and the territory aimed at the objectives of: Smart Plant 4.0, Smart City, Smart Land / Agrifood and Smart Building.

RINA provides a wide range of services across the Energy, Marine, Certification, Transport & Infrastructure and Industry sectors. With an expected turnover in 2019 of 465 million Euros, over 3,900 employees and 200 offices in 70 countries worldwide, RINA is a member of key international organizations and an important contributor to the development of new legislative standards.

COGEN Europe, COGEN Europe, the European Association for the Promotion of Cogeneration, is the cross-sectoral voice of the cogeneration industry. Its mission is to work with EU institutions and stakeholders to shape better policies and eliminate administrative, regulatory and market barriers to the wider use of cogeneration in Europe.

A2A is the Italian multiutility leader in environmental services and district heating and at the top in the energy, heat, networks and smart city technologies sectors.