Turboden SpA High-Level side event
At COP 28 in Dubai

December 05, 2023, hh 13:30-15:00 (1,5 h)

Italian Pavilion, Expo City Dubai UAE

Title

The role of policies, finance and technologies in energy efficiency and sustainability for the industrial sectors

How manufacturing and technology providers can support European industry's competitiveness

KEYWORDS: #EnergyEfficiency, #WasteHeatRecovery, #NetZeroIndustryACT, #HeatPumpAccelerator, #Decarbonisation, #Policies, #Finance, #Technologies

Agenda

Most energy losses in energy conversion, industrial processes, and energy consumption take the form of waste heat. Excess heat is in fact the world's largest untapped source of energy. Only in Europe, according to the latest data, excess heat amounts to 2,860 TWh/y, corresponding almost to the EU's total energy demand for heat and hot water in residential and service sector buildings[1].

Industrial plants of energy intensive industries such as cement, glass, petrochemical, non-ferrous metals and steelmaking, dissipate between 30% and 60% of the overall energy consumed as heat wasted into the atmosphere. Furthermore, most of the time, these flue gases must be cooled before being filtered and vented either with heat exchangers or by adding external air, which involve additional energy and/or water consumption.

[1] Connolly, D., et al. (2013). Heat Roadmap Europe 2: Second Pre-Study for the EU27. Department of Development and Planning, Aalborg University, p. 54

Recovering this heat for either on-site use or for DHC - District Heating & Cooling supply, could help improve energy efficiency of the site, reduce the carbon intensity per unit produced, energy costs and/or generate new revenue streams.

The waste heat recovery system based on the ORC - organic Rankine cycle **technology or large Heat Pumps represents a key solution in capturing low-temperature waste heat and valorizing it producing energy while reducing CO2 emissions –** so paving a path towards decarbonization, especially for the most energy-intensive sectors - and **it is also able to operate independently from water use.**

A first-of-its-kind waste heat recovery plant in the United Arab Emirates has been developing by Turboden S.p.A., a Mitsubishi Heavy Industries Group Company, together with ENGIE Solutions GCC, in the LAFARGE EMIRATES CEMENT (LEC) **for the production and installation of a 10MWe Waste Heat Recovery organic Rankine cycle** system at the Fujairah cement plant.

Based on a closed-loop thermodynamic cycle, **the system will help LEC avoid 29 kilotons per year of CO2 emissions from the grid – representing a reduction of 28% in power-related emissions**.

This project represents an energy-saving and CO2 reduction solution, as well as a Net Zero technology designed and developed in EU, boosting sustainability and pivotal to raising awareness of energy-intensive industries.

Objectives

This side event will offer a platform for exchange among stakeholders from hard to abate industry, technology provider, policy maker and financial institution, on challenges and opportunities in the deployment and replicability of such energy efficiency projects in different areas.

With the support of a proper policy framework, as well as public or private funds to implement sustainable development projects it will be possible to promote replicable energy efficiency projects in several countries, with the following benefits:

- **modernize hard-to-abate industries**;
- environmental benefits: waste heat recovery reduces greenhouse gases (GHG) and harmful emissions such as SOx and NOx, **reduces water consumption**, with huge benefits for the climate and air quality;
- **socio-economic benefits**: waste heat recovery helps boost the competitiveness of European industry and supports the decarbonization of heat and power for local communities, businesses, and public authorities;
- **energy security**: waste heat recovery reduces the dependence on fossil fuels, such as gas, providing a reliable source of heat and/or power for surrounding consumers;
- **reduction in energy cost**: waste heat recovery secures a fixed price of energy for more than 20 years and the impact of energy cost increase is reduced;
- **European policy benefits**: waste heat recovery is a crucial solution for Europe to achieve its climate and energy goals and it represents a Net Zero technology designed and developed in EU

Expected Outcomes

All participants of the Conference are invited to bring their contributions and expertise to provide continued

support in creating effective investment environments for a scaled deployment of energy efficiency solutions, along with disseminating key models and best-case solutions for next implementations at a large scale.

These kinds of technologies not only should play a crucial role in worldwide energy efficiency and transition but also represent a blueprint for international partnership and multilateral approach.

Structure and Target Audience

The roundtable is structured as a high-level eco-tech conference session, which will follow an institutional overview of main topics related to energy efficiency and future energy worldwide scenarios promoted by the highest representatives of Italian institutions.

The target audience of the Conference is experts, policymakers, high-level representatives of public, private, intergovernmental, and non-governmental organizations operating that are committed to scaling up energy efficiency deployment.

Participants

Side event – Italian Pavilion, Blue Zone

First part (institutional remarks)

- **H.E. Lorenzo Fanara** - Italian Ambassador in United Arab Emirates
  Embassy Institutional greetings
- **H.E. Gilberto Pichetto Fratin** Italian Minister of the Environment and Energy Security (TBC)
  Minister Opening speech

Second part (round table)

- **European Commission (TBD)**
- **Laura Cozzi** Director of Sustainability, Technology and Outlooks – IEA International Energy Agency
- **Gianpiero Nacci** Director of the Climate Strategy and Delivery team EBRD - European Bank for Reconstruction and Development
- **Paolo Bertuzzi**, CEO and Managing Director Turboden S.p.A.
- **Olivier Milhaud**, General Manager of Lafarge Emirates Cement
- **Ian Harfield**, Managing Director, ENGIE Solutions GCC (TBC)
- **Sergio Molisani,** Chief International Asset Officer, SNAL S.p.A. (TBC)

Moderator: Nikolaus Kurmayer – Euroactive (TBC)

NETWORKING COFFEE