

## **PRESS RELEASE**

### **Turboden supplies the largest ORC biomass unit in UK**

*A 6.5 MW power only unit for Kantor Energy Ltd will be installed in Sheffield, UK.*

Brescia, November 10<sup>th</sup>, 2015 – Turboden, a group company of Mitsubishi Heavy Industries (MHI), leader in Organic Rankine Cycle (ORC) turbogenerators, for distributed power generation employing renewable sources and waste heat, was selected to supply a **6.5 MW power only unit for the largest ORC biomass power plant** in Sheffield, UK.

**Kantor Energy Ltd.**, a specialist district heating design & building engineering, the EPC principal contractor of the project, selected **Turboden Srl** to supply the clean electricity generation equipment, the **6.5 MW ORC turbogenerator with air condensers**.

The project will be built on a brownfield site in Holbrook Industrial Estate, Turboden's ORC unit will generate more than 6.5 MW of electricity, utilizing around **55,000 tonnes of waste timber wood** from demolition sites as carbon neutral fuel.

The Turboden ORC system is expected to **cut greenhouse emissions** by approximately **12,700 tonnes of CO<sub>2</sub>e per year**, the equivalent of taking **5,700 cars off the road** for the life of the project.

The Sheffield facility will also supply renewable heat to the local district heating network, which will warm **over 6,700 houses and commercial properties** in the area.

Once in operation, the plant will sell electricity to **GDF Suez UK** under a long-term power off take agreement.

**Veolia Energy Services Ltd** has been awarded the long-term operation and maintenance contract on behalf of **Equitix**, whose services involve delivery and managing infrastructure projects from bidding and closing through to construction and service provision.

The achievement of the project has been possible thanks the investment of £30 million from the **UK Green Investment Bank (GIB)** and **Equitix**. The investment was made to utilize innovative technologies, create new sources of green energy, cut carbon emissions, and create important local benefits for the communities.

The project was promoted by **UYE (UK) Ltd**, a local private energy development company who owns and operate low carbon, sustainable energy generation and heat networks.

In the past couple of years, Turboden has provided the largest ORC biomass plants ever developed in the world. In addition to the ORC system for Sheffield, four 6.5 MW ORC units have been supplied to West Fraser, a leading integrated wood products company in the Canadian province of British Columbia, have been operating since the beginning of 2015. Also, the world's largest biomass-fed ORC unit, an 8 MW ORC module, has been supplied to Maine Woods Pellet Company in Athens, Maine.

## **Benefits and advantages of Turboden ORC units**

**Compared to a traditional steam-based cycle**, the ORC system provides an improvement of the net power output, leveraging the perfect match between the heat source and the working fluid selected. Since 1980 Turboden ORCs have been selected thanks to the proven track record of reliability, ease of operation, long life of the turbine and other equipment, high availability and optimal efficiency even at partial load, reduced maintenance and operational costs. These features result in better project returns as compared to tradition Steam Rankine systems.

Starting from 2008, Turboden has supplied 7 other power plants in UK, with a total power capacity of 20 MW electric: a 2.2 MW ORC module for the pellet industry of Land Energy Ltd, in Girvan; two tri-generation units in London, a 1 MW and a 1.8 MW each, supplied to BSkyB Studios and Heathrow airport, that produce both heat, power and cooling, three cogeneration units (1 MW, 0.6 MW and 3 MW) of which discharged heat is exploited in a greenhouse, a wood drying process and a district heating, and a 4 MW heat recovery unit from reciprocating engines, first example of direct heat exchange with ORC solution from multiple heat sources. Currently there are more than 260 Turboden ORC plants in operation worldwide, from biomass to geothermal, from heat recovery to waste to energy applications, and further 50 plants under construction. Turboden ORC units have demonstrated an average availability exceeding 98% with more than 7,000,000 (estimated) operated hours.

Turboden, a Mitsubishi Heavy Industries company, is an Italian company and a global leader in the design, manufacture, and service of Organic Rankine Cycle (ORC) turbogenerators, which harness heat to generate electric and thermal power from renewable sources, including biomass, geothermal and solar energy and waste heat from industrial processes, waste incinerators, engines or gas turbines. Turboden has more than 310 plants in 33 countries and offers turbogenerators from 200 kW to 20 MWe. [www.turboden.com](http://www.turboden.com)

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