

PRESS RELEASE

North American wood companies have the world largest ORC-based biomass power plants

West Fraser's 2x13 MW biomass power plants operating commercially since beginning of 2015.

Maine Wood Pellet's 8 MW power unit to start up early in 2016 in the United States.

Brescia, October 6th, 2015 – Turboden, a group company of Mitsubishi Heavy Industries (MHI), leader in Organic Rankine Cycle (ORC) power systems for distributed generation from renewable sources and waste heat, announces the **successful commercial operation** of two biomass-fed ORC units supplied to **West Fraser**, a leading integrated wood products company based in the Canadian province of British Columbia. A successful proponent under BC Hydro's Phase 2 Bioenergy call, West Fraser's **four 6.5 MW ORC turbogenerators** are installed at **Fraser Lake** and **Chetwynd sawmills**. The power systems have a total power capacity of 13 MW at each site to supply electricity to BC Hydro.

In the West Fraser projects, the heat of flue gas from biomass combustion is conveyed in a closed-loop system to the ORC unit which converts thermal energy into electricity. The lower temperature waste heat is released to the environment by means of evaporative cooling towers.

In addition to West Fraser's plants, Turboden is starting up the **world largest biomass-fed ORC power unit**, supplied to **Maine Woods Pellet Company** for its pellet production facility in Athens, Maine. The ORC system will produce **8 MW** by converting the heat of thermal oil generated by wood residues from debarking and chipping operations. The start-up of the plant is scheduled for March 2016. **Maine Woods Pellet** is the second project in the United States for Turboden, after the 1 MW ORC unit installed at **Albany County Sewer District** in Menands, New York.

West Fraser and Maine Wood Pellet plants are important milestones for Turboden's advancement in the North American market. **Currently, the company is present with 6 references in Canada and 2 in the United States.**

The growth path in North America - with a series of projects where Turboden ORCs were selected thanks to a track record of efficiency, reliability, ease of operation and low maintenance costs - was marked by the **first unit** installed and operating in **Rosetown, Saskatchewan**, in Canada, in November 2011. **Peak performance of the West Fraser ORC systems has exceeded the design.**

Along this path, Turboden received orders from several power systems in North America with an **overall capacity to date of about 45 MW**. Furthermore, important power systems equipped with a Turboden ORC are installed in other prestigious wood product companies in Canada. A **2.2 MW ORC** unit is operating in **Vanderhoof, British Columbia** at **Nechako Lumber (Sinclair Group)** since February 2013, a **3 MW ORC** converts heat to power at **Manning Diversified Forest Product (MDFP)** wood residue biomass plant in **Northern Alberta** since the beginning of 2015, another **3 MW ORC module** is under construction for Canfor

Corporation in Chetwynd, British Columbia. This is a pellet plant that will be operated in partnership with Pacific Bioenergy Corporation.

Turboden ORC technology is highly beneficial to the Canadian industry and perfectly fits within the objectives of local companies, government institutions, and provinces. For these reasons, the applications of this technology can represent a driver for investments in the industrial sector. Along with creation of new job opportunities, innovative and safe solutions, companies will be sustainable and competitive by cutting energy costs and reducing carbon emissions.

Turboden, a Mitsubishi Heavy Industries company, is an Italian company and a global leader in the design, manufacture, and supply of Organic Rankine Cycle (ORC) turbo-generators, 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 300 plants in 32 countries and offers turbo-generators from 200 kW_e to 15MW_e. www.turboden.com

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