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PRESS RELEASE

Turboden completed the commissioning of the 17.5 MWe Velika Ciglena Geothermal Plant.

After only four days of commissioning, the plant carried out the nominal load test.

In December 2018 Turboden started-up the largest ORC system in Europe of **17.5 MWe** in the Velika Ciglena geothermal power plant, Croatia, for the Turkish customer **Geoen – MB Holding**.

The Velika Ciglena project exploits steam and hot water at 170°C to produce electricity to feed the local power grid.

Mr. Paolo Bertuzzi, Turboden CEO, states: “First of all, I want to thank all Turboden employees who took part of this new success and also Geoen – MB Holding team for the close cooperation during the development phases of this project.

The strong commitment of Turboden in realizing dependable and efficient geothermal solutions has been confirmed by the implementation of the nominal test in a short time.”

The region of Velika Ciglena is situated in Bjelovar subdepression, the north east of Croatia.

The reservoir was discovered in 1990 by INA-Naftaplin, during an underground exploration for oil. The oil was never found, instead, a promising potential for geothermal energy was discovered.

Velika Ciglena project, with the 17.5 MW ORC turbine, in 2016 received the Best Innovation Award for its innovative design by Mitsubishi Heavy Industries (5 stage, low rpm, and proprietary design). It proves the technological reference of Turboden as main producer of large binary ORC plants. The installed capacity is expected to growth due to a further similar projects.

To date, Turboden fleet counts more than 370 ORC plants worldwide with a total capacity of 604 MWe. Fourteen plants exploit a geothermal source to produce electric power reaching 110 MWe globally. These data confirm Turboden success with field-proven performances and reliability.

Turboden, a Mitsubishi Heavy Industries company, is an Italian firm and a global leader in the design, manufacture and maintenance of Organic Rankine Cycle (ORC) systems up to 20 MWe, highly suitable for distributed power generation. ORC systems can 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. www.turboden.com

Geoen-MB Holding was founded in 1968 in the southeast part of Turkey, and operates in many fields including energy, building construction, construction of greenhouses and textiles. MB Holding is the first pioneering geothermal developer that implemented a binary plant in Turkey.

***Organic Rankine Cycle**: The Rankine Cycle is a thermodynamic cycle that converts heat into work. The heat is supplied to a closed loop, which typically uses water as working fluid. The Organic Rankine Cycle's principle is based on a turbogenerator working as a conventional steam turbine to transform thermal energy into mechanical energy and finally into electric energy through an electrical generator. Instead of generating steam from water, the ORC-system vaporizes an organic fluid, characterized by a molecular mass higher than that of water, which leads to a slower rotation of the turbine, lower pressures and no erosion of the metal parts and blades.