

## **Title: Italian Turboden continues making inroads in new geothermal markets**

In late 2018, a new country joined the ranks of countries generating electricity using geothermal resources. Croatia added its first geothermal power plant at Velika Ciglena, a 17.5 MW plant built by the Italian company Turboden.

Turboden has made a name for itself in recent years with successful projects in Germany, now Croatia and beyond.

Acquired by Mitsubishi Heavy Industries in 2013, the company has gradually increased its turbine offerings to larger-scale units building on the experience and support of its Japanese majority shareholders. Earlier, the company was able to go up to 10 MW in capacity for single turbines, but is now able to offer sizes of up to 20 MW. Today, Turboden offers turbine/generator packages of 1 MW up to 20 MW with axial turbines at high efficiency. Each turbine is tailor made, providing flexibility on the number of stages, and the selection of fluid depending on the intake from the resource. In 2015, Mitsubishi Heavy Industries internally recognized the turbines of Turboden as the best innovation of the year (<https://www.turboden.com/facts>).

In an interview with Joseph Bonafin, head of geothermal sales at Turboden, he explains the uniqueness of the project for Turboden, which comprises a 17.5 MW turbine, the largest-single turbine the company has built as well as being the largest in Europe.

Turboden won the contract in 2015, but faced some delays due to bureaucratic reasons. The plant started commercial operation in December 2018 after a month of commissioning work.

The company has achieved more in 2018, as Joseph Bonafin reports. In December 2018, it finished the construction of the 14 MW Lightning Dock plant in New Mexico, United States for the geothermal developer and operator Cyrq Energy. The plant adds to an existing power plant by Cyrq Energy and

features an air-cooled condenser. The plant was erected on site within four months, on an overall schedule of 17 months, in consideration of the importance of starting the plant up before the year-end due to the PPA.

Lightning Dock is Turboden's first geothermal plant in the United States, while it had previously delivered power generation units for biomass, oil & gas and waste heat applications.

In 2018, Turboden was also awarded a geothermal power project for a private developer in Alsace, France. Previously, the company successfully delivered and started a geothermal plant at Soultz-sous-Forêts, Alsace/ France.

Additionally, Turboden erected a new plant in Holzkirchen in Bavaria/ Germany, which is currently in startup phase and expected to start commercial operation in the coming weeks.

In a follow up article, we will learn more on the company's activities in Africa, Germany, Latin America, and its plans as part of a new approach to geothermal development in Indonesia.