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Performance of EXERGY's new geothermal plant in Turkey exceeds expectations

Karkey Geothermal Plant in Turkey (Source: Courtesy of EXERGY)

Francisco Rojas19 May 2016

The Umurlu I 12 MW geothermal plant with a first "Made in Turkey" turbine now running with performances between 8 up to 12 % higher than guaranteed figures

EXERGY, the Italian technology leader in the design, engineering and manufacturing of Organic Rankine Cycle power plants with the pioneering Radial Outflow Turbine technology, announces Umurlu I geothermal plant,

commissioned in the late 2015 in Turkey for the client KARKEY Karadeniz Elektrik Uretim is successfully in operation producing clean power with higher efficiency than the expected results.

The performance test conducted with several measurements in the past week, validated by the third party company Power Engineers, confirmed the plant is running with over performances between 8 and 12% due to the Radial Outflow Turbine, and is therefore producing up to 1.5 MWe more than guaranteed value to the client.

This power increase over the guaranteed figure, combined with the increased FIT for made in Turkey production of the turbine and auxiliary equipment provides the customer with revenues approximately 25% greater than initially anticipated.

The Umurlu I plant represents a double achievement for EXERGY. It proves the positive performance and higher efficiency of the Radial Outflow Turbine technology on large size binary plant configuration. Also it confirms the quality and capability of the Turkish Exergy factory in Izmir to satisfy best the needs of the local market, supplying the first certified Made in Turkey turbine in the market.

Located in the geothermal area of Umurlu, near Denizli Umurlu I is the first of two 12 MW binary plants in EXERGY's contract with Karkey. The second 12 MW plant will be operational in the second half of 2016 delivering the client a total power output of 24 MW. The solution provided by EXERGY utilizes an ORC module equipped with two Radial Outflow Turbines connected to a common generator and an air cooled system sized to maximize the efficiency of the plant.

Claudio Spadacini, EXERGY's CEO and founder commented on this brilliant result: "Karkey project has been another challenging opportunity to test EXERGY's capability in two key areas, using the ROT on a larger scale plant, and fulfilling the difficult criteria required to gain a higher Feed in Tariff by localling manufacturing this revolutionary technology. The success on both fronts helps confirming the ROT superior efficiency and cement Exergy's position as a leader in the Turkish market"