

EXERGY's ORC technology proves higher efficiency and profitability in clean power generation

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

Olgiate Olona, 17 May 2016 – **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.

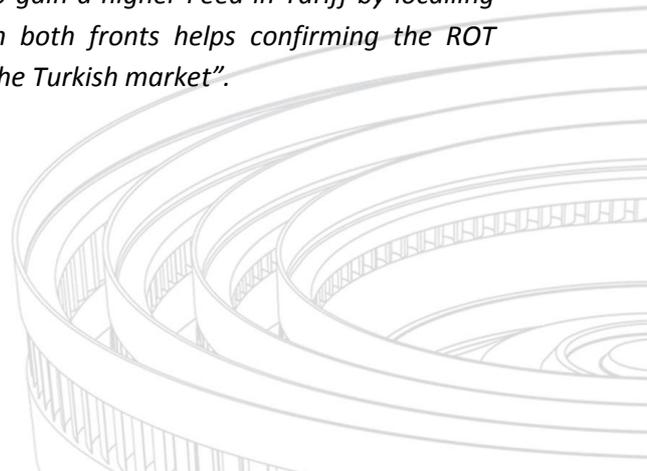
The performance test conducted with several measurements in the past week, validated by the third party company **Power Engineers**, confirmed the plant is running with over performances between **8** and **12%** due to the Radial Outflow Turbine, and is therefore producing up to **1.5 MWe** more than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



EXERGY is the developer and manufacturer of Organic Rankine Cycle (ORC) turbines with the pioneering Radial Outflow Turbine technology. **EXERGY's** proprietary technologies, covered by a number of patents allow for greater energy production via the exploitation of previously unusable heat sources from geothermal, waste heat from industry, biomass and concentrated solar power. **EXERGY** are part of the Maccaferri Industrial Group and sitting within the SECI Energia holding. From the headquarters in the north of Italy (Milan), **EXERGY** export and implement its technology worldwide with a particular focus on high growth potential markets such as Turkey, South-east Asia, North and South America. Website:

The **Maccaferri Industrial Group** is headed by the family holding company S.E.C.I, a company that since 1949 operates in several business areas through its seven divisions: Officine Maccaferri (environmental engineering), Manifatture Sigaro Toscano (tobacco), Eridania Sadam (food and agro-industry), Samp (mechanical engineering), Seci Real Estate (real estate and construction), Seci Energia (energy). The Group, chaired by Gaetano Maccaferri, is present in the world with 58 factories, with a turnover of 1.191 million euro in 2015.

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