

Turkey's geothermal energy sources get a boost in profitability with EXERGY's "Made in Turkey" innovative technology

In 2009 EXERGY launched onto the market a leading edge technology, for geothermal and waste heat electrical energy generation. Turkey is EXERGY's most important market and the company aims to broaden its business in this area thanks to a Made in Turkey production.

The worldwide demand for **efficient** and **environmental sustainable energy** is undergoing a period of rapid growth. Enormous potential can be found in the areas and countries with a high electric demand and with favorable regulatory framework encouraging investment in the renewable resources and energy optimization. Turkey is a region with a great potential of power production that can be developed from geothermal resources, estimated at between **2.000 MWe** and **4.500 MWe** in the future years.

This great potential that **EXERGY** can help exploit. This Italian Company launched into the Turkish market **Organic Rankine Cycle Systems** with the innovative **Radial Outflow Turbine**.

Organic Rankine Cycle systems are used for power production from renewable sources (geothermal, biomass and solar) and for waste heat recovery for medium and low temperature applications such as engines and industry. These systems transform a source of heat into electricity and are efficient, flexible, easy to install and maintain. EXERGY's ORC solution using the proprietary Radial Outflow Turbine (ROT), covered by a number of patents, is a **pioneering technological breakthrough**. Thanks to its configuration, different from the other turbines used in the ORC market, the ROT converts the energy in an ORC system with higher efficiency than the competing technologies giving an increased profitability to the client.

Following the introduction of the ROT innovation EXERGY has experienced a solid and consistent year on year growth becoming a recognized leader and game changer in the ORC market as well as **the number one ORC supplier in Turkey for geothermal applications**.

Following this success in Turkey, EXERGY established in July 2014 a 100% wholly owned **Turkish subsidiary company, EXERGY Turkey AS**. Based in the city of Izmir, with a workforce of **28 people**, this factory is responsible for the **local manufacturing of the Radial Outflow Turbine** and houses a local service team and equipment. Providing local manufacturing, transferring jobs and expertise to Turkey, EXERGY can better serve the needs of the Turkish market and grant its clients a higher profitability due to a government supported increased electricity sales price. As the first ORC provider with a certified Made in Turkey production, EXERGY has already been able to offer a **higher feed-in-tariff** to one of its client in the geothermal sector. An advantage that can be translated in a **12% increase in revenues** for the client. And a further boost to the Turkish economy with both direct employees and suppliers working in this high technology sector.



EXERGY's CEO, **Claudio Spadacini**, underlines: "Since its inception EXERGY Turkey has been working hard in order to offer the local market a leading edge and competitive technology. We have fulfilled a strict certification procedure, meeting difficult criteria and therefore we are delighted that we are able today to offer a certified local manufacturing for our revolutionary technology. Our idea for the future is to continue developing our Turkish manufacturing facility producing for the local market as well as making it a production hub to export in the nearer markets. At the moment we have another **20 Turkish Radial Outflow Turbine under construction** already for the existing project backlog".

Today EXERGY has the greatest, sold and under construction, power generation capacity in Turkey with approximately **280 MW in the geothermal**. The most recent contract signed in 2015 was for the sale of a 24 MW geothermal binary plant to Bestepeler Enerji Üretim Ticaret A.Ş. In 2015 over **85 million dollars** of contracts were signed world wide.

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.

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) and Gnosis (biotechnology). The Group, chaired by Gaetano Maccaferri, is present in the world with 57 factories, with a turnover of 1.102 million euro in 2014.