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ThinkGeoEnergy interviews EXERGY's CEO, Claudio Spadacini



EXERGY's CEO, Mr. Claudio Spadacini gives TGE an exclusive interview providing insights regarding the firm's current operations in the geothermal market.

ThinkGeoEnergy has had the pleasure of interviewing EXERGY's CEO, Mr. Claudio Spadacini regarding the recent developments from the firm's operations in Turkey, the current state of the geothermal industry among other topics.

EXERGY designs, manufactures, supplies and operates Organic Rankine Cycle (ORC) systems for geothermal, waste heat recovery, biomass and solar (CSP) applications. The firm was founded in 2009 by Claudio Spadacini based on a clear goal, the creation of a turbine that could utilize lower quality heat sources and convert it into energy, which was envisioned by the firm's founder and CEO Mr. Spadacini.

1 – With the announcement of the next Exergy geothermal plant starting operations, the company seems to showcase a strong market position in Turkey. What have been key success factors for Exergy for its geothermal clients in Turkey?

In the last 3 years we gained a consistent market share in Turkey and we can actually say today we are the first ORC solution provider in Turkey. The reason for our success can be found first of all in the competitiveness and validity of our core technology that, as the case of the ACKA plant proved, can deliver higher performances both as efficiency and flexibility to adapt to the



most challenging conditions. Secondly, our bold choice to set up a Turkish subsidiary with local facilities to enhance local production has been appreciated by the Turkish clients and has given us another advantage on competitors. Being present on the territory, producing there, allow us to offer speed of response and flexibility to the customer needs as well as economical benefit deriving from higher feed in tariff thanks to our Made in Turkey production.

2 – Exergy has been very vocal of its technological achievements for its turbines. Can you maybe shortly describe what are the key selling points for turbines from Exergy?

The key selling point of the EXERGY's Radial Outflow Turbine is its capability to offer higher efficiency and flexibility than the competing technology on the market. This translates for the clients in the third unique advantage of cost effectiveness.

3- Italy has been a pioneer in geothermal development. How important has been the Italian geothermal know-how in the development of Exergy and its turbines?

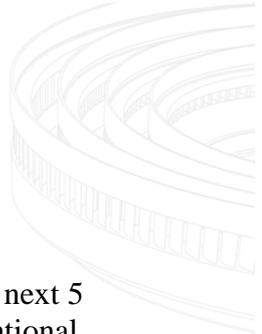
No doubt the pioneering development of EXERGY's technology has found its fertile ground to be conceived leveraging the Italian context and know-how already acquired in this field. EXERGY's pioneering technology derives from the inventiveness, the experience, the passion and commitment of Italian innovative engineers. We are very proud of our R&D key distinguishing features. We work to continuously improve our technology also enrolling new young talented minds from the most prestigious Italian universities.

4 – What is part of the overall Exergy solution for clients in the geothermal sector? Are plants provided on turn-key basis?

The EXERGY solution for geothermal application is based on our Radial Outflow Turbine technology and is available for low and medium enthalpy applications, starting from 90 C° to beyond the 200 C°. Flexibility is a key feature of our offer. Our plants can range from standard 300 kw packages up to 100 MW tailored design plants and our ROT technology is adaptable to diverse geothermal fluid conditions in term of flow, temperature and constituents. We can offer the client turn-key solutions undertaking internally the design, manufacturing and installation of the plant and even going beyond, granting a superior and qualified after sales service to maintain optimal operating condition of the plant.

5- Geothermal power plants are only part of what Exergy does, how important are other sectors such as waste-heat for Exergy?

The geothermal sector has been up to now the most successful application but our ORC systems are ideally suited for recovering waste and exhaust heat from industrial processes, both from engines and small gas turbine and for cogeneration purposes from Biomass. The waste heat



recovery in particular is an interesting market, which is expected to grow two-fold in the next 5 years under the rising commitment of the industries to reduce energy consumption, operational costs and carbon emissions. This market is the second one for EXERGY after the geothermal and our plan for the future is to better target our offer worldwide for these applications.

6 – If you are to compare geothermal to e.g. the waste-heat market, what is the more approachable market for Exergy?

For us the geothermal, due also to our reference portfolio and experience is the more approachable. We are now a recognized player in the geothermal sector and this helps us coming into contact with potential clients more easily. Waste-heat market is a bit more difficult to approach but we are eager to better develop our business in this sector because we know our technology can be successfully applied to it.

7 – How do you see the competitiveness of geothermal in the overall energy market?

I see a very promising future for geothermal energy. Increasing demand of renewable energy sources together with net regulation requirements, make the geothermal energy, as ‘base load’ and ‘renewable’, the best solution for those needs. Moreover the number and skills of geothermal power plants developers is continuously increasing and this will encourage even more the competitiveness

8 – Geothermal energy does not get sufficient attention in the discussions on renewable energy technologies. What could the geothermal sector do to improve its profile, visibility and standing?

Education at a government and large industry level remains a key point, Secondly the increasing number of real application around the world, demonstrating the advantages of the geothermal power, will surely boost the attention regarding this kind of technology encouraging government and industry to invest in this direction. Also promoting more effective marketing and communication campaign explaining the huge benefits and advantages that could derive from utilizing geothermal sources would be important.

About Claudio Spadacini:

Claudio Spadacini earned his Master’s Degree in Mechanical Engineering at Politecnico di Milano. During this time he wrote a thesis on ORC cycles and thermal stability of organic fluids, and received the ‘Premio Sesini’ award, presented to the top student of the academic year. With 15 years’ work experience in the field of renewable energy and heat recovery applications, Claudio is a recognised expert in ORC cycle optimization and design. He has authored multiple articles and papers on system engineering and energy recovery applications, and has developed a



simulation software for ORC cycles. Today Claudio is a member of the ASME IGTI – ORC Power System Committee and served on the scientific panel for ORC 2013. He was named Geothermal Person of the Year at the 2013 World GeoPower Markets Awards. Prior to founding EXERGY, Claudio was the Chief Technical Officer for Swiss company THERMOSELECT.

About EXERGY:

EXERGY designs, manufactures, supplies and operates Organic Rankine Cycle (ORC) systems for geothermal, waste heat recovery, biomass and solar (CSP) applications. Based in Italy, they have a custom and unique product, the Radial Outflow Turbine that operates exceptionally well at low heat levels.

The firm was founded in 2009 behind a clear goal, the creation of a turbine that could utilize lower quality heat sources and convert it into energy, which was envisioned by the firm's CEO Mr. Spadacini. After years of research and testing, their vision was realized and the Radial Outflow Turbine was launched into the marketplace and marking the start of the company's operations. Since then, EXERGY has grown surely and steadily, entering marketplaces across the globe and providing turnkey solutions and services to customers in all stages of the geothermal value chain.