Keynote Speaker: **Sara Montomoli**

Head of Geothermal Innovation, Enel Green Power

I was born in Italy – Volterra –, and grown up in Pomarance, the municipality where Larderello geothermal power plants are located. I studied Chemical Engineering at Università degli Studi di Pisa, obtaining the master's degree in chemical engineering in 2008. After a short collaboration with Università di Pisa, in the same year I was hired by EnelGreenPower in the Geothermal Operation&Maintenace unit. From 2010 to 2011 I have been responsible of the operation team within the Larderello geothermal area (8 power plants – one of the 4 geothermal geographical areas in which our power plants are divided). From 2012 to 2018 I have been Director of 14 geothermal power plants (included the first hybrid Geothermal&Biomass Cornia2 power plnat) and their related steam network within the Lago geothermal area. Since January 2019 I am responsible of the Geothermal Innovation unit. I am also board member of EGEC (European Geothermal Energy Council) and ETIP-DG (European Technology & Innovation Platform on Deep Geothermal).

"Geothermal exploitation in Enel Green Power – a history of sustainable development and new challenges for the future"

Geothermal exploitation started in Italy more than 200 years ago in 1818, when Francesco Giacomo Larderel, a young engineer and entrepreneur of French origin, established his plant in Montecerboli to extract boric acid to produce boron for chemical and pharmaceutical uses. That date marked the day the global geothermal industry came into being. The next great step forward took place almost a century later. It was pioneered by Piero Ginori Conti, the heir to both Larderel's company and his inventive spirit: his idea was to exploit geothermal vapour

as a source of energy. On 4 July 1904 he used a simple generator consisting of a dynamo running off geothermal heat to successfully turn on five light bulbs.

It was a turning point for the geothermal industry, which passed from chemical use to energy source. It was also an important marker in the history of electricity and sustainability: for the first time ever, man had generated electricity using the renewable resources from the Earth's interior.

Since then, continual technological innovation has made geothermal energy a sustainable solution used in numerous countries and has given it a special place among the Enel Group's renewable source success stories. Technological excellence in the geothermal sector allows Enel Green Power to take innovative paths and to constantly improve activity on all fronts, from the efficiency of the structures to digitalization processes and environmental positioning. The first geothermal center in South America and the highest in the world was inaugurated in 2017 in Ollagüe on the Andean plateau, the Cerro Pabellón plant in Chile. Also the integration of geothermal energy with power from other renewable sources is one of the most distinctive characteristics of Enel Green Power innovation. The Stillwater plant in Nevada is the first in the world to combine three different technologies: geothermal, solar thermal and photovoltaic. In Utah the geothermal plant in Cove Fort is boosted with extra power from a hydroelectric generator that reuses the water in the geothermal well. In Castelnuovo Val di Cecina in Italy, Enel Green Power combined the geothermal power plant Cornia 2 with a biomass plant, creating a unique complex, the first of its kind in the world.

Enel Green Power has a strong commitment on encouraging also the development of activities that can give value to the local communities increasing the social acceptability of geothermal power plants. Valuable examples are the beer factory, the cheese factory and the various greenhouses that are improving their business using the geothermal heat. Also initiatives for the CO2 reuse, such as the algae cultivation, are promoted by Enel Green Power.

In a rapidly changing world, where sensitivity to environmental and sustainability matters is growing rapidly, where the attention on CO2 emissions is raising day by day and where regulations are starting to incorporate these issues, it is necessary to enhance these aspects, combining awareness of the future with that of the past. It’s a fitting way to remember the pioneering enterprise of Larderel and promote the further development of geothermal industry: two centuries of history and a future of sustainability.