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ENEL GREEN POWER INAUGURATES WORLD'S FIRST SPIRULINA ALGAE GREENHOUSE POWERED BY GEOTHERMY

Siena, October 13th, 2017 – Today, Enel Green Power (EGP) inaugurated the world's first geothermal-powered greenhouse cultivating Spirulina algae thanks to the renewable energy from the adjacent Chiusdino power plant, in the province of Siena, Tuscany.

The project stems from the agreement signed in January by EGP and the Consorzio per lo Sviluppo delle Aree Geotermiche (Co.Svi.G. or *Consortium for the Development of Geothermal Areas*) for experimental activities on geothermal resources applied to the cultivation of algae.

EGP and Co.Svi.G. invested around 100,000 euros each in the project. The aim of the initiative is to showcase the potential of geothermal heat in sectors other than power generation, while creating new environmentally-friendly job and income opportunities. The results of this pilot project are due to be available in early summer 2018.

The heat required to grow the algae in the 125 sqm experimental greenhouse is a by-product of EGP's geothermal generation activities, avoiding the need to build a designated heating facility for the greenhouse. A heat exchanger receives hot water from the Chiusdino geothermal plant and transfers it to the greenhouse's tanks where the algae are grown at an optimal temperature between 25° and 35° C.

Other players involved in the algae cultivation project are the University of Florence and Italy's National Research Council (CNR).

The cultivation of Spirulina has great commercial value with a global production of around 90,000 tonnes per year, almost exclusively concentrated in Asia (source: FAO), and is essential for the production of certain high added value goods absorbed by American niche markets (food ingredients, health foods, biofuels, cosmetics and pharmaceuticals). Spirulina has been catching on in Europe in the past few years, resulting in higher demand and applications within the fields of bio-fertiliser, bioremediation, wastewater treatment and in the chemical industry.

The geothermal power plant at Chiusdino, which was inaugurated in 2011, has an installed capacity of 20 MW, is able to generate more than 150 million KWh per year, equivalent to the electricity consumption of 70,000 households. The renewable energy generated by the plant is capable of avoiding the emission of around 100,000 tonnes of CO₂ and of saving 32,000 TOE (tonnes of oil equivalent) per year.

EGP is the world's first integrated geothermal operator managing a total installed capacity of more than 850 MW in Italy, the United States and Chile.



Enel Green Power, the renewable energies division of the Enel Group, is dedicated to the development and operation of renewables across the world, with a presence in Europe, the Americas, Asia, Africa and Oceania. Enel Green Power is a global leader in the green energy sector with a managed capacity of around 39 GW across a generation mix that includes wind, solar, geothermal, biomass and hydropower, and is at the forefront of integrating innovative technologies like storage systems into renewable power plants.