

South Hungarian EGS Demonstration **NER300**

The project

Technology category: Geothermal energy

Location: Battonya, Hungary

Max. NER 300 funding: EUR 39.3 million

Final investment decision: December 2016

Entry into operation: December 2018

State of advancement

The project is in the exploration phase with preparations for work on-site being finalised.

Outlook for coming year

The outlook for 2017 is focused on advancing the project exploration programme as far as possible according to the awarded geothermal concession contract and the approved technical operation plan.

Outlook for coming 5 years

- Completion of the exploration and appraisal phase
- Completion of construction, including drilling and stimulating wells, construction of surface facilities
- Entry into operation

Project sponsor

EU-FIRE EGS Hungary Kft.

Project website

<http://egs-hungary.hu/>

Project summary

The key objective of the project is to provide a green and sustainable alternative to the use of fossil fuels for energy production in the targeted area. Secondary planned objectives include strengthening the local community and social development by providing opportunities in the field of employment, knowledge transfer and potential for industry. The project will develop an Enhanced Geothermal System (EGS) reservoir and build a geothermal power plant to produce 8.9 MWe (net) of electric power.

EGS refers to a man-made geothermal reservoir in conditions where there is hot rock, but insufficient or little natural permeability or fluid saturation. Permeability is created by injecting fluid into the reservoir under carefully controlled conditions and thereby causing pre-existing fractures to re-open. The increased permeability allows fluid to circulate in the reservoir and thereby transfer heat to the surface for electricity generation.

The Power Plant installed by the project will be of the ORC (Organic Rankine Cycle) type. The ORC is a thermodynamic process where heat is transferred to a fluid at a constant pressure. The fluid is vaporized and expanded in a vapour turbine that drives a generator, producing electricity. The spent vapour is condensed to liquid and recycled back through the cycle. The ORC makes use of an organic isopentane based fluid, with a boiling point lower than water. The isopentane fluid enables recovery of heat from lower temperature sources such as geothermal heat.

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