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DEPLOYMENT OF DEEP ENHANCED GEOTHERMAL SYSTEMS FOR SUSTAINABLE ENERGY BUSINESS

Names of Authors (please underline corresponding author) G.O. Fridleifsson¹, S.G. Bogason², H.P. Ingolfsson², P. Vergnes³, I.Ö. Thorbjörnsson⁴, M. Peter-Borie⁵, T. Kohl⁶, E. Gaucher⁶, T. Edelmann⁷, R. Bertani⁸, S. Scæther⁹, B. Pálsson¹⁰.

Institution/Company ¹HS ORKA, ²GEORG, ³FONROCHE GEOTHERMIE, ⁴ISOR, ⁵BRGM, ⁶KARLSRUHER INSTITUT FUER TECHNOLOGIE, ⁷HERRENKNECKT VERTICAL, ⁸ENEL GREEN POWER, ⁹STATOIL PETROLEUM, ¹⁰LANDSVIRKJUN

Address of corresponding author gof@hsorka.is

Telephone number of corresponding author +354 855 9351

The DEEPEGS project is an innovation demonstration project, supported by the H2020 European Commission programme. The goal is to demonstrate the feasibility of enhanced geothermal systems (EGS) for delivering energy from renewable resources in Europe. It is a four years project led by HS Orka, Iceland, and in cooperation with partners from Iceland, France, Germany, Italy, and Norway.

The project is testing stimulating technologies for deep EGS development, which will deliver new innovative solutions and models for wider deployments of EGS reservoirs providing significant amounts of geothermal power across Europe. The project demonstrates advanced technologies in three geothermal reservoir types that all provide unique conditions for demonstrating the applicability of this “tool bag” on different geological contexts. It will demonstrate the capabilities of EGS for widespread exploitation of high enthalpy heat (i) beneath existing hydrothermal field at Reykjanes (volcanic environment) with temperature up to 550°C and (ii) in very deep hydrothermal reservoirs at Valence (crystalline and sandstone) and Vistrenque (limestone) with temperatures up to 220°C.

The consortium is industry driven with five energy companies that will implement the project goal through cross-fertilisation and sharing of knowledge. The companies are all highly experienced in energy production and three of them are already delivering power to national grids from geothermal resources.

There is a special focus on business cases to demonstrate significant advances in bringing EGS derived energy (TRL6-7) routinely to market exploitation, with the potential to mobilise project outcomes to full market scales following the end of DEEPEGS project.

The consortium seeks to understand social concerns about EGS deployments, and will address those concerns in a proactive manner, where the environment, health and safety issues are prioritised and awareness raised for social acceptance. Furthermore, the consortium will, through risk analysis and hazard mitigation plans, ensure that relevant understanding of the risks and how they can be minimised and will be implemented as part of the RTD approaches, and as a core part of the business case development.