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TRANS GEO - Transforming abandoned wells for geothermal energy production

Hannes Hofmann¹, Julie Friddell¹, Ingo Sass¹, Thomas Höding², Katrin Sieron², Max Svetina³, Monika Hölzel⁴, Robert Philipp⁵, György Márton⁶, Balázs Borkovits⁷, Klára Bođi⁸, Alen Visnjic⁹, Tomislav Kurevija¹⁰, and Bojan Vogrincic¹¹

¹Helmholtz Centre Potsdam GFZ - German Research Centre for Geosciences, Potsdam, Germany (hannes.hofmann@gfz-potsdam.de)

²State Office for Mining, Geology and Raw Material of Brandenburg, Cottbus, Germany

³ONEO GmbH, Hannover, Germany

⁴Geosphere Austria, Vienna, Austria

⁵Greenwell Energy GmbH, Vienna, Austria

⁶CROST Regional Development Nonprofit Ltd., Pécs, Hungary

⁷University of Pécs, Pécs, Hungary

⁸Mining Property Utilization Nonprofit Public Ltd., Budapest, Hungary

⁹Medjimurje Energy Agency Ltd., Čakovec, Croatia

¹⁰University of Zagreb - Faculty of Mining, Geology and Petroleum Engineering, Zagreb, Croatia

¹¹Local Energy Agency Pomurje, Martjanci, Slovenia

TRANS GEO is a regional development project that aims to explore the potential for producing sustainable geothermal energy from abandoned oil and gas wells in central Europe. Composed of 11 partner organizations and 10 associated partners in 5 countries, TRANS GEO is developing a Transnational Strategy and Action Plan to address this technical and economic opportunity. Our primary objective is to support rural communities and industries in the energy transition by providing tools and information that highlight sustainable redevelopment priorities and opportunities.

To reach this objective and promote the switch from fossil fuels to green energy, TRANS GEO is developing reuse procedures for five different geothermal technologies and validating them via numerical modelling, to assess their performance in repurposing existing hydrocarbon infrastructure and determine the optimal reuse conditions and configurations. The five geothermal technologies are Aquifer Thermal Energy Storage, Borehole Thermal Energy Storage, Deep Borehole Heat Exchangers, Enhanced Geothermal Systems, and Hydrothermal Energy production. The modelling studies focus on reference sites in our study areas, the North German Basin, the South German Molasse Basin, the Vienna Basin, and the Pannonian Basin. Comparison of varying wellbore and reservoir parameters in the numerical modelling studies will provide input to a new online well assessment tool which will be available publicly to determine well suitability and guide planning for future reuse projects. The online tool will be informed by a database of abandoned wells in Austria, Croatia, Germany, Hungary, and Slovenia and will include local

reference data, such as geology, topography, heat demand, and utilities. This will facilitate well reuse by matching candidate wells with local energy demand and heating networks. Additional work on socio-economic and policy analyses will provide financial and liability information for the 5 different geothermal technologies, across the project countries. Finally, the partnership will propose a legal policy and incentive framework to facilitate and expand reuse of abandoned wells for geothermal energy production and storage across central Europe.

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