Great opportunity for experts of the geothermal energy sector!!

Workshop: Demonstration of open-source tools for detailed techno-economic evaluation of geothermal well designs

As part of the EU Geothermica RESULT project, ***TNO will publicly release specialized software to assess the potential of geothermal wells in terms of heat delivery and project economics*** *of case-specific geothermal sites*.

Optimizing the cost-efficiency of geothermal projects implies the ability of evaluating different well configurations, which requires a techno-economic performance assessment. While several companies do have their internal workflows in place, there are no techno-economic calculation tools specialized for detailed evaluation of site-specific geothermal projects that are publicly accessible for the geothermal sector as a whole. In the RESULT project, TNO has developed open-source tools addressing that purpose.

On **August 26th** we will host an *in-person workshop*, **free of charge**, to demonstrate and disseminate the use of these newly released open-source modules. This is an invitation to this event, **please register via the link or QR-code below**.

This workshop is relevant for experts interested in establishing positive business cases for geothermal energy production and the realization of geothermal wells, ***such as operators, regulators, drilling companies, researchers, reservoir engineers or technical advisors*****.**

The workshop will consist of three parts:

- **Part 1:** Technical presentation on well concept selection (RESULT project) - **presenter:** *Eduardo Barros*, Senior Reservoir Engineering Scientist (TNO – Hydrogeology and Reservoir Engineering)

In this first part of the workshop, we will share the main results of the well concept selection workflow proposed in the RESULT project. The workflow is supported by our open-source optimization framework EVEREST™ (https://everest.tools) that enables the evaluation and optimization of well trajectories to compare the business case of different well concepts (e.g., deviated, sub-horizontal and multi-lateral wells) to develop a geothermal site. This optimization requires the ability to model the heat production of geothermal reservoirs and the associated economics. In the RESULT project, a modelling approach using numerical reservoir simulation models, fast semi-analytical models and economic calculations has been the basis for the well trajectory optimizations. In order to disseminate the optimization best-practices, TNO will release open-source models that allow to replicate the optimization results of the RESULT project using the EVEREST framework. These are the models to be presented and demonstrated in the following parts of the workshop.

- **Part 2:** Demonstration of PyResultWells an open-source Python-based fast semi-analytical model for geothermal reservoirs – **presenter:** *Jan Diederik van Wees*, Principal Scientist Geothermal Energy (TNO – Geoscience and Technology)
- **Part 3:** Demonstration of PyThermoNomics, an open-source Python-based module to calculate economics of geothermal projects – **presenter:** *Slawomir Szklarz*, Optimization Expert, and *Stephan de Hoop*, Reservoir Engineer / Software Developer (TNO – Hydrogeology and Reservoir Engineering)

The RESULT project has been subsidized through the ERANET Cofund GEOTHERMICA (EC Project no. 731117), by RVO (The Netherlands), Rannis (Iceland) and GSI (Ireland).

PRACTICAL INFORMATION:

Location (in-person workshop, *free of charge*):

Energy Cave, TNO Rijswijk Center for Sustainable Geoenergy

Kessler Park 1D, Entrance at Lange Kleiweg, 2288 GH Rijswijk

Date: August 26th 2025, 13:00-16:30

AGENDA:

13:00 – 13:15 Workshop Introduction

13:15 – 13:45 Part 1

13:45 – 14:45 Part 2

14:45 – 15:00 Coffee break

15:00 – 16:00 Part 3

16:00 – 16:30 Joint discussion

16:30 Networking drinks (borrel)

Required material *for those who would like to try out the software during the workshop*: Laptop with Python IDE or Jupyter Notebook (*this is optional and no precondition to attend the demonstration)*

More information: jens.wollenweber@tno.nl (GEOTHERMICA RESULT coordinator)

PLEASE REGISTER until August 22nd 2025 under:

https://forms.office.com/e/SNwg85Zn1B?origin=lprLink

Or use this QR code:

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