

Research and Innovation Staff Exchange (RISE) Call: H2020-MSCA-RISE-2020

Duration – 4 years

Deadline date: 28 April 2020

Project THERMOFOP Thermal Energy for Population

The project aims to carry out a interdisciplinary study of geothermal resources and impact of geothermal energy on the community and population.

The main general objective of our proposal is the creation of innovative approaches for multi-functional application of geothermal energy for the development of geothermal systems. The great potential of this renewable type of energy for different regions depending on geological conditions, types of deep sources and ecological features will be studied in details. Fluid and gas emanation and their regime, physical and chemical properties of geothermal zones, their tectonic and lithological structure, origin and evolution will be investigated. Geological, physico-geological and mathematical models of hydrothermal processes will be developed. It will be analyzed the relationship between hydrothermal processes and formation of mineral resources. The types of exploration of geothermal waters and their production (including wells, hydraulic fracturing) will be developed in frames of our project. The using of geothermal energy for local heat supply, including geothermal heat pumps, for heating water, and the agro-industrial complex (drying, making cold) will be investigated. The influence of the thermal energy production on the sequestration of CO₂ and consequently climate changes will be analyzed. To investigate the socio-cultural effects on the application of geothermal energy in different regions and formation the “geothermal minds” of people the in-depth interview will be provided. Strongly complementary research experiences of the international partners involved in this project as well as high degree of cooperative integration between them will allow a deep scientific study of the potential of geothermal energy in Ukraine and other countries. Finally, active participation of the IT-TRANSIT Ltd industrial company in the project consortium will allow building of strategies for IT realizations of the innovative achievements succeeded by the partners.

Partners

1. **Taras Shevchenko National University of Kyiv, Ukraine**
2. **ESNG, Lemta, University of Lorraine, France**
3. **BOKU, Austria**
4. **KIT, Germany**
5. **East Kazakhstan State Technical University, Kazakhstan**
6. **Al-Farabi National Kazach University (AFNKU), Kazakhstan**
7. **GeoThermal Engineering GmbH (GeoT), Germany**
8. **Institute of Rocks Mechanics, China**
9. **IT-TRANSIT, Ukraine**

Work Package List

Work Package Number	Work Package Title	Activity Type (e.g. Research, Training, Management, Communication, Dissemination...)	Number of person months involved	Start Month	End month
0	General coordination	Management, Communication, Dissemination	10	1	48
1	Geological Investigation and Characterizations of Geothermal basins (reservoir)	Research, Training, Field work		1	24
2	Physical and Mathematical Modelling of geothermal systems	Research, Training, Communication		13	36
3	Developing the IT systems for the Geothermal Energy Production	Research, Training, Communication, Dissemination		37	42
4	Impact on the CO ₂ sequestration and climate changes Impact on the population	Research, Communication, Dissemination		38	48