



**Mineral and Energy Economy  
Research Institute  
Polish Academy of Sciences  
(MEERI PAS)  
Kraków, Poland**

**REGIONAL  
FUNDS  
WEEK**

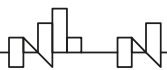
Iceland  
Liechtenstein  
Norway grants grants

6-10 DECEMBER 2021

**Annual Seminar 2021  
Round Table, 7 Dec. 2021**

# Mission of MEERI PAS

- ❑ Mineral and Energy Economy Research Institute was established in 1986 in Krakow as a constituent unit of the **Polish Academy of Sciences**
- ❑ Highly interdisciplinary research activity of MEERI PAS in the area of **minerals and energy management** covers such subjects as: mining, geology, **renewable energy sources**, power and **thermal engineering**, environmental engineering, supplemented by issues related to **economics**, law, geophysics, chemical engineering, materials science, processing engineering.
- ❑ Mission of the Mineral and Energy Economy Research Institute, Polish Academy of Sciences is to deliver modern, economic, ecological and social solutions serving **sustainable development** of Poland and its regions in the **area of minerals and energy**



# MEERI PAS in numbers

More than

**100**

Employees, including about 50 persons of scientific staff



**50**

High academic standing of the Institute (category "A")

**A**

The Institute's scientific profile:

**4**

Departments, consisting of several divisions



Over

**30**

Years of activity



Approximately

**150**

Scientific publications per year, including over 30 at JCR list

**90**

Research projects carried out each year, including 5 to 10 international ones



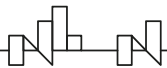
**50**

Cooperation with several foreign and over 30 domestic research units

OVER

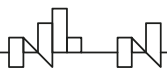
**100**

Business entities in the country and abroad, for which the Institute carries out research works



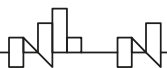
# The most important MEERI PAS achievements in the field of geothermal energy

- Design and constructing the Poland's first experimental geothermal plant Bańska - Biały Dunajec,
- The first in Poland reconstruction of existing deep well Mszczonów IG-1 for heating purposes,
- Methods and assessment of the environmental effects of RES' usage,
- Elaboration the guidelines to improve the injectivity of reservoir rocks while injecting geothermal waters in Polish geothermal plants,
- Structural and digital models of the subsurface structure of many geostructural basins in Poland,
- Numerical modelling of heat and mass flow in the geothermal reservoirs,
- Mathematical modelling of energy systems (direct use of geothermal systems), the optimal management of geothermal waters to obtain heat and electricity in selected area of Podhale,
- Elaboration an atlas of geothermal waters for the combined electricity and heat generation applying binary systems in Poland,
- Effective use of geothermal water and energy, ex. for heating, balneotherapy, wood drying, agriculture, fish farming and drinking water production on the basis of cooled geothermal water (using membrane processes),
- Demonstrating cascade use of geothermal energy.



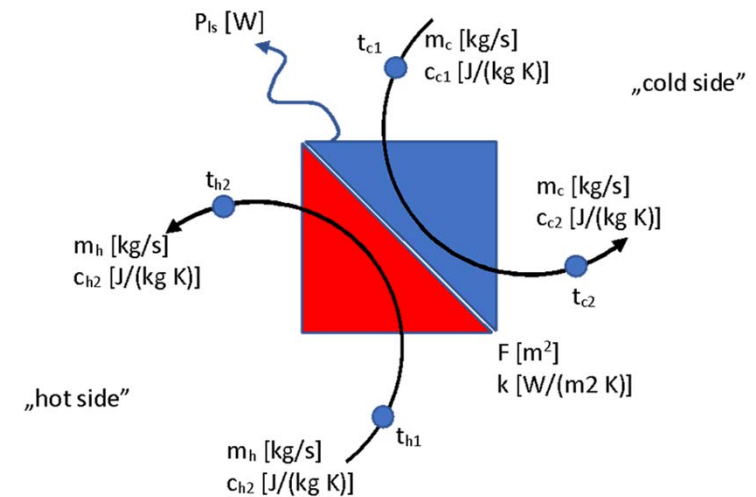
# The most important international projects related to geothermal energy and waters use with MEERI PAS as participant

- **CLENSYS** – Cleaner Energy Systems through Utilization of Renewable Energy Resources (2002-2003, 5FP);
- **IGET** – Integrated Geophysical Methods for Exploration of Deep Geothermal Systems (2005-2009, 6FP);
- **GTR-H** – Geothermal Regulations – Heat (Altener, 2006 – 2009)
- **GEOCOM** – Geothermal Communities: Demonstrating the Cascading Use of Geothermal Energy for District Heating with Small Scale RES Integration and Retrofitting Measures (2010 – 2014, 7 FP)
- **GeoDH** – Promote Geothermal District Heating in Europe (IEE, 2012-2014)
- **EEA Geothermal Projects in Poland** - supported by EEA Financial Mechanism (2016-2017)
- **EUBILD-UNAKLIM** – European Educational Concept in Environmental- Nature- and Climate-Protection to Safeguard Cross-Border Sustainable Development (2016-2019)
- **GEORISK** – Development of projects related to geothermal Energy and other renewable Energy sources by reducing their risk (2018-2021, Horizon2020)
- **Geo4Food** – Water-Energy-Food Nexus: Geothermal water for agriculture (2019-2022, Polish-Turkish Cooperation Programme)
- **User4GeoEnergy** – Improving the energy efficiency of geothermal energy utilisation by adjusting the user characteristic(2020-2023, EEA & Norway Grants: Fund for Regional Cooperation)
- **EnerGizerS** – CO<sub>2</sub>-Enhanced Geothermal Systems for Climate Neutral Energy Supply (2020-2023, Norway Grants: Polnor 2019)
- **KeyGeothermal** – Capacity Building of the Key Stakeholders in the Area of Geothermal Energy (2020-2024, EEA Financial Mechanism 2014-2021)

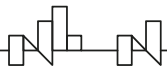


# The role of MEERI PAS in the User4GeoEnergy project

- We are the leaders of the project consortium
- We are leading:
  - WP1 (Management),
  - WP2 (Communication),
  - WP5 (Methodology development and testing).
- We are responsible for overseeing the progress of project activities, compliance with project proposal and objectives, efficient communication and timely reporting to the Fund Operator



The scheme of counter current heat exchangers



# Development of MEERI PAS

- ❑ Project entitled „Centre for Sustainable Management of Minerals and Energy is currently being implemented by MEERI PAS and co-financed from the Regional Operational Programme of the Małopolska Province 2014-2020 (EU Funds), with total cost of over 27 milion PLN
- ❑ Until April 2023, new MEERI PAS laboratory and office building will be constructed in Kraków, together with 3 new Laboratories and development of 2 existing Laboratories (including Geothermal Laboratory in Bańska Niżna – Podhale region)
- ❑ In Geothermal Laboratory, new borehole thermal energy storage (BTES) will be constructed, powered by heat from solar collectors and own geothermal borehole, and existing research stand for geothermal water treatment will be developed



Future MEERI PAS building in Kraków



Future look of MEERI PAS Geothermal Laboratory in Bańska Niżna, Podhale region

