



# GEO THERMAL4PL

## GEO THERMAL4PL – SUPPORT FOR SUSTAINABLE DEVELOPMENT AND USE OF SHALLOW GEOTHERMAL ENERGY WITHIN THE AREAS OF THE MIESZKANIE PLUS PROGRAMME IN POLAND. THE MAIN OBJECTIVES AND PLANNED RESULTS OF THE BILATERAL POLISH-NORWEGIAN PROJECT

Maciej KLONOWSKI\*, Eliza DZIEKAN-KAMIŃSKA\*, Jacek KOCYLA\*, Grzegorz RYŻYŃSKI\*, Magdalena SIDORCZUK\*, Kirsti MIDTTØMME\*\*

\* Polish Geological Institute – National Research Institute, ul. Rakowiecka 4, 00-975 Warszawa, e-mail: Maciej.Klonowski@pgi.gov.pl \*\* Christian Michelsen Research AS, P.O.Box 6031, 5892 Bergen, Norway, e-mail: Kirsti.Midttomme@cmr.no

### GOAL

The Geothermal4PL project aims at supporting sustainable development and use of shallow geothermal energy in Poland within the areas of the Mieszkanie Plus national housing programme through enhancement of expertise and exchange of experience and good practices between the Partners for the benefit of the project target group and end users.

### REASON

Implementation of the project is caused by the urgent need of reduction of emissions of gasses and dusts generated by combustion of the conventional fuels through increase of use of shallow geothermal energy and development of the ground sources heat pumps installations in Poland. The project arises also from the need for compliance with the international, EU and national policies and legal regulations on increased use of renewable energy and better insulation standards.

### FOR WHOM

The project focuses on the geological administration on the regional and local levels, the town planners, producers and installers of the ground source heat pumps and their users.

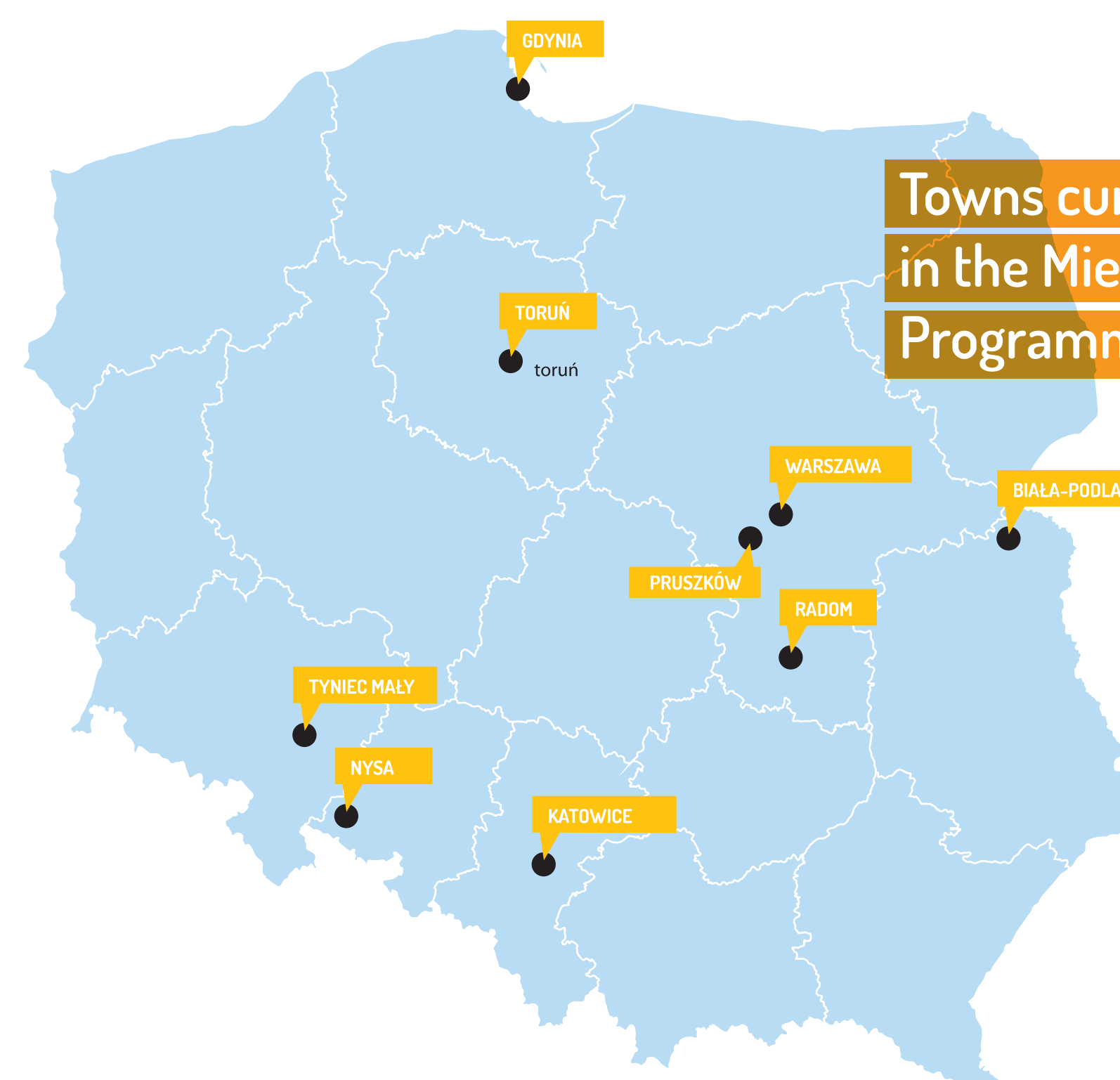
### PARTNERSHIP

- Polish Geological Institute – National Research Institute (PGI-NRI)
- Christian Michelsen Research AS (CMR AS) *with contribution from:*
- Norwegian Geological Survey (NGU)
- Norwegian University of Science and Technology (NTNU)

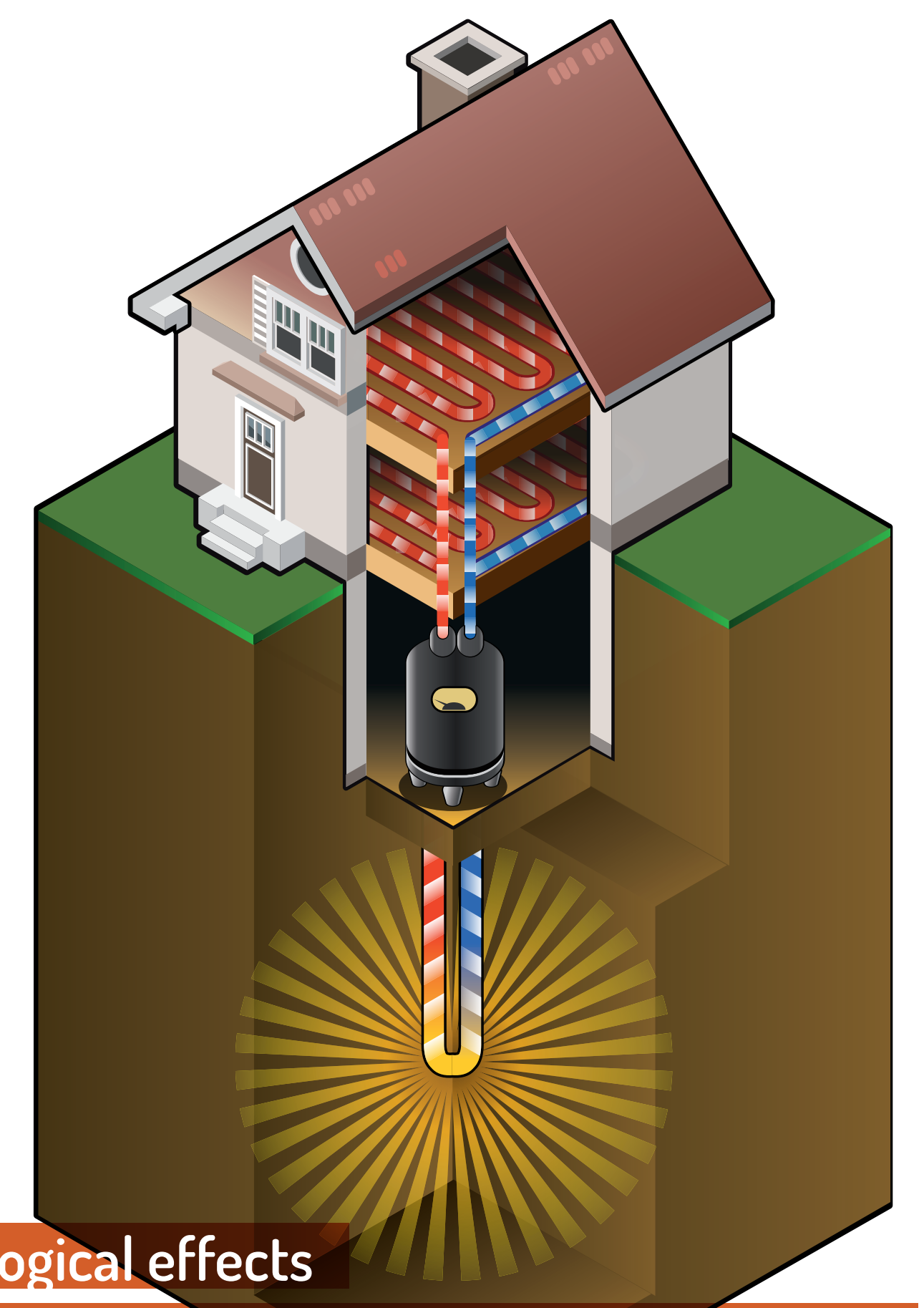
### Mieszkanie Plus national housing programme



The Mieszkanie Plus is a national housing programme approved by the government of the Republic of Poland and managed by the Bank Gospodarstwa Krajowego Nieruchomości (BKKN). It assumes establishment of affordable rental and housing with a possibility of the access to property. The premises are to be built on the ground acquired from the State Treasury land resources. The programme requires application of the newest ecological building technologies, including use of renewable energy and construction of zero- and/or near-zero energy houses. This will reassure construction of buildings with high technological standards and low exploitation cost.



Towns currently involved  
in the Mieszkanie Plus  
Programme



Ecological effects  
– CO2 reduction, low emission reduction,  
energy efficiency, sustainability –  
a step towards future  
SMART CITY

### Project management

The project will be managed by the Steering Committee and the Advisory Board, the members of which will be appointed by the Partners.

### Education and dissemination activities

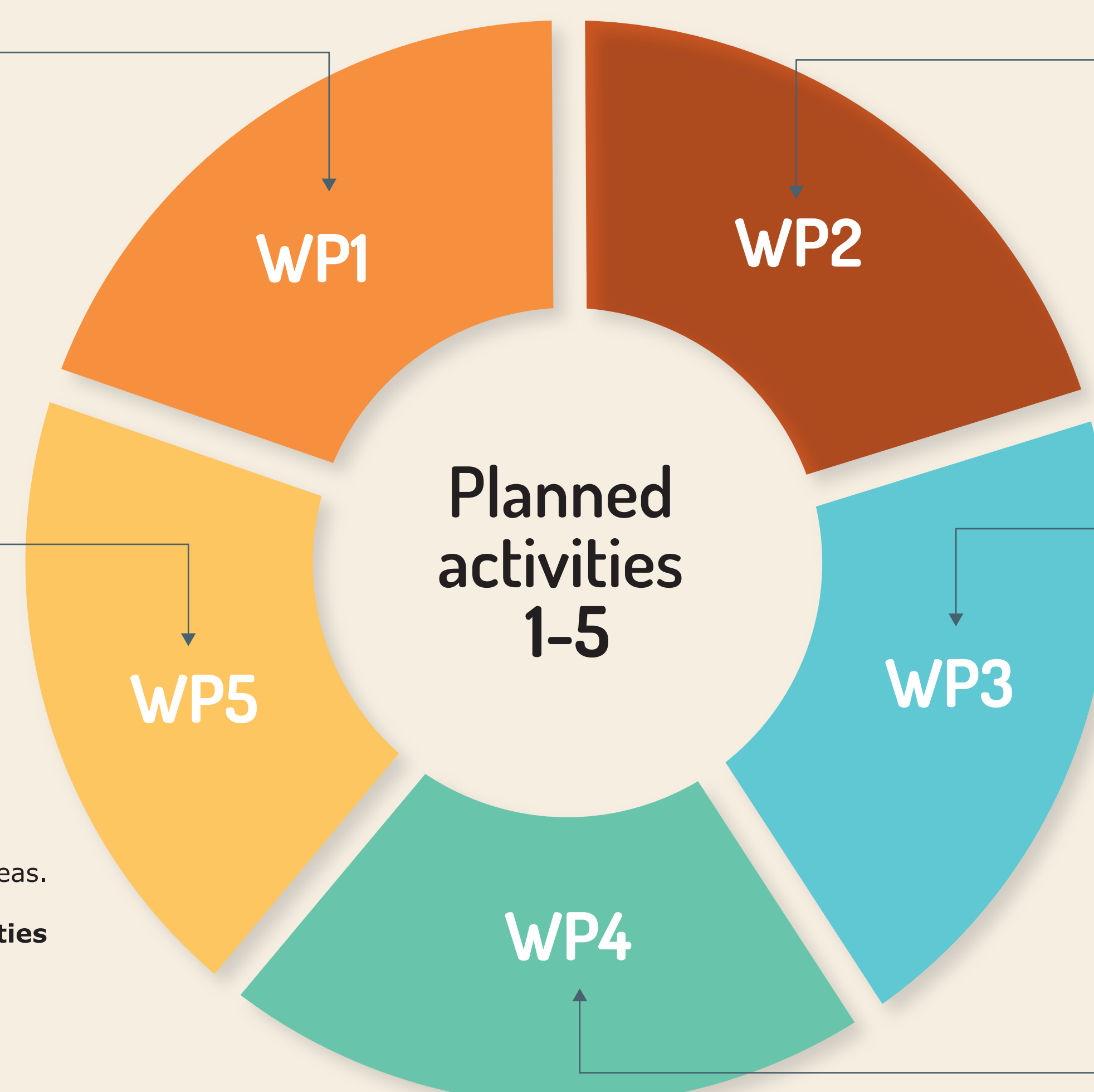
The integral part of the project are the educational-promotional activities aiming at enhancing expertise and qualifications, raising the competences and professional knowledge as well as building professional contacts between the Partners, project team members, target groups and end users.

**The main educational activities cover:**

- > training course on GIS software;
- > training course on thermogeology;
- > training course for the project target group on use and development of shallow geothermal energy for heating and cooling within the residential areas.

**The project results will be disseminated via specifically designed activities and events, including:**

- > publication of the project website.
- > presentations during the seminars and conferences.
- > preparation of the project movie.
- > contacts with media.



### Data inquiry and feasibility study

Within the framework of the project the historical geological and hydrogeological data as well as the selected cases of application of shallow geothermal energy in Poland and in Norway will be identified and analysed the selected. In addition a feasibility study on use of the ground source heat pumps within the Mieszkanie Plus national housing programme will be performed. A study visit is planned to intercalibrate the methodologies of TRT and DTTR measurements used by the Partners.

### Guidelines for a standard database

For the sake of further data processing a unified standard structure of a database will be prepared. The database will be thereafter installed on the especially configured terminals – the laptops, and the project team will be trained in handling the necessary software for its maintenance. From the analysed areas the most perspective in terms of potential of shallow geothermal energy will be chosen. For this area the analogue data will be inserted into the database.

### Guidelines for boreholes data reclassification

For the sample of the inserted data the reclassification of the geological parameters into the thermogeological ones will be carried out, i.e. the values of thermal conductivity and unit thermal efficiency will be computed. In effect the GIS layers showing the point map of shallow geothermal potential will be developed. Based on the performed activities a document – the guidelines for the boreholes data reclassification and use of these data for assessment of shallow geothermal energy potential within the Mieszkanie Plus national housing programme will be accomplished. Transfer of knowledge, experience, technology and good practices will be reassured by organisation of the study visits during which the Partners will exchange knowledge on the lab and field techniques, application of specific software and exploitation of the ground source heat pumps installations in Poland and Norway.

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Polish Geological Institute  
National Research Institute



Christian Michelsen Research

