Interreg Danube Region

Co-funded by the European Union

Danube GeoHeCo

Newsletter 04

Danube GeoHeCo

Fostering the implementation of shallow geothermal hybrid heating and cooling systems in the Danube Region

Newsletter December 2025

Directional well drilling
Photo by InnoGeo Research and Service Ltd.

The fourth issue of the Danube GeoHeCo project newsletter has been published!

At the end of the 4th period of the project, we summarized the most important activities and results of the semester in a newsletter!

In this newsletter, you can read about organized meetings and events, and other networking activities, as well as the progress made on pilot investment activities and much more.

Stay updated with the upcoming Newsletters from the Danube GeoHeCo project!

Legal Disclamer

Acknowledgement

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Danube GeoHeCo Interim Transnational Conference highlights Innovations in Geothermal Energy

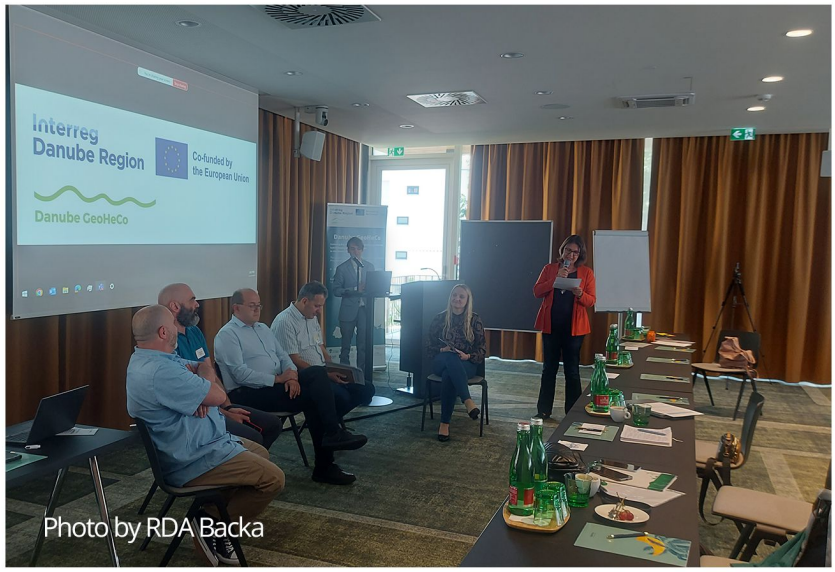

Photo by RDA Backa

As part of the Danube GeoHeCo project, the Interim Transnational Conference brought together experts, policymakers, and practitioners to explore the future of geothermal energy in the Danube Region. Hosted by Forschung Burgenland, the event was held on 12 June 2025 in Eisenstadt, Austria and featured a full-day programme focused on sustainable heating and cooling solutions, with particular emphasis on shallow and deep geothermal applications. The conference served as a platform for knowledge exchange, showcasing best practices and innovative approaches that support the European Union's climate and energy goals.

The event began with a welcome address and project overview by Danijela Vrtarić from the Medjimurje Energy Agency Ltd., Croatia. This was followed by keynote presentations from high-level EU and regional stakeholders: Matthieu Ballu, Policy Officer at the European Commission DG ENER, provided an overview of EU policies on the decarbonisation of heating and cooling (online); Annamária Nádor, Coordinator for EUSDR Priority Area 2, highlighted how the GeoHeCo project contributes to broader energy objectives in the Danube Region (online) and Johannes Schnitzer, FB (Austria) shared insights into current geothermal energy developments in Austria.

The conference continued with presentations on practical implementations of geothermal systems: Bettina Schumi from Vienna Energy GmbH presented on the development and integration of deep geothermal projects, particularly those linked to district heating networks and György Márton, from CROST Regional Development Nonprofit Ltd., Hungary, discussed the benefits and applications of waste heat utilisation.

The afternoon session focused on technical solutions and local strategies developed through the Danube GeoHeCo project. Representatives from the Faculty of Mining, Geology and Petroleum Engineering, University of Zagreb, Croatia, introduced a decision support toolbox for the design and optimisation of shallow geothermal hybrid heating and cooling systems. A representative from LEA Pomurje, Slovenia emphasized the role of deployment desks in supporting community-led geothermal planning and representative of Forschung Burgenland presented a digital platform and virtual marketplace developed to promote the uptake of shallow geothermal hybrid systems.

In a dedicated session, MMst. DI Harald Erös, Chair of the Austrian Association of Refrigeration Technology (ÖGKT), addressed the challenges and evolving standards related to refrigerants in heat pump technology.

A key highlight of the event was the panel discussion on overcoming barriers to the utilisation of shallow geothermal energy. Experts from across the region explored practical solutions, regulatory frameworks, and the importance of cross-border collaboration in scaling up geothermal technologies.

The Danube GeoHeCo Interim Transnational Conference concluded with a reaffirmation of the project's goals to foster innovation, regional cooperation, and the transition to low-carbon, resilient energy systems.

The event successfully strengthened dialogue and strategy-building among countries in the Danube Region, marking a meaningful step forward in Europe's geothermal journey.

National Deployment Desk in Slovakia strengthening the use of Shallow Geothermal Energy

As part of Activity 2.2 of the Danube GeoHeCo project, the Slovak Centre of Scientific and Technical Information (CVTI SR) in cooperation with Technical University in Košice, associate partner of the project, successfully organized the national deployment desk meeting in Slovakia. The hybrid-format event, held on 24th June 2025, brought together a total of 20 key stakeholders, including representatives from public institutions, the private sector, the academic sector, research organizations and NGOs.

The discussions were focused on the challenges and potential of shallow geothermal energy (SGE), especially in the Bratislava region. The goal was to explore pathways for integrating SGE into Slovak strategic and development planning.

Agenda Highlights:

-Welcome and Danube GeoHeCo project status

-Best practice case studies

-Overview of of the legislation framework

-Challenges and opportunities for SGE in Slovakia

-Development proposals to foster SGE uptake

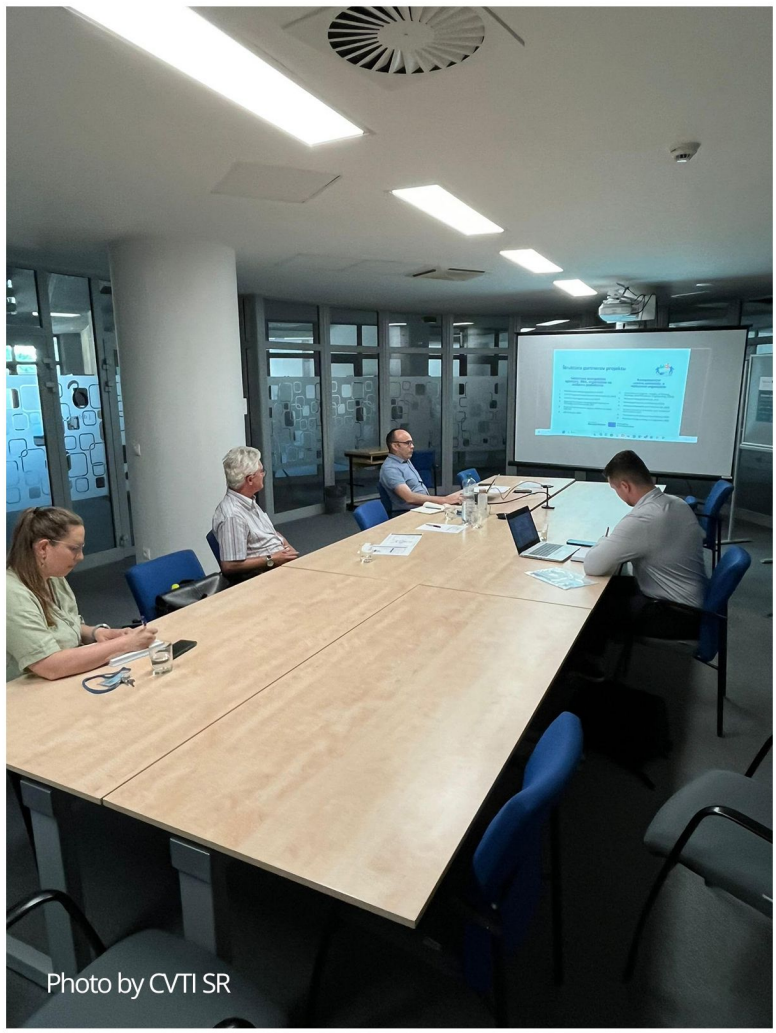

Photo by CVTI SR

The meeting allowed participants to collaboratively refine and expand on proposed measures. The event generated several concrete proposals to enhance the deployment of SGE technologies in Slovakia, contributing to national and regional sustainability goals.

The meeting formed the basis for further cooperation between stakeholders within the Danube GeoHeCo project activities. This event marks a significant step forward in fostering collaboration and knowledge exchange for a greener and more energy-efficient future.

Study Visit and Deployment Desk Meeting within the Danube GeoHeCo Project

As part of Activity 2.2 of the Danube GeoHeCo project, a successful study visit showcasing best practices and a deployment desk meeting (online) were held in Kragujevac on June 26 and 27, 2025.

The event was jointly organized by the Regional Development Agency Bačka, the Regional Economic Development Agency for Sumadija and Pomoravlje, and the Faculty of Engineering in Kragujevac, University of Kragujevac, as part of ongoing efforts to promote and expand the use of shallow geothermal energy (SGE).

During the study visit, twelve representatives of key stakeholders visited two sites in Kragujevac where water-to-water and ground-to-water heat pump systems have been installed. Participants had the opportunity to learn about the technical characteristics of these systems, hear user experiences, and understand the benefits they bring to local communities — from improved energy efficiency to reduced CO_2 emissions.

On the following day, June 27, 2025, a hybrid-format deployment desk meeting took place with eleven participants from various sectors. The meeting focused on analyzing barriers that hinder the wider adoption of SGE technologies and discussing possible solutions to overcome these challenges.


Photo by FEK

Key activities presented during the meeting included:

• Analysis of barriers and possible solutions: Regulatory, administrative, technical, and financial challenges were identified. Concrete proposals were developed to facilitate the integration and broader use of shallow geothermal energy in local and national strategic planning.

• Presentation of an online tool for geothermal system sizing: Participants were introduced to an interactive tool designed to simplify the estimation of geothermal system capacity for specific sites, significantly easing the planning process and decision-making.

The events held in Kragujevac reaffirmed the significant potential of shallow geothermal energy for the sustainable energy development of local communities. The solutions demonstrated and practical experiences shared from Serbia can serve as a model of good practice for other countries in the Danube region.

Pilot Investment begins in Martjanci Kindergarten: Towards greener heating with geothermal energy

On 7 July 2025, project partner LEA Pomurje officially launched the pilot investment at the kindergarten in Martjanci, Slovenia, as part of the Danube GeoHeCo project. This pilot marks a significant step forward in sustainable buildings heating, aiming to replace the fossil fuel heating with a hybrid shallow geothermal energy solution.


Photo by LEAP

The investment started with the drilling of the first geothermal borehole, reaching a depth of 100 meters—a major milestone in transitioning the 1975-built kindergarten (238 m^2) to cleaner energy. The project involves the installation of a hybrid heating system that combines:

- Two 100-meter-deep vertical geothermal probes
- A geothermal heat pump
- Retention of the existing heating oil furnace for backup and peak loads

This modern configuration ensures energy efficiency, flexibility, and allows for detailed performance monitoring under various conditions.


Photo by LEAP

During the first week of construction:

- The site was prepared;
- The first borehole was successfully drilled;
- Geological conditions were assessed and drilling parameters were monitored.

As of 14 July 2025, work on the second borehole is underway. The preparatory work for installing the geothermal heat pump will began in next weeks, including mechanical and electrical routing and system integration.

This hybrid geothermal system will not only serve the heating needs of the kindergarten more sustainably, but also support the testing of the Danube GeoHeCo IT planning tool. Data and insights from this pilot site will contribute to broader project activities and cross-regional knowledge exchange.

Stay tuned for more updates, photos from the site, and behind-the-scenes insights as the Martjanci pilot progresses!

Danube GeoHeCo project together with Transnational Action Plan presented during the national workshop on geothermal energy innovations held in Zagreb, Croatia

On 24th of September 2025, Medjimurje Energy Agency Ltd. (MENEA) took part in a national workshop held in Zagreb, focused on innovative approaches for geothermal energy exploration, utilization, and storage. The event was organized within the framework of two transnational projects — InnoGeoPot (Innovative exploration methods for geothermal potential assessment and energy storage) and TRANSGEO (Transforming abandoned wells for geothermal energy production).

The workshop provided valuable insights into the development of geothermal potential in Zagreb and across Croatia, highlighting the possibilities of repurposing abandoned wells and implementing deep and shallow geothermal systems for efficient heating and cooling.

The event brought together a diverse group of participants and experts, including representatives from national public institutions, the academic community, energy sector professionals, and local stakeholders.

The aim was to encourage knowledge exchange and stimulate future investments in sustainable geothermal energy.

The workshop was hosted by the Faculty of Mining, Geology and Petroleum Engineering at the University of Zagreb, one of the key technical partners in the Danube GeoHeCo project. In addition to presenting the key results from the InnoGeoPot and TRANSGEO projects, the event also featured the Danube GeoHeCo project (Fostering the Implementation of shallow Geothermal Hybrid Heating and Cooling Systems in the Danube Region) and the IT Decision Support Tool for design and technology optimisation of shallow geothermal hybrid heating and cooling systems. One of the highlights of the workshop was the presentation of the Transnational Action Plan being developed as part of Danube GeoHeCo project, which aims to support the broader adoption of shallow geothermal energy throughout the entire Danube Region.

MENEA's participation in this workshop reflects its continued commitment to supporting the innovative and sustainable energy solutions at both the national and international level.

InnoGeo presented Innovative cooling technology at European Geothermal Congress 2025

The Danube GeoHeCo project partner, InnoGeo, recently participated in the European Geothermal Congress 2025, where the work on cutting-edge cooling technology powered by geothermal energy was presented.

The presentation focused on the adsorption of chiller technology developed for the summer utilization of thermal water at the North 1/A heating plant. This innovation forms a key component of the Danube GeoHeCo pilot district cooling project, jointly implemented by InnoGeo and the local district heating service provider.

The project showcases state-of-the-art waste heat utilization for cooling purposes, supporting both sustainable energy solutions and efficient sector coupling.

The project paper was submitted under the "Sector Coupling" technical section and was presented by Dr. Emese Dóró-Tóth.

The European Geothermal Congress 2025, held from 6 to 10 October in Zürich, brought together the entire European geothermal community. As a flagship event in the energy sector, EGC 2025 served not only to unify the industry but also to advance it toward greater innovation and impact. Focused on integrating geothermal energy into the European energy mix, the congress plays a vital role in supporting the EU's decarbonization goals and enhancing energy independence across the continent.

Participation of Danube GeoHeCo Project Partners in the National Event at Mind Park in Kragujevac

Representatives of the project partners in the Danube GeoHeCo project – the Regional Economic Development Agency for Šumadija and Pomoravlje (REDASP), the Faculty of Engineering at the University of Kragujevac (FEK), and the Regional Development Agency Bačka (RDA Bačka) – took part in the International Cooperation Forum held on October 29, 2025, at Mind Park in Kragujevac.

Within the panel titled "The Path to Decarbonization through Digital and Technological Adaptations," Mr. Davor Končarević, representing the Faculty of Engineering, spoke about the goals and achieved results of the Danube GeoHeCo project, as well as about ongoing activities related to the development of the Transnational Action Plan with recommendations for promoting the use of shallow geothermal energy in the Danube Region.

The national panel also included representatives from ministries, development agencies, chambers of commerce, businesses, and international organizations from Serbia and the Republic of Srpska, enabling the exchange of experiences and the establishment of dialogue on further steps in the field of green transition and sustainable energy.

Photo by FEK

During the forum, a consultative meeting was also organized, providing an opportunity for key stakeholders to gather and discuss activities related to the preparation of the Transnational Action Plan. The Serbian partners presented the planned structure of the strategic document, which will include:

• a description of geothermal heat pump technology,

• an analysis of the current situation in Europe and the region,

• the definition of strategic interventions within four priority areas:

o Priority 1 – Resources and Regulations

o Priority 2 – Technology and Design

o Priority 3 – Education and Training

o Priority 4 – Financing

Participants discussed the proposed national interventions and the work of partner working groups on defining joint key activities within the identified priorities.

The national forum in Kragujevac was an important opportunity to present the achievements of the Danube GeoHeCo project so far, as well as to strengthen cooperation with relevant institutions and organizations that will contribute to the development and implementation of the Transnational Action Plan for the advancement of shallow geothermal energy in the Danube Region.

Introducing the Danube GeoHeCo project under the Interreg Europe Programme funded project EXPRESS

On Tuesday, 25 November 2025, Medjimurje Energy Agency Ltd. (MENEA) showcased two ongoing transnational initiatives—Danube GeoHeCo and TRANSGEO—during a project meeting and study visit to Medjimurje County held as part of the EXPRESS project (European Regions Promoting Renewable Energy Self-Sufficiency), funded through the Interreg Europe 2021–2027 programme.

As the EXPRESS project places a strong emphasis on increasing the share of renewable energy, strengthening regional energy self-sufficiency, and advancing effective energy policy frameworks, Danube GeoHeCo and TRANSGEO have been highlighted as exemplary practices within Medjimurje County. Both projects contribute directly to the region's shift toward locally produced renewable energy and its broader adaptation to emerging trends in the energy sector, fully aligning with the strategic objectives of EXPRESS project.


Photo by MENEA

TRANSGEO project (Transforming abandoned wells for geothermal energy production), supported by the Interreg Central Europe 2021–2027 programme, focuses on transforming existing oil and gas wells into geothermal production and thermal storage facilities. By repurposing this infrastructure, the project extends the operational lifespan of existing assets, reduces CO_2 emissions, and promotes more sustainable management of regional energy resources.

Danube GeoHeCo project (Fostering the implementation of shallow Geothermal hybrid Heating and Cooling systems in the Danube Region) aims to accelerate the uptake of shallow geothermal energy by integrating geothermal heat pumps into heating and cooling systems that currently rely on fossil fuels. In doing so, the project supports the transition to more efficient, resilient, and environmentally responsible energy solutions.

During the event, MENEA representatives presented the key goals, current achievements, and upcoming activities of both projects. Participants also had the opportunity to engage in discussion, ask questions, and explore the potential for expanding geothermal energy deployment across Medjimurje County.

Slovenian Pilot Investment at kindergarten Martjanci demonstrates Shallow Geothermal Energy

The Danube GeoHeCo project's Slovenian pilot is being implemented at Kindergarten Martjanci in the Municipality of Moravske Toplice, serving as an ideal demonstration site for integrating shallow geothermal energy (SGE) into public buildings.

Coordinated by the Local Energy Agency Pomurje (LEA Pomurje) in cooperation with the Geological Survey of Slovenia (GeoZS) and the municipality, the pilot introduces a hybrid heating system combining the existing boiler with a geothermal heat pump connected to a 100-metre-deep borehole. The system provides efficient, low-carbon heating while maintaining operational flexibility.

Photo by LEAP: Implementation of a geothermal system

Designed in 2024 and installed in summer 2025, the pilot reduces fuel consumption, lowers greenhouse gas emissions, and delivers long-term energy cost savings. It also serves as an educational example for the community and other public institutions considering renewable solutions.

The Martjanci pilot demonstrates how shallow geothermal systems can be effectively integrated into local development and renovation plans, offering a practical model for replication across Slovenia and supporting the regional transition toward sustainable energy.

Organized Danube GeoHeCo 4th PP and SCOM Meeting and Study Visit Held in Cluj-Napoca

The 4th Project Partner (PP) and Steering Committee (SCOM) Meeting of the Danube GeoHeCo project was successfully held on 10–11 December 2025 in Cluj-Napoca, Romania, and was organised and hosted by the Technical University of Cluj-Napoca (TUCN).

The meeting brought together project partners to review project progress, coordinate upcoming activities, and strengthen cooperation across work packages. In addition to project management, partners reviewed ongoing and planned activities within the Thematic Work Packages, finalized key deliverables, and discussed potential indicators for pilot investments. A study visit to the Romanian pilot investment site provided participants with practical insights into implementation activities.

The meeting also offered an opportunity for collaboration with other EU-funded projects. The Circular DigiBuild project, funded by the Interreg Danube Region Programme, was presented. The project aims to accelerate the adoption of emerging technologies to support the implementation of circular economy principles in the construction sector across the Danube Region. In addition, the B2GreenHub platform – The Platform That Creates Synergies for Innovation and Sustainability – was presented, demonstrating how it supports businesses in enhancing market competitiveness, and driving sustainable innovation.

During the two-day meeting, partners were briefed on communication and dissemination activities, and tasks related to the development and finalisation of the transnational action plan were discussed, promoting active engagement and collaboration on strategic objectives.

The 4th PP and SCOM Meeting marked an important milestone for the Danube GeoHeCo project by reinforcing coordination among partners, supporting the timely delivery of project outputs, and advancing the implementation of pilot investments. The study visit and interactive sessions further contributed to knowledge exchange and the practical advancement of shallow geothermal solutions across the Danube Region.

Follow the implementation process of the Danube GeoHeCo project through the project web site and related social media:

Project Danube GeoHeCo Web page:
https://interreg-danube.eu/projects/danube-geoheco

https://www.linkedin.com/company/danube-geoheco/

https://twitter.com/DanubeGeoHeCo

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The Danube GeoHeCo project is funded under the Interreg Programme for the Danube Region 2021-2027, with a total project value of 2,481,000.00 euros (co-financed by the European Union in the amount of 1,984,800.00 euros, or 80%). The project implementation period is from January 1, 2024, to June 30, 2026.