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PRESS RELEASE

EU project URGENT is getting ready for full-scale test operations

The European project URGENT, funded under Horizon Europe, has reached a significant milestone with the completion of its next-generation seismic exploration technologies - a major step toward sustainable and efficient geothermal resource exploration. In the coming months, full-scale test operations will begin at the project's three test sites in Hungary, Poland and Belgium.

Setting the scene for full-scale validation

In recent months, Seismic Mechatronics finalised the development of URGENT project's electric, low-impact seismic source (eVibe). Designed to generate consistent, low-distortion acoustic signals across a wide frequency range, the eVibe can reach geothermal reservoirs up to 4000 meters deep.

At the same time, Innoseis Sensor Technologies integrated innovative micro-electromechanical systems (MEMS)-based seismic sensors into autonomous recording nodes, combining high-quality data collection with cost-effective deployment.

A **small-scale field test** conducted in **November 2025** successfully validated the performance of these solutions, confirming key design choices. One highlight was the **synchronous shooting performance of the Hurricane eVibe**, which performed flawlessly, demonstrating excellent visibility, intuitive handling, and precise control.

Further testing combined Innoseis **MEMS** with the **hurricane eVibe from Seismic Mechatronics,** emphasising the system's robustness under real field conditions. Despite the intentionally limited size and complexity, the encouraging results provided early validation of the URGENT approach and established a strong baseline for the next phase.

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Moving forward: getting ready for field testing

In late January, a **second field test** involving approximately 50 nodes provided deeper insights into system behaviour. Together with the seismic acquisition workflow optimisation led by Realtimeseismic, the project is now fully prepared to launch its full-scale test operations.

Spotlight on the test operations

The URGENT project is entering a pivotal phase with the launch of **demonstration activities** across three strategic test sites in Europe: Százhalombatta site (Hungary), Konin site (Poland) and Mol site (Belgium). These operations are designed to **validate URGENT's cutting-edge seismic solutions**, demonstrating their ability to provide high quality data, to be more affordable, and much less intrusive for people living near potential energy sites. By testing these methods at three distinct locations, the project aims to prove that we can double-down on green energy while respecting the local environment from the exploration stage onwards.

The project has carefully chosen three locations that are representative of different types of geology found across Europe.

Százhalombatta, Hungary

The Százhalombatta site is unique because it is situated in an urban and industrial setting near a large oil refinery. This site is challenging for seismic acquisition because the noise from the refinery makes it difficult to get clear seismic data. URGENT will conduct a **2D test seismic survey** designed to produce high-quality data even in this noisy environment. Proving the geothermal potential here is also essential for providing renewable heat and power to the refinery.

Konin, Poland

The city of Konin is willing to use hot water from nearly 3 kilometres underground to feed a local heating plant. While the presence of water is known, there is currently a large uncertainty about the continuity of the geothermal reservoir. The identification of fracture zones and faults may be of great importance for the development of the geothermal project in Konin. URGENT's **2D test seismic survey** will provide a clearer map of the underground in the area. This will help the city confirm the potential of the site and reduces the risk for future energy projects.

Mol, Belgium

In Mol, a geothermal plant is already providing heat to local buildings and research centres. The hot water is produced from a deep limestone reservoir where flow occurs mainly through fractures and faults. URGENT will perform a **small 2.5D seismic survey** to prove the feasibility

of using the URGENT's technologies to image and map such structures at 4 km depth. This will support experts in understanding the reservoir behaviour and locating faults and underground structures.

Preliminary timeline for seismic surveys
Százhalombatta site (Hungary): 15th – 20th March, 2026
Konin site (Poland): April/May 2026
Mol site (Belgium): June 2026

Test site-specific information on the seismic campaigns

Százhalombatta, Hungary (MOL Group)

- Survey dates: The 2D test seismic survey at the Százhalombatta site will be conducted between 15th – 20th March, 2026.
- During this period, residents and workers may notice seismic sensors and mobile seismic source vehicles on the path of the survey lines.
- For specific information regarding the campaign or to report any issues, please contact Bence Kónya from the MOL Group project team at bekonya@mol.hu.

About Urgent

The URGENT project brings together 8 partners from 5 EU countries, including leading universities, renowned research centres, and specialised SMEs. Through transdisciplinary research, URGENT aims to decarbonise Europe's heating sector by advancing low-impact seismic exploration technologies and AI-driven analysis. The main goal is to optimise geothermal resource exploration in urban and sensitive industrial areas, enhancing plant longevity while improving public and community acceptance. The innovative solutions will be tested at 3 sites: Mol (Belgium), Konin (Poland), Százhalombatta (Hungary).

More information

Website: URGENT - Home

Partners: URGENT - Partners

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