

Eastern European countries, such as Hungary, Croatia, Slovakia and others, all have in common that heating during the winter period still sees a lot of use of fossil fuels, such as coal or gas. Just visiting the Cop meetings in Poland in 2019 was remarkable to experience the coal smog in the air during the event. In order to not only fulfill carbon emission reduction targets set by the EU, but also to improve the air quality for its citizens, these countries will have to seriously tackle this crucial element of their energy market. Geothermal energy is in this context providing a great opportunity, yet needs “a quicker uptake and government backing to help meet renewable energy targets”. The countries of the Pannonian basin, namely Hungary, Slovakia, Austria, Romania and Croatia sit on huge potential for geothermal energy that is so far very much untouched. While there are various geothermal heating plants in Hungary, and one power plant, the wider application of geothermal be it for heating only or also for power is so far very much underrepresented. The Pannonion basis provides higher temperature gradients than the average of Europe, actually around 10 degrees Celsius per 1,000 meters of depth.

At the same time these countries have one element in common and that they all set up centralized district heating systems during their times in the Soviet Bloc. So with the infrastructure in place already, the input is the element to be changed. Yet there are great political powers at play. Large European gas players bought into the Eastern European market in the 1990s and have not been receptive to have geothermal as a real alternative coming into the market. There have been great efforts in bringing geothermal to Slovakia, yet they never came to fruition. So while gas, so the article, is often described as a great intermediary, geothermal energy could be the solution to a faster coal phase out.

“If we intend to fulfil climate targets, we need to start working on a larger number of geothermal projects as soon as possible to reduce the time necessary for shifting from natural gas,” said Igor Kocis, co-founder and CEO of GA Drilling, a deep geothermal company based in Slovakia.

Geothermal development has been seen as risky and the high up-front cost has been seen as prohibitive. But successful project development in Hungary and Croatia has highlighted that the relative ease of access to the geothermal resources in the Pannonian Basin means there are real opportunities. But the relative ease of access to natural heat sources in the Pannonian basin means the region is ideally located for deep geothermal.

According to Kocis, the speed at which geothermal can replace fossil fuels in the region depends on how fast the technology can be tested and deployed. To do that, he calls for an increase in pilot projects in the coming years, so that large-scale commercial plants can be built as of 2030 which can then retrofit coal.

Phase out dates for coal vary between countries in central and eastern Europe, with Austria choosing 2020, Slovakia aiming for 2023 and Hungary 2030. Countries like the Czech Republic and Poland have no phase out date yet. Despite the great examples of geothermal

use in district heating, only around 4% of heating is currently provided by geothermal in the country. Croatia has currently one geothermal power plant and has issued four additional licenses for exploration in 2020. Austria has a small geothermal power plant, yet geothermal heating is still very much in its infancy despite efforts e.g. in Vienna and elsewhere. The current focus seems to be on heat pumps.

In Slovakia, the city of Kosice has been a target for potential development. According to the article there are currently four geothermal projects for heating. “Kosice is a sad example of how the region has been treating geothermal energy as a potential source of energy,” said Martin Hojsík a Green Member of the European Parliament from Slovakia. It is currently idle, meaning the town instead uses coal, often imported from Russia. The plant was built in the late 1990s and has an energy potential of 20 MW. However, it needs large investment to build a 16km pipeline to connect Košice, which has a population of 260,000 to an extensive district heating system.

A big challenge in these countries is also represented by political issues. Among others the lack of supporting legislation, makes it difficult to tap EU funding for projects and political interests are often tied to financial interests of key stakeholders.

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