



## **SUMMARY**

### **Update to the Benchmark Study – Geothermal Power and Heat Generation in Hungary**

#### **Project Objectives**

The declared objective of this project is to foster the co-operation of German and Hungarian authorities in the context of geothermal projects. The basis for this possible co-operation was created by a review of the legal, administrative, and economic conditions for the expansion of geothermal power generation in Hungary.

Specific recommendations regarding adjustments to the Hungarian legal framework were derived from the results of the review, and from the experiences made in the German market for geothermal power. The recommendations were presented to the participating Hungarian energy and mining authorities and discussed during a workshop. Delegates from the German Federal Environment Agency (Umweltbundesamt), Rödl & Partner, and GTN (Geothermie Neubrandenburg GmbH) represented the German participants.

#### **Project Results**

The development of a geothermal project is subject to many legal norms. These serve to protect the environment and natural resources (mining, environmental, and water legislation), and they also form the basis of supply contracts (energy legislation). The geological potential and the economic environment are additional determinants of project implementation. The following gives a brief overview of the results in the various areas studied.

The Hungarian mining authority is set to conduct the call for tenders of two mining concessions by the end of 2011. This procedure entails the precise definition of the location and size of the concessional areas to be awarded via public tender. The process has not begun yet, and there is no information regarding the location and type of the reservoir, or the desired utilization (power and/ or heat) of the geothermal energy.

The German system allows all legal entities to apply for an exploration permit. When granting the permit, the administration defines the size of the permit area, thereby avoiding the considerable burden on the administration caused by a public tender for the concession, and resulting in a timely allocation of concessions.

The investment-friendly climate in Germany and the low bureaucratic barriers to granting exploration permits led to many exploration projects being carried out by developers. These consequently turn into specific drilling and construction projects.

The Hungarian procedure of defining and then tendering individual concessions is inevitably an obstacle to large-scale exploration activities by investors and to the quick development of a market for geothermal energy.

Aiming at soil and water protection, Hungary introduced the obligation to re-inject the water extracted from aquifers in 2006. According to the Hungarian expert panel, only approximately 25 re-injection points were created, as opposed to 500 extraction points in use for agricultural purposes.

This fact can cause substantial tensions between economic and ecological interests. In spite of the fact that the re-injection requirement was introduced in 2006 in order to protect the aquifers and to ensure their sustainable use (reservoir pressure) along with economic incentives to comply (elevated fees for the discharge of thermal water into surface waters) the number of re-injection points remains very low.

New legal norms from 2010 have further exempted projects which extract thermal water for energy uses exclusively from the obligation to re-inject. The extracting users are therefore



delaying their investments into re-injection points due to the absence of legal requirements to do so. Only close co-operation of the mining and water authorities warrants the sustainable exploitation of the geothermal aquifers. In the Hungarian system, the mining authority is only responsible for the quality assurance of drillings up to a depth of 2,500 meters below ground level. According to the information available, there is no common database shared by the mining and water authority which would allow for a concerted approach. The basis for co-operation between the two authorities and for the development of quality standards for new wells would be a register of all existing production and re-injection wells in Hungary, along with the introduction of mandatory reporting by their respective owners or operators.

The following uncertainties are inherent to the Hungarian legal framework for investments in geothermal power generation:

- The level of the feed-in-tariff may be set, but the time period or the quantity for which it is granted varies for each individual project as these figures are determined by the Hungarian Office of Energy according to benchmarks. During the planning process this results in great uncertainty regarding the future expected revenue.
- The bureaucratic burden on the Office of Energy is high because of the project-specific setting of the tariffs and could be reduced by introducing general tariffs staged according to project size, including predetermined annual downward adjustments of the feed-in-tariff. This would accelerate project development.
- The time span from start to finish of a project, i.e. from exploration to drilling, plant construction, and connection to the grid, is much longer for geothermal projects than it is in the case of other renewable energy technologies. Tariffs fixed in the long-term consequently greatly improve access to funding.

Parliament is presently discussing a new incentive system. There is the opportunity to create a more investment-friendly climate by setting feed-in-tariffs that are permanent and distinct for each technology and project size. The capability to plan the investments will be improved dramatically once transparent and reliable tariffs have been established and project-specific evaluations are abandoned.

In comparison to the original study from 2005/ 2006 no changes to the norms governing the price setting for district heating have been noted. In Hungary, the prices for district heating are decreed by the council of each municipality taking delivery according to the Hungarian pricing law LXXXVII from 1990 (in conjunction with the modifying law LXVII from 2008). Pricing based on the conditions prevailing in the energy market is not possible under these conditions. It was recommended to create a legal framework resembling the German ordinance governing the pricing of district heating (AVBFernwärmeV), which provides for 'free' price setting while requiring that a previously determined and legitimate contractual price adjustment formula be observed.

This project was supported by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the German Federal Environment Agency with funding from the Advisory Support Program for Environmental Protection in the States of Central and Eastern Europe, the Caucasus, and Central Asia. The authors have the sole responsibility for the content of this publication.

Version: March 2011