

Hungarian Gas Storage is committed to the long-term introduction of modern, hydrogen-based energy storage options

Ákos Kriston will be one of the speakers at the Budapest Hydrogen Summit, to be held on 10 March.

Hungarian Gas Storage is committed to the long-term introduction of modern, hydrogen-based energy storage options. In line with the National Hydrogen Strategy announced last May, the Company plans to achieve, among others, decarbonisation goals on the existing storage infrastructure by connecting the power and the natural gas supply systems in its Aquamarine Project launched on 1 February 2021.

In this ongoing project, we will install an electrolyser system with a capacity of 2 megawatts (MW) at the Kardoskut Underground Gas Storage Site. The operation of the electrolyser to be installed will facilitate hydrogen production through electrolysis, using the surplus power instead of “switching off” the renewable energy source. Hydrogen thus produced is planned to be blended with natural gas and used in the Plant’s equipment originally operating with natural gas, directly reducing their CO₂ emission.

Moreover, in strict compliance with the quality requirements, it can also be transmitted to the end-users on the natural gas supply system. It is a spillover effect in the Aquamarine project that by using the existing infrastructure, directly makes the first step towards the widespread adoption of the hydrogen technology.

The financial resource requirement is over 3 billion Hungarian forints [approximately 8 million euros], about two-thirds of which is granted by the Ministry of Innovation and Technology by a grant awarded on a tender supervised by the National Research, Development and Innovation Office. The rest of the amount is provided by our Company, using own resources. The tender grant imposes strict deadlines on the project, allowing a maximum of 24 months for the implementation.

Following the successful application process, the project implementation started in early spring 2021, after which procurement procedures for key equipment were launched in full swing and detail engineering was ordered and completed. At present, we are expecting the delivery of key equipment from May 2022 on, when on-site construction work is also expected to start and then be completed presumably by the end of 2022. At that point, we plan to conclude the construction process by launching a test operation, so that by the original tender deadline, we will be able to produce hydrogen, use it on our own system after having it blended with natural gas, and possibly release it into the natural gas supply system.

The Research and Development programme also began in spring 2021, when the colleagues of four Universities and Research Institutes (Budapest University of Technology and Economics, University of Debrecen, University of Miskolc, University of Pannonia and the

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EIKI Research Institute at the University of Miskolc) carried out preliminary researches and diagnostics regarding the hydrogen-resistance of the storage system. By today, the results of preliminary research have already been incorporated into detailed engineering and now tests on practice samples are being prepared. Results of these tests are expected this summer.

Regarding regulation, we had a rather eventful year. Following thorough professional negotiations and having consulted with the relevant mining authorities, the Mining Act was successfully amended at the end of last year to enable smooth licensing for the implementation of facilities similar to the Aquamarine in a mining context. We have started regulation discussions with the participants of the natural gas supply system to ensure that blended hydrogen can appear in the supply system on the trading regulation side, kick-starting a wider use of hydrogen in Hungary, CE Energy News writes.