

"H2EU+Store" – Green Hydrogen for Europe: Hydrogen from sun and wind will be produced in Ukraine and stored for seasonal demand in Central Europe in the future

International industry partnership plans hydrogen ramp-up along the entire value chain - Letter of Intent signed

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In order to accelerate and ramp up the production of green hydrogen for Europe, which is vital for a climate-neutral future European energy supply, the international industry partnership consisting of Bayerngas GmbH, bayernets GmbH, Eco-Optima LLC, Open Grid Europe GmbH and RAG Austria AG has designed the "H2EU+Store" project.

"H2EU+Store" will on the one hand create the necessary capacities for renewable electricity and hydrogen production in Ukraine and on the other hand the expansion of storage volumes in Austria and Germany, accompanied by adaptations in the area of gas transport to Central Europe.

The next steps to achieve the above were set out in a joint letter of intent. *"Hydrogen is undeniably the key to a cross-sector climate-neutral energy system. With the "H2EU+Store" project, we are making a significant contribution to the needed expansion of hydrogen use in Europe. This infrastructure project is indispensable for the future security of energy supply in Austria and Germany; only in this way sufficient green energy will be available for electricity, heat, industry and mobility throughout the year,"* says CEO of RAG Austria AG Markus Mitteregger, underlining the importance of the joint plans.

Günter Bauer, Managing Director of Bayerngas GmbH, adds: *"Gases are part of the solution to achieve our climate goals, secure European industrial locations and ensure heat supply in the long term. With "H2EU+Store", we are demonstrating a possible way to supply hydrogen on a transnational basis. This illustrates that meaningful solutions can be found with technology-open thinking."*

In a phased step plan up to 2050, green hydrogen produced in Western Ukraine will be fed into the international gas transport network of Western Ukraine in dimensions significant for Europe and transported to the energy storage facilities of RAG Austria AG via the gas pipeline systems of Slovakia and Austria. *"The existing and future RAG energy storage facilities in Austria are ideally suited for storing hydrogen. Climate-neutral and thus green hydrogen produced from sun and wind in Ukraine can then be used for seasonal structuring of the Austrian and European energy supply according to customer demand,"* says Mitteregger.

Hydrogen paves the way for the European "Green Deal"

The European Union rightly sees hydrogen as a pioneer of the "Green Deal" and thus as an important pillar of a climate-neutral energy system. Hydrogen can be used flexibly in all sectors. In addition, hydrogen can be stored seasonally in large quantities in suitable underground storage facilities, as well as transported on demand in existing gas pipelines in an environmentally friendly

manner according to customer requirements. These unique properties play a decisive role in the future energy system (due to fluctuating energy supply from sun and wind) in order to maintain security of supply. Hydrogen is therefore the climate-neutral energy carrier of the future.

European cooperation necessary - energy knows no borders

In order for hydrogen to fulfil its intended role in the transformation of the European energy system, this energy carrier must also be available in appropriate quantities and at competitive prices. In addition to local hydrogen production within Germany and the EU, importing a significant amount of green hydrogen to meet demand is essential.

In onshore Europe, Ukraine offers best conditions for large-scale, green hydrogen production. Ukraine combines an enormous potential for electricity production from sun and wind with access to existing supra-regional gas infrastructure for the transport of hydrogen to Central Europe. This is also in line with the European Union's hydrogen strategy, in which Ukraine is seen as one of the primary partners for the hydrogen rollout.

Rapid creation of a framework for hydrogen expansion

The industry partnership "*H2EU+Store*" supports the EU's hydrogen strategy and lays the foundation for the desired ramp-up of hydrogen use in Austria and Germany. *"Now it is up to the politicians to create a framework for a rapid implementation of the "H2EU+Store" initiative. For the realization of this important international energy project, a corresponding political will to implement "H2EU+Store" is needed so that the energy transition can actually be achieved and does not remain a declaration of intent,"* Mitteregger demands. *"We are ready. Our existing and additionally planned wind and photovoltaic parks can be used for hydrogen production in Western Ukraine. However, in order to be able to quickly implement the necessary expansion, considerable investments are needed, which must also be provided by the European Union,"* adds Stepan Kozytsky, co-owner of Eco-Optima LLC.

"H2EU+Store" connects to the hydrogen network project "HyPipe Bavaria" of bayernets GmbH and Open Grid Europe GmbH at the border to Germany at the Überackern/Burghausen border crossing point for the use of existing transport pipelines or pipeline routes. Together, the construction of a hydrogen infrastructure in Bavaria could thus begin in the near future. *"We are convinced that a hydrogen infrastructure is the key to the energy transition in Europe,"* explains Dr. Matthias Jenn, Managing Director of bayernets GmbH. *"Especially through the networking of producers and consumers in a holistic system, the transport infrastructure makes this key contribution to the success of the energy transition,"* continues Dr. Jörg Bergmann, spokesman for the management of Open Grid Europe GmbH.

RAG Austria AG

RAG Austria AG is the largest gas storage and thus energy storage company in Austria and one of the leading technical storage operators in Europe. In recent years, RAG has been working with international partners to develop an energy storage hub for Central Europe in the Upper Austria region, with a direct connection to Bavaria, with a storage volume of around 71 TWh/ 6,400 million m³ and a withdrawal capacity of around 32 GW/ 2.8 million m³/h. In addition, RAG Austria AG was the first company in the world to successfully investigate the storage capability of hydrogen in underground pore storage facilities with the "*Underground Sun Storage*" project and to confirm its feasibility.

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Bayerngas GmbH

Bayerngas GmbH is the parent company of the Bayerngas Group. The Group has been active in the German energy market along the gas value chain for almost six decades. The Group is active in the business areas of gas procurement, gas sales and gas trading, pipeline operation and marketing of network capacities, gas storage operation and marketing of storage capacities as well as technical services. Bayerngas GmbH also holds financial interests in the exploration and production business and in the fibre-optic infrastructure business. The Group's sales revenues amounted to 5.6 billion euros in 2019.

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With a network length of around 1,660 km and an average pipeline diameter of DN 550, *bayernets* is one of the largest transmission system operators in Germany. As a transmission system operator, *bayernets* is responsible for its own gas transport network in Bavaria and offers its customers the highest level of supply security and supply quality. At the same time, *bayernets* makes a significant contribution to optimizing gas transports in southern Germany and neighboring countries. The company ensures the performance of the transport network through interference-free operation, optimization in line with demand and sustainable network expansion.

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Open Grid Europe GmbH

OGE is one of Europe's leading transmission system operators. With our approximately 12,000 kilometers of pipeline network, we transport gas throughout Germany and, due to our geographical location, we are the link for gas flows in the European internal market. Our approximately 1,450 employees stand for security of supply. We make our network available to all market participants in a non-discriminatory, market-oriented and transparent manner. We shape energy supply. Today and in the energy mix of the future.

For more information on the company, visit www.oge.net.

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Eco-Optima LLC

Eco-Optima Group is the largest private wind farm and PV operator in Western Ukraine with a current installed capacity of 147 MW. Another 94 MW are in ready-to-build status. The wind and PV plants that are already on the grid or can be implemented immediately are located in the Lviv and Ivano-Frankivsk regions. Some of Eco-Optima's projects were implemented in partnership with EBRD (European Bank for Reconstruction and Development) and a PV park was realized with the Austrian Development Bank (OeEB).

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