

Hidroelectrica and Verbund, along with a consortium of partners from Austria, Germany and the Netherlands, will install 2GW of renewable generation capacity in Romania and corresponding electrolyser capacity to produce hydrogen. The project will make use of off-grid wind and on-grid hydropower generation.

Romanian state-owned hydropower generator Hidroelectrica will seek approval from shareholders this month to sign an initial agreement with Austrian utility Verbund for the development of the Green Hydrogen and Blue Danube project.

The project hopes to produce 80,000 t/yr of green hydrogen from renewable generation sources and transport the hydrogen to offtakers in central and western Europe.

The firms also plan to deploy a liquid organic hydrogen carrier (LOHC), which is a diesel-like liquid that can “chemically store” and release hydrogen, according to Hidroelectrica. The benefit of using LOHC is that it can be handled in ambient conditions, enabling it to be transported on existing infrastructure that is used for fossil fuels, primarily ships and barges. Offtakers in central and western Europe will then reconvert the LOHC to hydrogen. The project also aims to make use of hydrogen propulsion technology for vessels that will be transporting the liquids, to further minimise its CO₂ footprint. A total of 40 hydrogen-fuelled barges could accompany the project, Verbund said in 2019.

The companies will seek funding from the EU as part of the Important Projects of Common European Interest (IPCEI) framework. The development of large-scale hydrogen production capacity will help in the substitution of fossil fuels and contribute to the European and national climate objectives and the European Green Deal as green hydrogen can be used as a substitute feedstock for steel and chemical production and refining among others, Hidroelectrica said.

After completing feasibility studies, Hidroelectrica and its partners plan to send the final notification of the project to the European Commission by the third quarter of this year or the first quarter of 2022 and begin implementation from the third quarter of next year until 2030.

Verbund was involved in the development of the hydrogen-operated railway in the Zillertal valley and part of a consortium that developed an electrolysis system at a steel production site in Linz.

Essen-based utility Steag last month joined forces with German steel firm Thyssenkrupp to build and operate an electrolysis plant with a capacity of 500MW. The firms will also seek funding within the IPCEI framework.

Hidroelectrica shareholders will vote on signing the Green Hydrogen and Blue Danube project initial agreement on 29 March.



Romanian Hidroelectrica and Verbund joint hydrogen project

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