

Project one-pager

Green Hydrogen Hub Denmark / Hydrogen Valley

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1. Project description

Green Hydrogen Hub will be the World's first co-located scheme to combine large-scale electrolysis, hydrogen storage and hydrogen-fuelled compressed air energy storage (CAES). The electrolysis system will have a capacity of 350 MW, supported by on-site storage of 200 GWh of hydrogen, while the CAES facility will have a generation capacity of 320 MW and storage capacity of approximately 4 GWh per 12-hour cycle. Additionally, the project aims to optimize its overall energy efficiency by capturing energy losses for use in district and/or industrial heating.

Green Hydrogen Hub is located in Northern Jutland, Denmark, where large caverns suitable for storage of hydrogen or compressed air for CAES have been created in salt deposits during salt producing activities. The secondary use of these salt caverns for energy storage aligns with the circular economy ambitions of the Green Deal. The location is close to existing energy infrastructure: high-voltage electricity transmission grid, gas transmission network, underground gas storage and wind resources in the North Sea.

Green Hydrogen Hub will operate in the electricity market and the green hydrogen supply market and will be a springboard to accelerate the energy transition in Northern Europe. The first consumer of the hydrogen produced by the project will be the project's CAES facility which will facilitate RES integration by providing balancing services for RES generators and grid-support services to the TSO. The project will also act as a key link in the hydrogen supply chain by providing green hydrogen as fuel and feedstock to the transport and industry sector.

Please select which part of the value chain for hydrogen your project focuses on (select one or more, where applicable):

Production	Transmission	Industrial application	Mobility	Energy	Housing application	Other
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Partnerships and spillover effects

Green Hydrogen Hub Denmark, originated in 2016, is promoted by a consortium consisting of private and public companies committed to achieving the Danish and European RES and CO2 targets and establishing the value chain for green hydrogen in Denmark and the neighboring Member States.

Green Hydrogen Hub will use renewable energy on a flexible basis and transform this into

1. stable, flexible, green electricity with a high level of security, and
2. green hydrogen to customers, who will then refine this further into products that can then accelerate the green transition in other industries or sectors.

Green Hydrogen hub are thus searching for European stakeholders, who share the vision. Potential cooperation partners could be PTX clusters in use of Hydrogen, Stakeholders utilizing underground energy storage or other stakeholders.

A further presentation and value chain outlook can be found here:

<https://greenhydrogenhub.dk/meet-the-team/>