

NORDIC
HYDROGEN
ROUTE

BOTHNIAN BAY

ENABLING CHANGE THROUGH NEW INFRASTRUCTURE

Driving decarbonization, regional green industrialization, economic development, and European energy independence



22/04/2022

Nordic Hydrogen Route is an initiative between Gasgrid Finland and Nordion Energi by building-up a **cross-border hydrogen infrastructure in Bothnian Bay Region and an open hydrogen market by 2030**. NHR will accelerate the creation of hydrogen economy and new investments to support European energy transition and increase the access to green and competitive domestic energy. There is no major gas network infrastructure in Bothnian Bay, on either the Finnish or Swedish side, so the Nordic Hydrogen Route will be newly built.

In the longer term, the vision is for Nordic Hydrogen Route to **link to a wider European hydrogen infrastructure**, enabling exports of excess hydrogen production by 2040 to Central Europe.

- **1,000 km of new, dedicated hydrogen pipelines** will serve **65 TWh of identified potential hydrogen demand** in the Bothnian Bay region by 2050.
- The core route will be along the coastline, with a branch to Kiruna.
- The pipeline network could transfer energy to hydrogen demand sites **2-4 times cheaper than electric powerlines**, building the hydrogen economy cost-efficiently.
- The pipelines will transport hydrogen produced from abundant wind resources – utilising excess or dedicated generation from up to **48 GW of wind capacity** in the Bothnian Bay region by 2040.
- The Nordic Hydrogen Route investment is estimated at **3.5B EUR**, offering a hydrogen transportation cost of 0.1-0.2 €/kg.
- The pipeline would **enable ten-fold investments** around 37B EUR in wind power and electrolysis.
- The pipeline can facilitate **emissions savings of up to 20 Mt CO₂e per year by 2050** by enabling industries to embed renewable hydrogen into their processes, and by replacing fossil fuels with e-fuels. This represents around 20% of current yearly emissions in Finland and Sweden and helping the countries reach **their respective climate neutrality targets of 2035 and 2045**.
- Low-carbon hydrogen will be a **critical enabler of the transition** for **hard-to-decarbonise sectors** of the economy like steel and metals production.
- Nordic Hydrogen Route allows **sector integration on a large scale, reducing costs through cross-industrial flexibility**. At the same time, increased sector integration has **benefits for energy system resilience, infrastructure co-optimization, and energy security**.
- The regional hydrogen economy is expected to create up to **25,000 jobs by 2030**, and **up to 46,000 by 2040**.

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The envisioned new hydrogen infrastructure

Nordic Hydrogen Route is an initiative between Gasgrid Finland and Nordion Energi to accelerate the creation of a hydrogen economy by building up a cross-border hydrogen infrastructure in Bothnian Bay region and an open hydrogen market by 2030. The aim of Nordic Hydrogen Route is to drive decarbonization, support regional green industrialization, economic development, and European energy independence. The companies seek to develop a network of pipelines that would effectively transport and store energy from producers to consumers to ensure they have access to an open, reliable, and safe hydrogen market. Find out more: www.nordichydrogenroute.com