

North Sea Region Hydrogen Roadmap

A STRATEGIC SHIFT: FROM LOCAL HUBS TO NATIONAL IMPACT

To achieve the European Fit for 55 targets, the North Sea Region (NSR) needs a realistic plan. Current national strategies mostly follow a "Top-Down" approach, focusing on large-scale infrastructure or the "National Backbone." However, the analysis in LIHYP work package 4 shows that this is not enough. We need local and regional production and usage of hydrogen.

Hydrogen is not the goal itself; it is a tool to solve local energy challenges!

Real progress happens in our regions! Regions and companies can take the lead in upscaling the hydrogen economy by realizing local energy hubs where hydrogen is a solution to a specific problem. LIHYP proposes a shift towards a phased (inter)regional strategy:

Phase 1 Local Hubs (decentralized): We first build decentralized energy hubs where local hydrogen production meets local demand directly.

Phase 2 Regional Connections: We connect these hubs to create strong regional networks, enabling exchange between neighbors.

Phase 3 National Integration: Finally, we connect the mature (inter)regional networks to the national grid when it becomes available.

ECOSYSTEM DEVELOPMENT: DECENTRALIZED ENERGY HUB

A hub is a location where hydrogen is produced, converted, and used within a small area. By keeping these functions close together, we avoid the need for expensive long-distance transport and storage. This is the fastest way to start the hydrogen economy.

Action A - Develop Short Value Chains: We prioritize projects where production, transport, storage, and consumption are physically close.

This minimizes energy loss and removes the dependency on national infrastructure.

Action B - Solve local problems: We use hydrogen as means to an end to solve immediate regional challenges, such as:

- Grid Congestion: Converting excess regional wind/solar energy when the grid is full.
- Industry Decarbonization: Providing clean fuel for local industry that cannot electrify.

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TRANSITION FROM ISOLATED PILOTS TO A UNIFIED NORTH SEA MARKET.

STRATEGIC ALIGNMENT

One Definition: Adopt shared KPIs and definitions for "Green Hydrogen" across all regions.

SME Matchmaking: Governments must actively link local SMEs to cooperate. To enable SMEs to join the hydrogen economy and to ensure an inclusive ecosystem..

Export Strategy: Position the North Sea Region as Europe's primary hydrogen supplier.

REMOVING BARRIERS

Fast-Track Permitting: Implement a unified, accelerated permit process for projects, ideally crossing borders.

Harmonized Safety: Establish one set of safety and fueling standards (e.g., for trucks) to enable seamless transport.

ECONOMIC VIABILITY

Joint Procurement: Regions aggregate demand to negotiate lower prices for technology.

Full-Chain Support: Shift subsidies from CAPEX (building) to OPEX (operating) and infrastructure.

Long-Term Contracts: Promote guaranteed offtake and supply agreements to de-risk investment.

INFRASTRUCTURE & INNOVATION

NSR Infrastructure Fund: A dedicated fund for the "missing links" (regional pipelines) that national budgets ignore.

Smart Assets: Prioritize retrofitting gas pipes and salt cavern storage over building new assets.

Learning Program: Structured transfer of lessons from pilots directly to new projects.

HUMAN CAPITAL & MONITORING

NSR Hydrogen Academies: We need training for technicians, engineers, and safety experts to ensure a technical workforce across the region.

Local Benefits: Win public support by promoting local jobs and reduction of energy dependency, not abstract climate goals.

Dynamic Monitor: Use real-time data to adjust the strategy based on facts, not forecasts.



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