

Five key factors

for making the Nordics a global frontrunner in hydrogen

Hydrogen is an essential component in moving away from fossil fuels and towards a green transition. In January 2025, the Nordic Hydrogen Valleys Conference gathered experts on clean hydrogen development for a workshop addressing areas of priority for realising Nordic hydrogen value chains. Set out below are five key factors that the workshop resulted in, which highlight actions that need to be taken for a future Nordic hydrogen society.

1

Public dialogue

Investment in hydrogen needs to start with investment in the people.

2

Economy

The economic viability of hydrogen-based industries is slow to materialise. The Nordic countries should work together to level the playing field for faster green transition.

3

Materials

The security, safety and lifetime of infrastructure is vital for the hydrogen value chain.

4

Energy supply

Meeting the growing energy demand requires drawing on the natural resources and positions of strength found in each Nordic country.

5

Communication

The ability to communicate transparently, to foster accessibility to research results, is also the pathway to create a common understanding on hydrogen value chains, and this is essential for their success



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1

Nothing about us without us – this was the clear message from the workshop participants. Social acceptance is created from local engagement and a conversation in the public domain about the options we have in the green transition. Indigenous experiences are teaching us the lesson that local communities need to define the problem that needs to be solved. Decisions at local government level should build on collaboration aimed at responding to local opportunities and needs, rather than letting the governmental and investor decisions dictate what the opportunities and needs are.

2

Fossil fuels are considered too cheap, due to decades of benefitting from state aid and generational payment of infrastructure. However, we are now facing the environmental costs of this and can no longer postpone climate action. To switch to a full reliability on renewable energy sources, the Nordics need long term realistic support schemes for matching plans with progress. These will likely vary from country to country, but with a common Nordic target already in place, this is the foundation of strength that we stand on – diversity really is key. By supporting a level playing field, the power markets and energy domains will find their way to becoming economically viable. Consumers, businesses and investors need to see the shape of the energy markets to act in them.

3

Advancements in materials science are critical for making hydrogen value chains viable and realistic. Durability, lifetime, costs, access to materials, safety and predictability all play into the most basic parts of the hydrogen equation. It is important to continue working together across the Nordics to find answers based on materials science, not only for the needs of building real hydrogen valleys, but also to match the demands of the climatic conditions of our geography.

4

Our current energy demand is met by a mix of fossil fuels and renewable energy sources. While the use of renewables has increased rapidly, fossil fuels still play a major role in meeting Nordic energy needs. The good news is that there are many viable options to transition toward a fossil-free energy system. Energy efficiency is a key tool as it contributes to reducing demand. Energy storage and conversion between the energy domains offer the necessary flexibility for balancing production and demand, as do consumer flexibility services. Geographical diversity holds some of the answers but also offers conflicts of interest. All our national and cultural differences become our combined strength when we have a good understanding of our options for a secure energy supply, and act accordingly.

5

Facts matter – not just opinions. Good decision making is based on transparency, technical knowledge and relevant information. This information matters, because disinformation sows distrust. Trust in institutions, actors and researchers is key. All stakeholders in the hydrogen sector should be able to communicate clearly what social acceptance and green transition is about, at all levels, in all communities, to support the overall Nordic ambitions.



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