H_2S IPP Hydrogen Safety and Improved Permit Processes

NORDIC HYDROGEN VALLEYS

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22/1 2025, Luleå

Nordic Energy Research

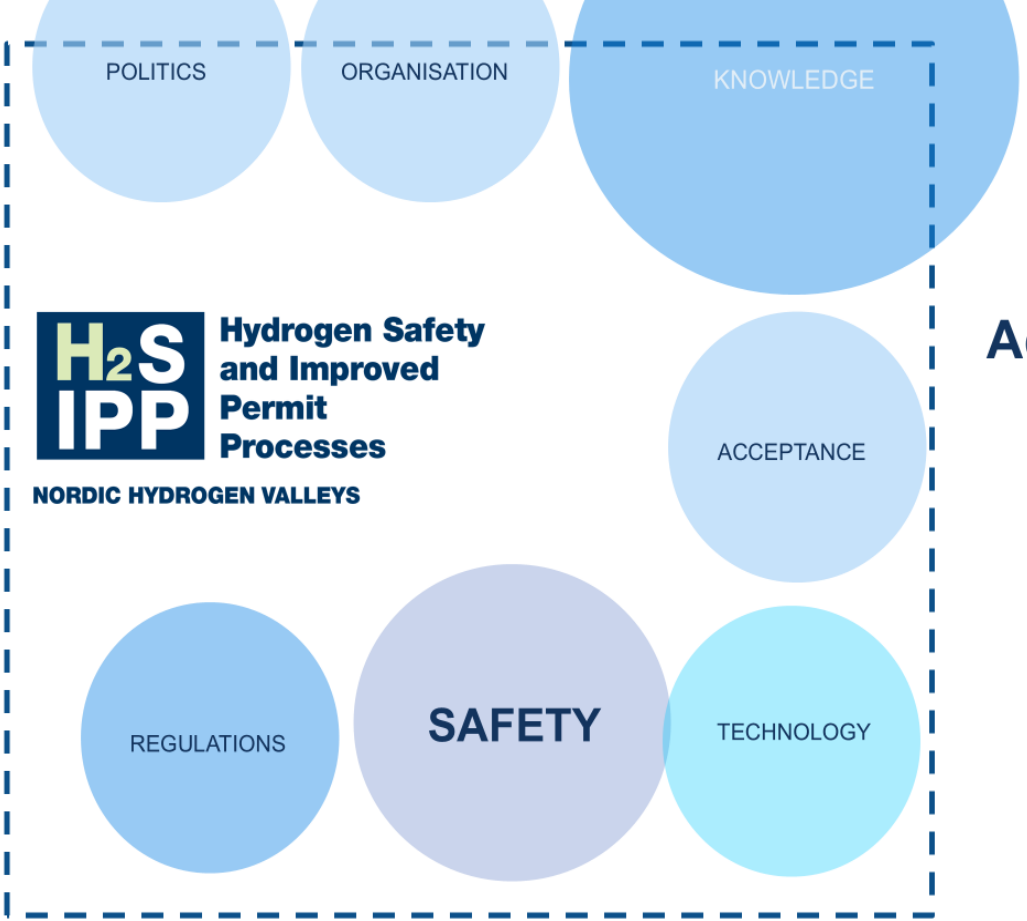
Nordic Hydrogen Valleys as Energy Hubs

Lund University

Aalto University

NTNU Norwegian University of Science and Technology

Luleå University of Technology



Addressing major barriers

14 partners
3 countries

A team covering the hydrogen industry, local hydrogen energy systems, pipelines, refuelling stations, NGOs, public partners and four universities.

H2S IPP

AFRY ÅF PÖYRY

NORDION ENERGI

hydri

GÄLLIVARE

BODENS KOMMUN

SSAB

SKOOGS Bränsle AB

GEN-H Hydrogen energy solutions

ENERGIGAS SVERIGE

ZELK

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Pathways to 2030 and 2040

We will develop strategies to delimit key barriers identified in recent work for the implementation of hydrogen in the Nordic countries:

1) permit processes
2) safety distance determination
3) social acceptance

OBJECTIVES

1. To suggest how to improve permit processes

2. To present ways of working to increase the social acceptance

3 To fill the gaps regarding safety calculations as decision material for regulations etc

4. Increase stakeholder interaction between disciplines, countries etc

The overarching objective is to reach a more effective way of working regarding safety issues and permit processes, increase the acceptance for the use of hydrogen in society, and remove political and organizational barriers with respect to hydrogen safety.

Mentimeter results 2023-12-05, The Swedish Hydrogen Conference

Are the Swedish authorities well adopted to a fast implementation of hydrogen facilities?

Insights, on a general level

- Knowledge exchange with Swedish Agencies (MSB, SvK, Ei, SEA, NV, RK…) regarding regulations, knowledge gaps, safety distances etc.
- The arranged events and given presentations have been well appreachiated.
- The H2SIPP newsletter got good response and proven interests for the research questions.

  - The project has an important role to fill.

Reflections - Partners

1) The public acceptance and commitment is set on trial when e.g. now the first hydrogen pipelines are planned in the north of Sweden. Very important for both companies, and municipalities such as Boden.

2) Large industries are used to handle all gases, including hydrogen.

3) The understanding, project processes and safety planning in SME with regards to hydrogen plants has to be verified.

4) The power capacity need is a core factor for all new investments.

5) The need for further knowledge within local authorites is well addressed.

Insights - Researchers

1) The companies struggle with unclear regulations, but find their ways.
2) The permit processes can be both more clarified and improved.
3) First experiments ready for input to improved calculations on safety distances.
4) The pre-knowledge on how hydrogen disperse in the soil is very low.
5) The cross-border collaboration and exchange with other projects help forward.

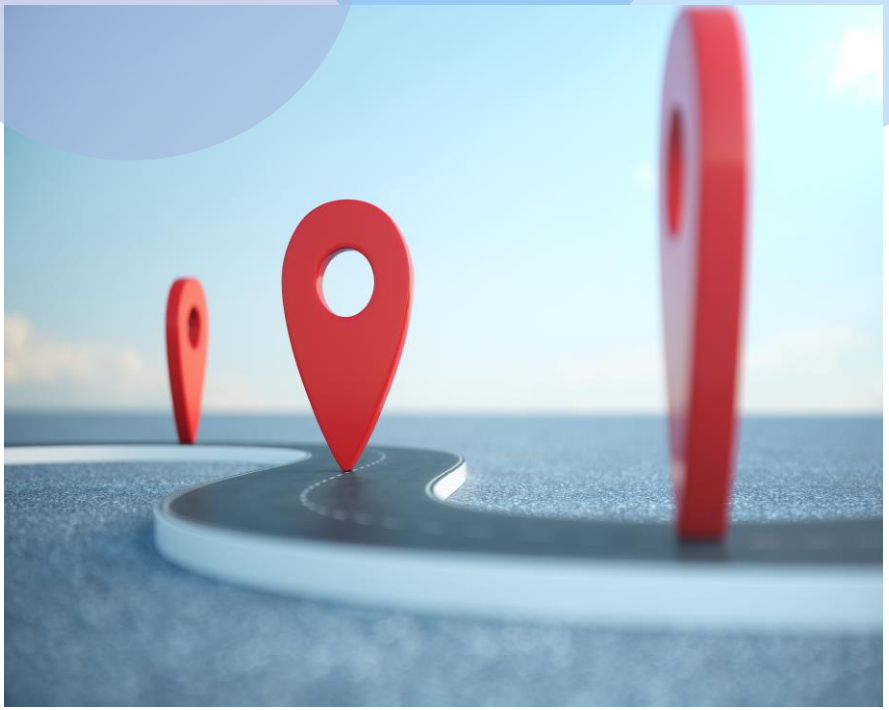
Today's H2SIPP requests!

- Collaborations on the 2030 and 2040 roadmaps across the Nordic countries.
- Most important parameters and stakeholders for the strategies?

SAFETY

PERMIT PROCESSES

ACCEPTANCE



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Tomorrow, listen to the H2SIPP researchers:

Maria Petterson & Oskar Johansson, LTU on **regulations**,
Marcus Runefors, LTH/LU & Michael Försth, LTU on **fire and explosions**,
Pedro Vilaco, Aalto, on **material** issues

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