

Activities in Top of Europe Nordic Countries

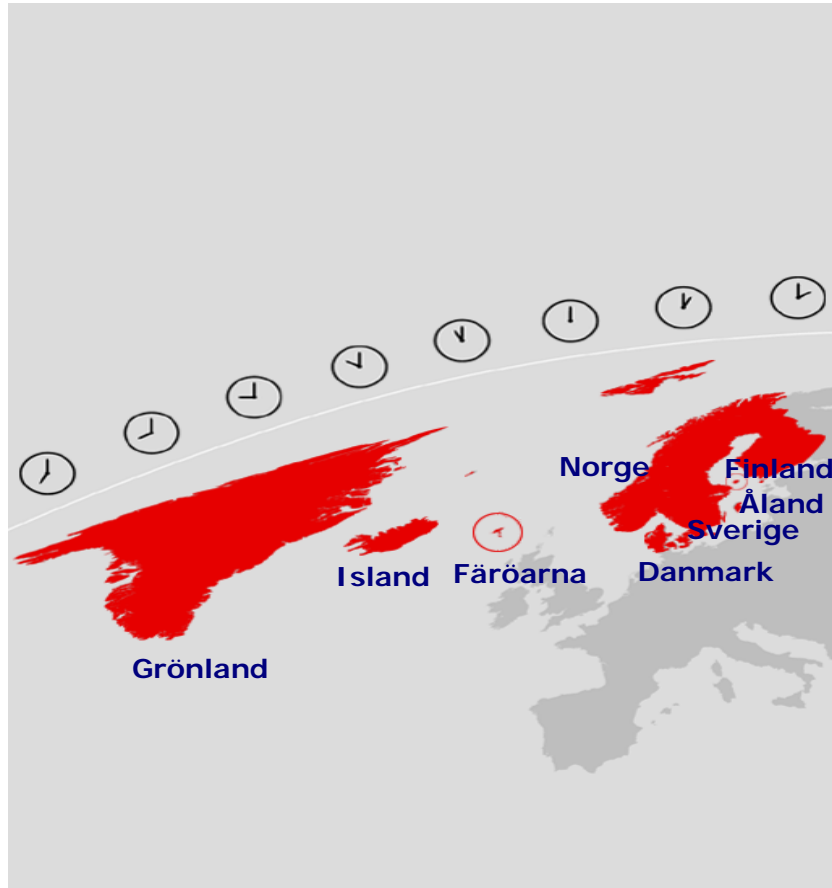
Dr. Birte Holst Joergensen
Nordic Energy Research

Workshop

Supporting Regions to Integrate Hydrogen

Brussels, Wednesday 4th October 2006

Nordic Cooperation



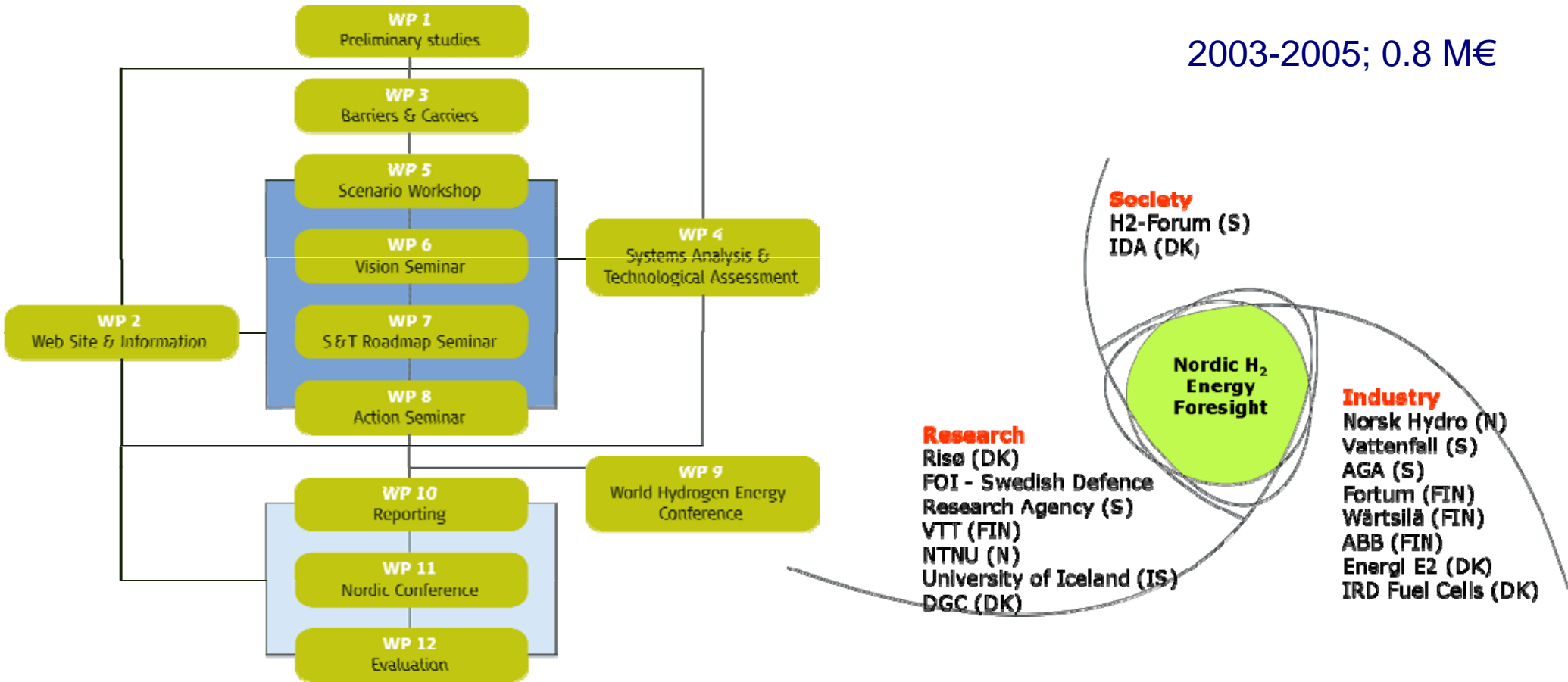
- Nordic Council, 1952
- Nordic Council of Ministers, 1971
- Nordic Energy Research Programme, 1985
- Nordic Energy Research (institution), 1999
- 24.6 million inhabitants
- Highly developed, well-functioning & secure welfare states
- Top on international ranking lists on competitiveness, innovation, public governance, living etc.

Some Highlights

- Icelandic vision for the hydrogen economy, 1998
 - INE (Icelandic New Energy)
 - ECTOS, 2001-2006 & HyFleet Cute, 2007
- Nordic Hydrogen Energy Foresight, 2003-2005
- West Nordic feasibility project on wind/hydrogen in Greenland and the Faroe Islands, 2004-
- Danish FC&H₂ RD&D programme, 2005-
- Norwegian Hydrogen Strategy, August 2005-
- Hyways, 2004-2007
 - 1st phase: Norway
 - NORWAYS: national in-depth study, 2006-2009
 - 2nd phase: Finland, 2006-
- Fuel Cell Finland Industry Grouping, 2006-

Nordic H₂ Energy Foresight

2003-2005; 0.8 M€





ECTOS



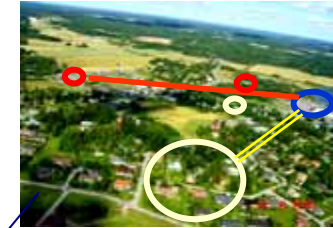
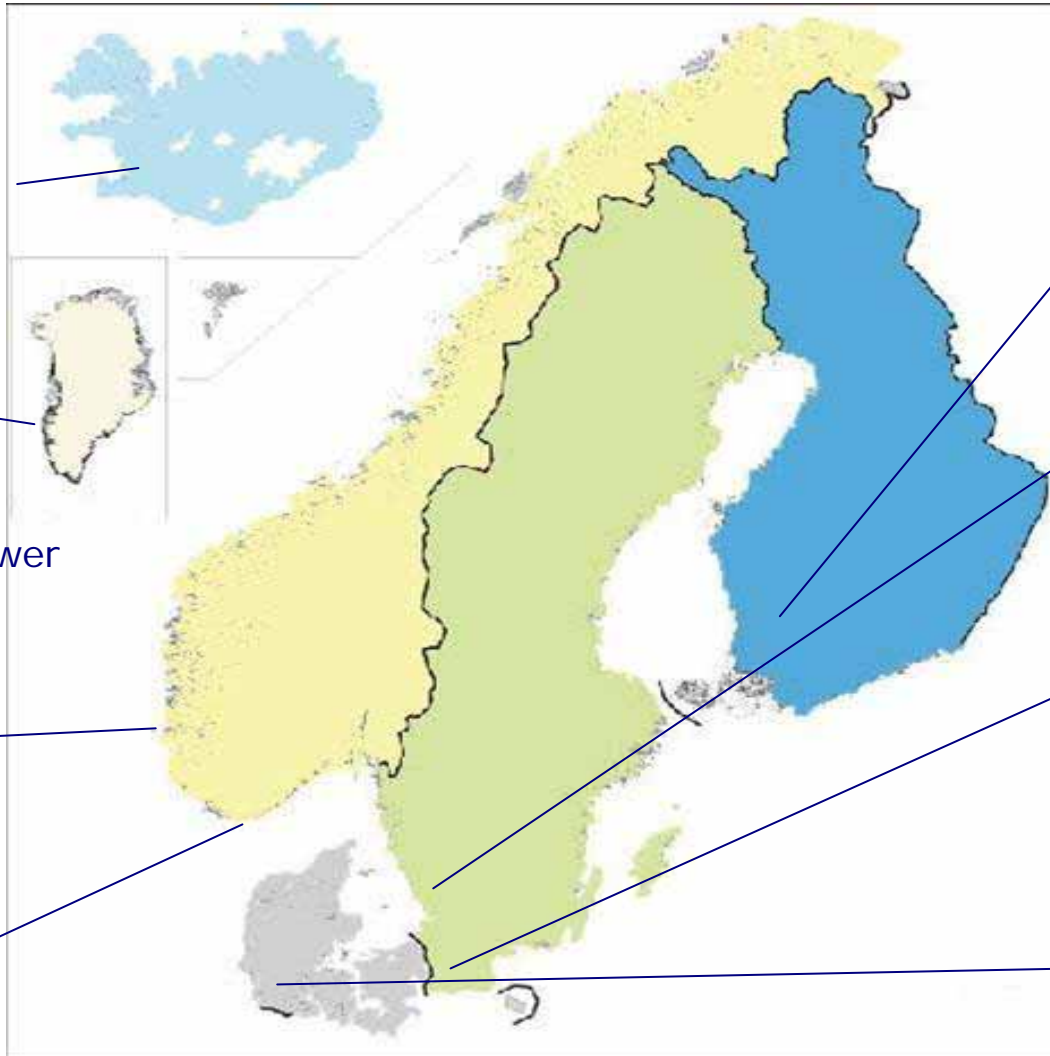
H2 from hydropower



Utsira



HyNor



FC CHP residential



HyFuture

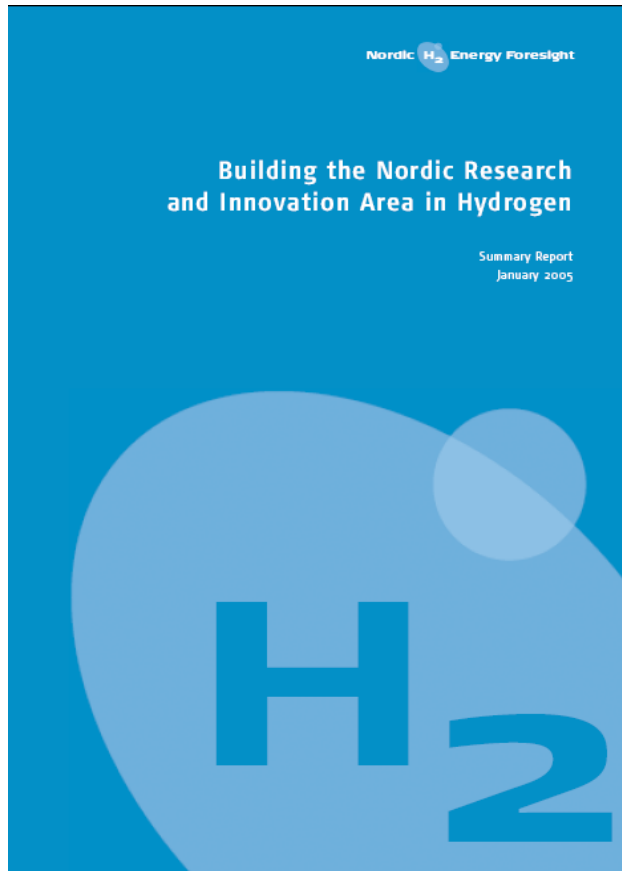


H2 fuelling station



HIRC





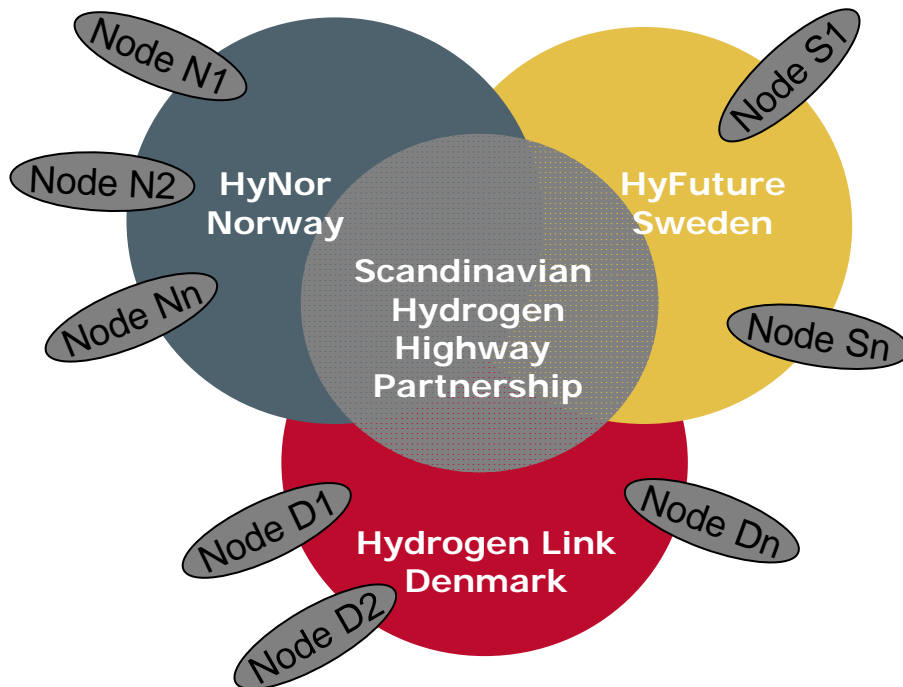
Recommendations

1. Information and awareness campaigns on the hydrogen economy and innovation
2. Nordic co-operation on research and development in H₂&FC
3. Demonstration projects, lighthouse projects and stimulation of niche markets:
 - Urban areas
 - Remote areas or islands
 - Marine applications
4. International co-operation



SCANDINAVIAN HYDROGEN HIGHWAY PARTNERSHIP

WWW.SCANDINAVIANHYDROGEN.ORG



○ **Founded June 2006**

○ **Vision:**

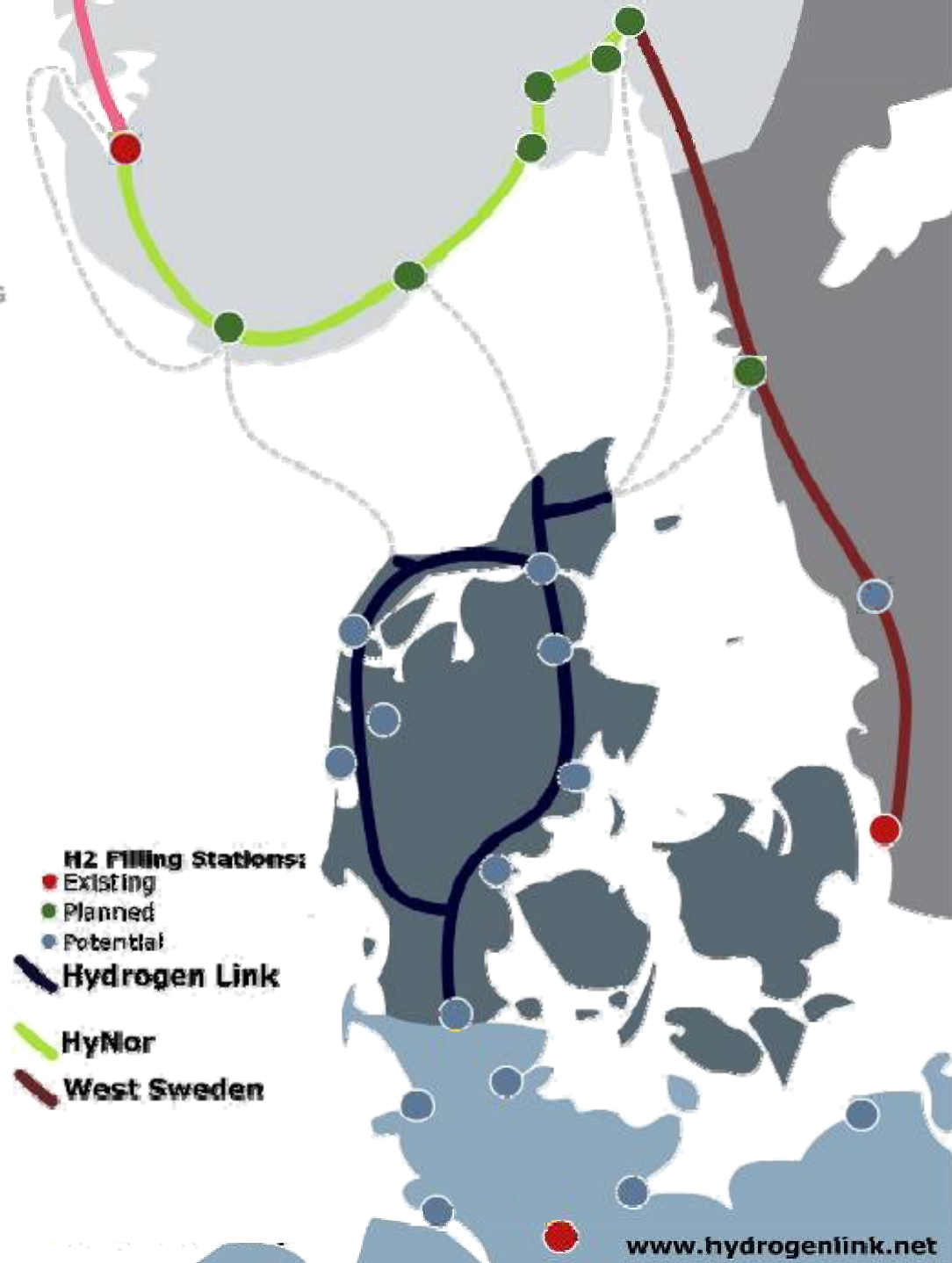
To make the Scandinavian Region one of the first regions in Europe where hydrogen is available and used in a network of refuelling stations



SCANDINAVIAN HYDROGEN HIGHWAY PARTNERSHIP

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- Scandinavia aims to become one of the first European Regions where hydrogen is **commercially viable** as a vehicle fuel
- A **coordinated network** of actors, refuelling infrastructure and demonstrations
- **Reinforcing** each others industries and infrastructures
- Leverage the **synergies** between different types of applications (roads, marine, stationary, etc)
- Find **cooperation** with existing alternative fuels
- Ambitions to qualify as a **Hydrogen Lighthouse Project** in the EU



Top of Europe Demonstrating H2&FC



- Bodø seminar, 6 – 7 September 2006, prior to Nordic Council of Energy Ministers’ annual meeting
- Conclusions
 - Imperfect markets – need for technology push and market pull initiatives
 - Complementary competences, critical mass and cooperation
 - Branding sustainability, foresight and user-driven technologies
 - Public-private partnerships led by industry and with strong political support from governments
- Ministers noticed the strong interest in making the Nordic countries into an area for demonstration of new energy technologies
- Next steps
 - To further clarify and decide how the Nordic energy and energy research cooperation can support visionary, strong public-private partnerships as the key driver behind successful demonstrations

Thank you for your attention

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