

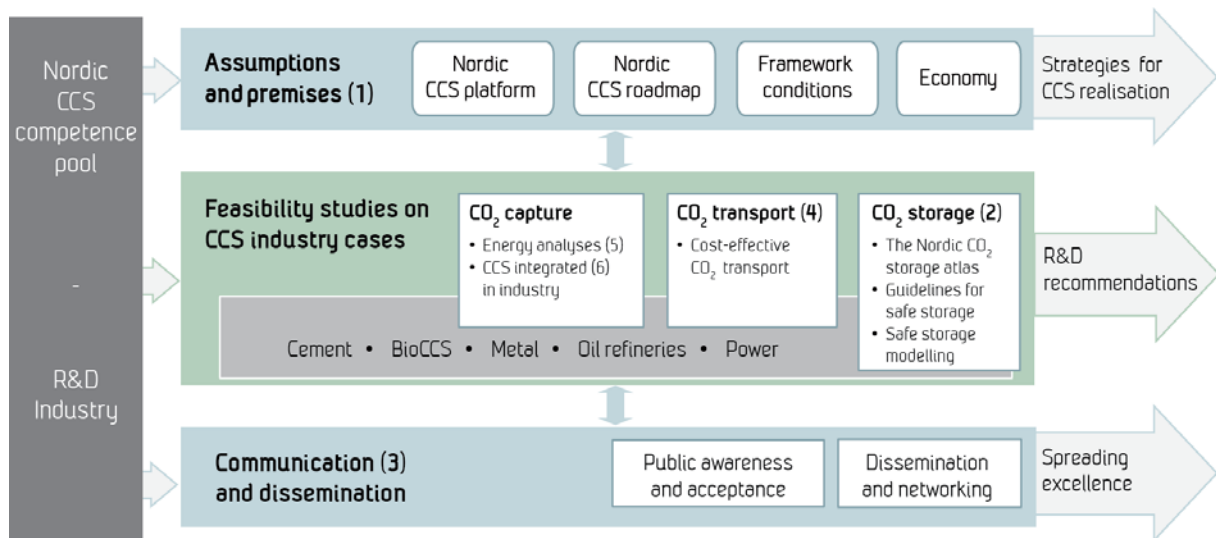
Summary Workshop Nordic CCS Roadmap

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NORDICCS concept:



Partners:



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Summary

A Workshop on Nordic CCS Roadmap Framework Conditions was held in collaboration with the CCSP project at VTT in Helsinki, Finland on October 22, 2013.

The Nordic Countries all have set ambitious goals to become carbon neutral by 2050. Several of the Nordic countries are showing commitment to reduce climate gases by laws like emission performance standards in Denmark and carbon tax in Norway. However, this is not sufficient to start CCS projects. The Emissions Trading System (ETS) is not proving to be an effective tool as the carbon price is too low. It does not help make CCS projects economically viable. The aim of the workshop was to propose the most effective framework conditions for CCS to put in place in order to implement CCS in the Nordic countries. The following document summarizes the most important framework conditions for implementing CCS in the Nordic countries as assessed by the workshop participants.

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About NORDICCS

Nordic CCS Competence Centre, NORDICCS, is a networking platform for increased CCS deployment in the Nordic countries. NORDICCS has 10 research partners and six industry partners, is led by SINTEF Energy Research, and is supported by Nordic Innovation through the Top-level Research Initiative.

The views presented in this report solely represent those of the authors and do not necessarily reflect those of other members in the NORDICCS consortia, NORDEN, The Top Level Research Initiative or Nordic Innovation.

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Workshop on Nordic CCS Roadmap- Framework Conditions

The Nordic Countries all have set ambitious goals to become carbon neutral by 2050. Several of the Nordic countries are showing commitment to reduce climate gases by laws like emission performance standards in Denmark and carbon tax in Norway. However, this is not sufficient to start CCS projects. The Emissions Trading System (ETS) is not proving to be an effective tool as the carbon price is too low. It does not help make CCS projects economically viable.

The aim of the workshop was to come up with suggestions for the most effective framework conditions for CCS to put in place in order to implement CCS projects in the Nordic countries.

The following was listed as the most important framework conditions for implementing CCS in the Nordic countries:

- Feed-in tariffs
 - Renewables in Sweden and Finland benefit from Feed-in-tariffs, the same must be established for CCS.
- CCS certificates: Delivered by producer of fossil fuels, oil and gas companies.
 - Cost is taken by sector with better margins.
- ETS must be made into a competitive tool by structural change
- Emission Performance Standards (EPS): If anything else fails.
- Pilot-demo projects: 3-5 plants in Europe by 2020
- Biomass to liquid technology most relevant for Bio CCS
- Implement EU Directive- onshore storage is currently forbidden in Sweden and Finland
 - The EU directive would enable onshore storage.
- Establish a carbon tax on imported products.
 - This will turn the ETS into a global system.
 - The tax can be used to fund CCS infrastructure
- Establish a first storage hub in Europe
 - Open for CO₂ import
 - Could be funded with Nordic resources

A long-term CO₂ support mechanism is required that outlasts political election

- There is a need to establish Measurement Reporting Guidelines for ship transport of CO₂ enabling ship transport across country borders

VTT proposed collaboration on a MRG project since similar projects on establishing a MRG for shipping is ongoing both at VTT as well as NORDICCS WP1. Both NORDICCS and CCSP steering committees will make a decision if joint collaboration is desirable on MRG.