

## Bio CCS Technologies & Sustainability

Seminar June 18th, 4 pm-6 pm, at TCCS 8, Trondheim, Norway  
 NTNU Campus (Norwegian University of Science and Technology)  
 Høgskoleringen 5, Trondheim

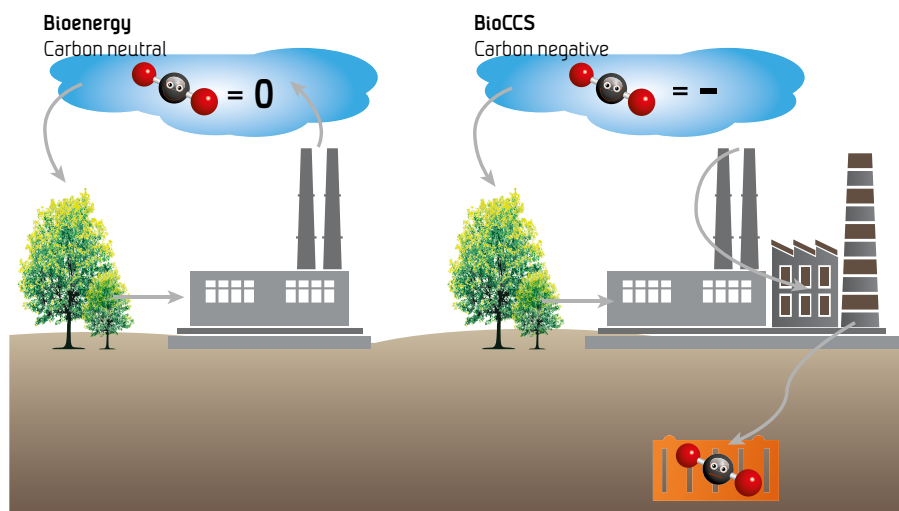
## Bio CCS Tehnologies & Sustainability- The importance of accelerating 'carbon negative' solutions

The Nordic region is unique in that a high proportion of its CO<sub>2</sub> emissions are biogenic, as shown in the top figure. Sweden and Finland have a particularly high proportion of biofuels with around 60% and 40% of their CO<sub>2</sub> emissions of biogenic origin, respectively.

Biogenic emissions are carbon neutral as the biomass consumes CO<sub>2</sub> as it grows. Biomass conversion technologies, when combined with CCS, can therefore remove CO<sub>2</sub> from the atmosphere to achieve carbon negative solutions, as shown in the bottom graphic.

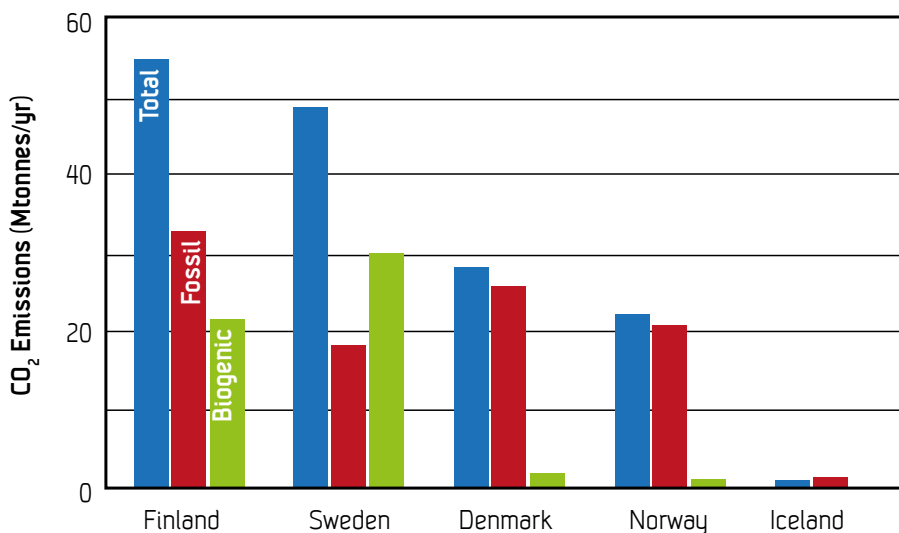
Bio-CCS is now taking place on a commercial scale in the US, where the Archer Daniels Midland company leads a consortium that captures and stores CO<sub>2</sub> from a bioethanol plant in Decatur, Illinois using Alstom's amine technology for capture. During the first year of operation, 317,000 tonnes of CO<sub>2</sub> were stored in the Mount Simon Sandstone formation. A comprehensive monitoring program tracks the stored CO<sub>2</sub>.

Bio-CCS can be a relatively effective and economic means of removing some of the CO<sub>2</sub> emissions that are already locked-in by existing industries with no other mitigation options available and there is potential for both bio-industry and bioenergy applications in the Nordic countries. By capturing and storing biogenic CO<sub>2</sub> offshore in Norway and Denmark, large-scale carbon negative projects are therefore feasible. Indeed, it may be a necessity in order to ensure 2050 goals are met.



### Nordic synergies - biogenic emissions

- Significant biomass energy sources in Sweden and Finland
- ↓
- Potential for Bio-CCS projects that can go carbon negative!



## **Bio CCS Technologies & Sustainability - Agenda**

- 16:00 Welcome & Introduction  
Marit Mazzetti, SINTEF
- 16:15 "The need for Bio CCS"  
Sabine Fuss, Mercator Research Institute, Germany
- 16:35 "Prospects for Bio CCS in Finland"  
Antti Arasto, VTT (TBC)
- 16:55 Coffee Break
- 17:05 "BECCS and land-use implications"  
Florian KRAXNER, International Institute for Applied Systems Analysis (IIASA)
- 17:25 "Incentivising Bio-CCS and negative emissions: the reform of the EU ETS"  
Jonas Helseth, Bellona
- 17:45 Discussion & Summary  
Marit Mazzetti, SINTEF
- 18:00 END and walk to dinner
- 18:30 Dinner at Scandic Lerkendal Hotel

## 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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