

# CCS communication in the Nordic region- results and highlights

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# Starting point:

- Opinions about CCS is of outmost importance for its success or failure
- Opinions are dependent on the communication of CCS
- Despite pioneering role of Norway and curiosity from neighboring countries – information has been lacking about CCS communication in the Nordic region.
- Aim: present insights and recommendations for analyses in relation to CCS issues relevant for the Nordic context

# Research focus

## National policymakers

To what extent and how are national policymakers communicating about CCS?

Nordic countries in focus



## Local authorities (municipalities)

What knowledge and attitudes exist among municipalities where CCS could become a reality?

Skagerrak region in focus



## Industry

What is the industry's knowledge, lack of knowledge, desired knowledge and risk perceptions about CCS?

Norway and Sweden in focus



## Public

To what extent should the public be involved in discussing CCS and what assumptions underpins this decision?

General theory



# The need for increased debate and policy clarifications

- Nationally
- Between countries



# Different ways of communication

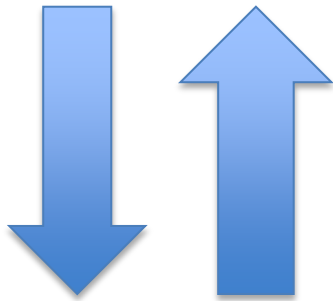


**Table 1** Comparison of the transmission and participatory approaches to communication.

	<b>Communication objective</b>	<b>Communication direction</b>	<b>View of the sender</b>	<b>View of the receiver</b>	<b>View of the message</b>	<b>Strengths</b>	<b>Weaknesses</b>
<b>Transmission approach</b>	<ul style="list-style-type: none"> <li>* Win acceptance for particular views</li> <li>* Increase public trust in science</li> </ul>	<ul style="list-style-type: none"> <li>* One-way information transfer</li> </ul>	<ul style="list-style-type: none"> <li>* The sender is an expert</li> <li>* The sender only needs to communicate science-based truths</li> </ul>	<ul style="list-style-type: none"> <li>* Passive</li> <li>* No time or interest to get involved</li> <li>* Inability to understand science</li> <li>* Should be convinced</li> </ul>	<ul style="list-style-type: none"> <li>* Message formed by sender</li> <li>* Message determined beforehand</li> <li>* Scientific uncertainties reserved for experts</li> <li>* Message evaluated by a strict peer community</li> </ul>	<ul style="list-style-type: none"> <li>* Sender retains control over the message</li> <li>* Creates a clear message</li> <li>* Little dependence on public engagement</li> <li>* Often less costly and time-consuming</li> </ul>	<ul style="list-style-type: none"> <li>* No account taken of differences in social framings, local and contextual factors</li> <li>* Limits learning</li> <li>* Risk that the message may not resonate with audiences' interpretative frameworks</li> <li>* Risk of public mistrust</li> </ul>
<b>Participatory approach</b>	<ul style="list-style-type: none"> <li>* Include a broad range of views</li> <li>* Foster mutual trust between experts and laypeople</li> <li>* Facilitate deliberative democracy ideals</li> </ul>	<ul style="list-style-type: none"> <li>* Multi-directional dialogue</li> </ul>	<ul style="list-style-type: none"> <li>* The senders are both experts and laypeople</li> <li>* The senders need to communicate social framings, local and contextual factors</li> </ul>	<ul style="list-style-type: none"> <li>* Active</li> <li>* Time and interest to engage</li> <li>* Ability to understand science</li> <li>* Should contribute multiple perspectives</li> </ul>	<ul style="list-style-type: none"> <li>* Message formed by both sender and receiver</li> <li>* Message shaped in dialogue processes</li> <li>* Scientific uncertainties discussed with the public</li> <li>* Message evaluated by an extended peer community</li> </ul>	<ul style="list-style-type: none"> <li>* Potential account of differences in social framings, local and contextual factors</li> <li>* Allows learning</li> </ul>	<ul style="list-style-type: none"> <li>* Sender gives up some control over the message</li> <li>* Risk of a multifaceted message that creates confusion and concern</li> <li>* Dependence on public engagement</li> <li>* Often more costly and time-consuming</li> <li>* Risk that only elites participate</li> </ul>

# Taking local factors into account in communication efforts

Policymakers/industry



Local community

- Community history and identity (e.g. tourism vs industry )
- Socioeconomic factors (e.g. jobs, income etc)
- Risks (e.g. CO2 leakage etc)

**In countries where CCS policies are absent; is there a need to raise awareness in local communities?**

## Important factors for Porsgrunn municipality's perceptions about CCS

### Risks:

- Local inhabitants in Porsgrunn are used to industrial activities and tackling environmental challenges
- Inhabitants used to ship transport of CO2 and products considered more dangerous than CO2 (ammonia, gas)
- Storage not an issue today and predicted to be unproblematic (offshore/reuse)
- In sum; no major risks

### Benefits:

- Legitimize the industry's' continuing existence
- Profiling the region as an environmental and technological leader
- Attract highly skilled workforce/prevent depopulation
- Creating new business opportunities (e.g reuse of CO2)
- In sum; CCS can provide several local benefits

# Offshore storage – a guarantee for acceptance?

- Storage not seen as a problem by Porsgrunn municipality
- Conflicts over onshore storage in 2008 a strongly contributing factor to negative attitudes towards CCS in general in Denmark
- Highlighted as a clear advantage for the Nordic region by national authorities
- In sum; offshore storage could lead to a low level of conflict in the Nordic region
- However, no guarantee for acceptance, not least with regard to potential conflicts with sea use stakeholders

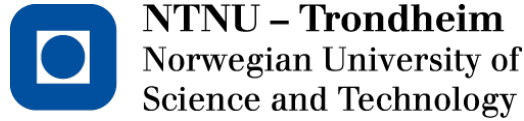
# Key messages and recommendations

- Increase the political debate on CCS at the national level, particularly in Denmark, Sweden and Finland. Seriously discuss what possible role CCS should play in long-term emission cuts and what it means for short-term strategies
- Consider to launch a Nordic dialogue forum to explore transnational CCS solutions
  - On a national level
  - On a local level
- Review existing toolkits and guidelines before engaging with the local community
- Provide the local community with high quality information and engage in a genuine dialogue that takes into account public concerns and ensures a transparent process

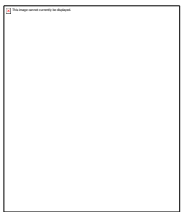


# Publications

- Buhr, K., Wibeck, V. (2014) Communication approaches for carbon capture and storage: Underlying assumptions of limited versus extensive public engagement. Elsevier, Energy Research & Social Science, V. 3, p.5–12
- Buhr, K., Kielland Haug, J. J., Stigson, P. (2014) Nordic policymakers' communication about carbon capture and storage (CCS). NORDICCS deliverable report D 2.5.1401
- Kielland Haug, J.J., Stigson, P. (2015a accepted) Local acceptance and communication as crucial elements for realizing CCS in the Nordic region
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- Stigson, P., Kielland Haug, J.J. (2013) A stakeholder map for CCS knowledge. NORDICCS deliverable report D 2.2. 1201
- Stigson, P., Kielland Haug, J.J. (2015b) Public perceptions of CCS: State of the art and the NORDICCS context. NORDICCS deliverable report D9
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