

Public and stakeholder understandings of offshore CO₂ storage and implications for monitoring: The case of the Tomakomai CCS Demonstration Project

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Method

- semi-structured interviews with 30 stakeholders related to project (e.g. operators, fishers, NGOs, local government);
- archive research in Tomakomai City Library and Hokkaido Library to understand environmental history via old newspapers and government reports;
- ethnographic observation within Tomakomai.



SOCIAL LICENCE TO OPERATE?

Operators linked to CCS project have long history of petrochemical operations in Tomakomai - CCS viewed as an extension of existing activities?



INDUSTRY AS CULTURAL LANDMARK?

Industrial infrastructure – e.g. Oji Paper Factory – part of local identity. Familiarity and cultural significance helps understanding of and support for new technologies?



LOCAL KNOWLEDGE

Fishers see local government officials as trustworthy sources of information on CO₂ storage progress. Importance of personal relationships and face-to-face contact in building stakeholder support. Also identity of local government as citizens and thus risk-bearers themselves increases trust?

What's happening in Tomakomai?

Tomakomai City is host to Japan's first large-scale CCS demonstration. CO₂ is captured from a gasification plant east of the city. The CO₂ is injected from onshore into geological formations under Tomakomai Bay. Injection started 2016 and the project is expected to run until 2020.

As a project near a large centre of population with significant economic and cultural attachment to the sea, in a country where perception of risks from energy and the sea is high, the Tomakomai CCS Demonstration Project yields many lessons about the social dimensions of offshore CO₂ storage.



Oji Paper Factory

Tomakomai City Hall

Tomakomai CCS Demonstration Project

Petrochemical Refinery

Tomakomai Port Authority

Tomakomai Fishing Port

HISTORY MATTERS

Fishers' cautious stance to offshore CO₂ storage in Tomakomai reflects previous experience with marine environmental pollution perceived as affecting fisheries: pulp discharges from Oji Paper Factory (Hokkaido Government Fisheries Research Institute (1953, below)); and dumping of sediment from port expansion in bay (Tomakomai Minpo, 1970, right).



PRIDE IN FISHERIES

Sakhalin surf clams (left) source of pride for Tomakomai fisheries (below) – crucial that new developments such as CCS do not jeopardise fisheries. Need for precautionary approach and rigorous marine monitoring.



IMPLICATIONS FOR MONITORING AND POLICY

Marine context limits what can be sampled and how often (due to need for boats, monitoring equipment, skills etc) and hence on what can be known with certainty. Rigorous monitoring and engagement to understand and explain uncertainty hence all the more important in sustaining societal support;

Importance of liaising with key stakeholders on monitoring requirements and results not only up to project approval, but also into operation phase. Continuing to feed back through appropriate channels, as happens in Tomakomai, crucial to building and retaining support;

Changes to marine environment can have social and cultural effects as well as economic consequences. Understanding local culture and history can explain responses to new processes like CO₂ storage, and should be included in impact assessments.



Tomakomai City
Hokkaido, Japan
Population 170,000

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