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Identifying and addressing societal aspects of offshore wind power in the North Sea

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Backdrop

- Offshore wind is an important contributor in ramping up renewable energy production towards 2050
- Norway and the North Sea is a central site for offshore wind development in Europe
- Tendency: actors believe societal challenges are fewer than onshore

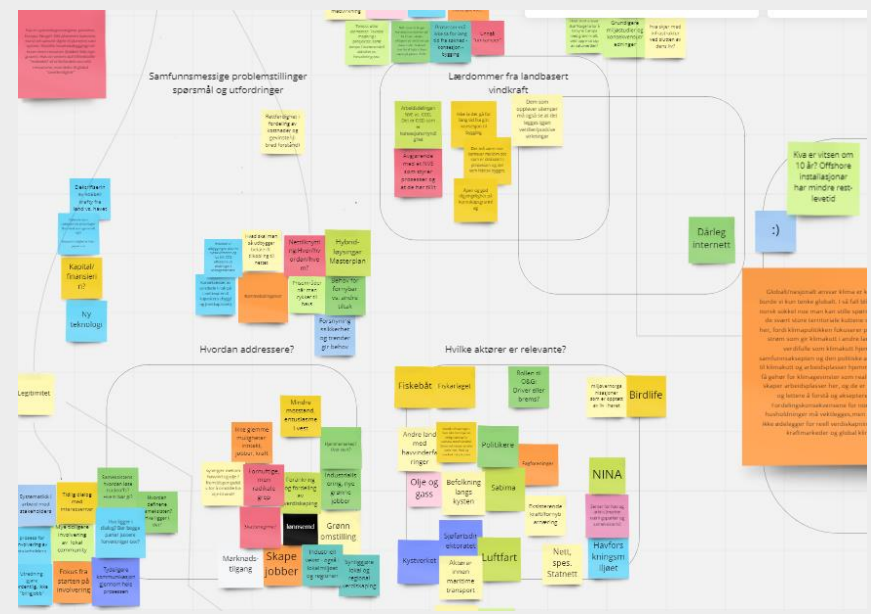
Our entry points

- Socio-technical perspective
 - Technologies co-evolve with changes in material, organizational, institutional, political, economic, and socio-cultural elements of society.
 - Through processes that are interpretative and conflictual in character.
 - Technology-roll out typically have legitimacy and justice implications.
- However: offshore wind is mainly discussed in techno-economic terms.
- Developing a just and legitimate offshore wind industry requires broader societal engagement



Goals

- Transdisciplinary process
- Co-create knowledge about the societal issues experienced as challenging to offshore wind development in the north sea
- Co-create strategies to engage with these issues, and recommendations for actors working with offshore wind.

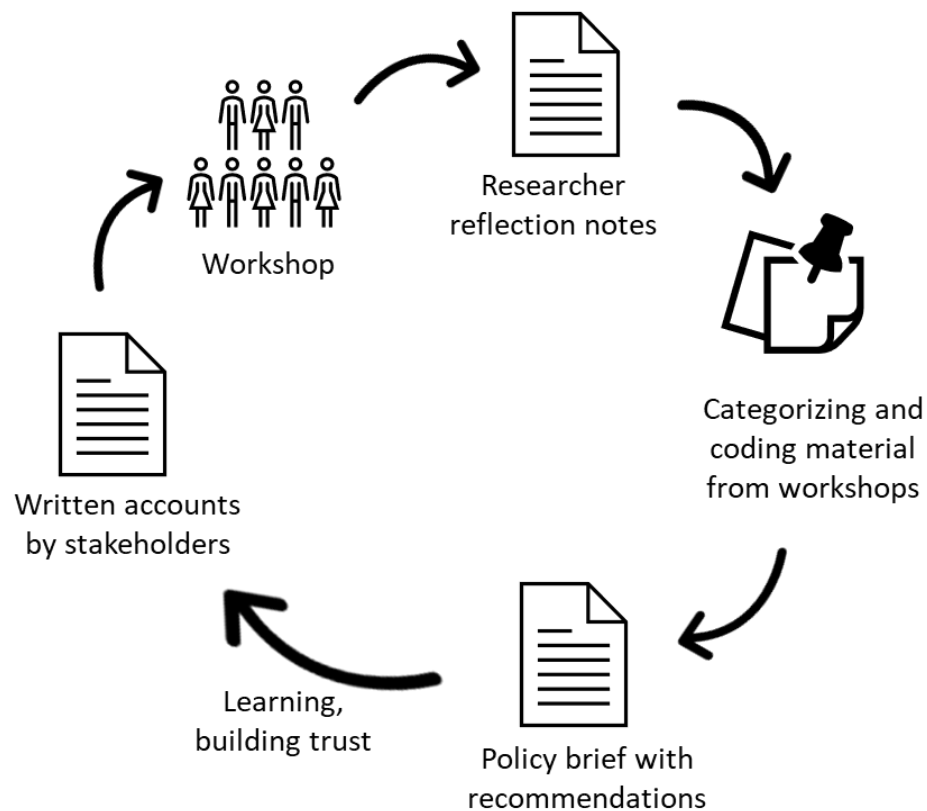


Actor	Description
Aker offshore wind	An offshore wind developer
Energi Norge	A non-profit industry organization representing 300 companies involved in producing, distributing, and trading electricity
ENOVA SF	A state-owned enterprise under the ministry of Climate and environment. Its goal is to reduce greenhouse gas emissions, strengthen security of energy supply, and contribute to technology development.
Equinor	A state-owned multinational energy company. Has historically been a petroleum company, but increasingly investing in renewable energy.
Eviny	An electricity production company in western Norway
Fred. Olsen & Co.	Traditionally a shipping company, now involved in renewable energy development through transport- and installation vessels for offshore wind turbines and a portfolio of wind farm projects.
Norges fiskarlag	The Norwegian Fishermen's Association is the professional fishermen's union and business organization.
Norsk Hydro	A large industrial actor, primarily producing aluminum and aluminum products. Large consumer of electricity.
Proneo	Business consultancy firm focusing on sustainability
Saga Fjordbase	An industrial park and logistics supplier focusing on offshore operations
Sogn og Fjordane Energi	A Regional power company in the western region of Norway
Statkraft	A power company, fully owned by the Norwegian state.
Trøndelag fylke	The county administration for the central region of Norway
Trønderenergi	A regional power company in the central region of Norway
The Norwegian Coastal Administration	A transport agency under the Ministry of Trade, Industry and Fisheries. They seek to ensure safe and efficient traffic in fairways and into ports, and a national preparedness against acute pollution.
The Norwegian Environment Agency	A government agency under the Ministry of Climate and Environment who implement and give advice on the development of climate and environmental policy
The Norwegian Water Resources and Energy Directorate	The Norwegian Water Resources and Energy Directorate (NVE) is a directorate under the Ministry of Petroleum and Energy.
The Norwegian Oil and Gas Association	A professional body and employer's association for oil, gas and supplier companies.
Vestland Fylkeskommune	The county administration for the western region of Norway

Social scientific perspectives

- Transition studies
- Political science
- Geography
- Ethics/philosophy
- Science and technology studies
- Gender studies
- Psychology
- Anthropology
- Economics

Process



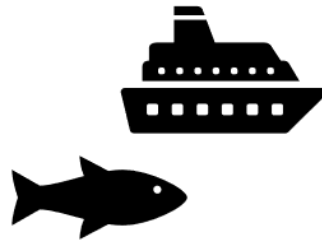
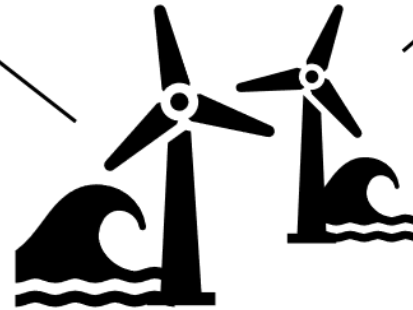
Four identified societal challenges



Improving the public debate



Public participation and the involvement of diverse interests and actors



Land use, place, and co-existence



Pace, political dynamics and geopolitics

Improving the public debate

- **Relevance:** The public debate might impact development, deployment, and acceptance of offshore wind power.
- **Challenge:** Debate interpreted as emotional, lacking knowledge and as contaminated by debates about EU affiliation and onshore wind power.
- **Ideal:** A concrete, knowledge-based and inclusive debate.
- **Recommendations:**
 - Build concrete and truthful narratives
 - Address values, norms, feelings, and facts
 - Take inspiration from principles of energy justice in communication

Participation and involvement of interests and citizens

- **Relevance:** Participation can affect acceptance and be integral to innovation. Might affect speed and legitimacy of transitions.
- **Challenge:** Finding the right time to do participatory processes. Ensuring that such processes affect outcomes. Identifying the relevant interests and stakeholders.
- **Ideal:** A process that considers sustainability broadly and impacts results. Is built on diverse knowledge and competence on participation. Starts early and is a continuous process. Is transparent and inclusive
- **Recommendations:**
 - Make a strategy for participation
 - Institutionalize work on participation.
 - Include non-industry and marginal voices
 - Recognize opinions as legitimate
 - Develop metrics to assess participation and make these part of project evaluations

Land-use, place, and co-existence

- **Relevance:** Land-use conflicts can affect the deployment of offshore wind. Using the land in good ways may enable the co-existence of interests and synergistic innovation.
- **Challenge:** Hard to identify future interests. Co-existence may hide dilemmas, e.g., environmental sustainability vs. industry interests. Onshore land use not part of current discussions. Lack of integrated knowledge.
- **Ideal:** Based on new form of marine spatial planning. Based on holistic assessment of marine space and affected interests. Based on inclusive and effective forms of participation.
- **Recommendations:**
 - Develop interdisciplinary and cross-sectoral marine spatial planning
 - Harmonize rules and institutional frameworks across sectors
 - Build and activate new networks to identify potential conflicts and synergies

Tempo, political dynamics, and geopolitics

- **Relevance:** Policy mixes affects transitions. Politics and power struggles affect policies. Geopolitics might affect offshore wind.
- **Challenge:** Fragmented policies anchored in sector specific interests. Vague policy mechanisms and unclear processes. Lack of knowledge. Nationalist narratives hampering international collaboration
- **Ideal:** Stable, concrete policy mix anchored in cross sectoral interests. Legitimation of international collaboration through political narratives. Politics built on holistic knowledge production.
- **Recommendations:**
 - Increase offshore wind R&D
 - Position Norway clearly to collaborate with the EU
 - Create strategy to become pioneers in translating theoretical insights on legitimacy/acceptance into practical politics.

Concluding remarks

- **Given high ambitions:** Urgent need to understand social, economic environmental and technical implications
- And to develop tools that allows us to integrate such knowledge in decision making to enable:
 - Better projects
 - Stronger anchoring in society
 - A more just and legitimate offshore wind development

Thanks 😊

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