ARCTIC FRONTIERS

Arctic Frontiers Second Roundtable Discussion

Securing Green Energy for Future Nordic Development

DATE: May 5th, 2025

ABOUT THE PROJECT

The Arctic region is at a critical juncture, facing both unprecedented challenges and opportunities. The impacts of global warming, which are four times faster in the Arctic than in the rest of the world, underline the urgency of transitioning from a fossil fuel-dependent economy to a sustainable, renewable energy-driven future.

This green transition is not just an environmental necessity but an opportunity to redefine economic structures and foster resilient communities across the Nordic Arctic. Simultaneously, green transition in the Arctic requires consultations and coexistence between industry and traditional livelihoods.

This project seeks to address these pressing needs by creating a structured platform for dialogue, knowledge-sharing, and actionable policy recommendations. Through a series of moderated roundtable discussions, we aim to bring together key stakeholders to address the multifaceted challenges of the green transition.

The project is generously funded by the Norwegian Ministry of Foreign Affairs, and will focus on three key themes:

➔ Economic and Investment Needs
How to attract and secure sustainable investments while managing risks, fostering innovation, and ensuring the equitable distribution of resources.

➔ Energy Security and Resource Management
Addressing the transition to renewable energy, the secure supply of critical minerals, and the development of place-based production systems.

➔ Balancing Growth and Conservation
Navigating the complex interplay of economic development, environmental stewardship, and the rights and traditions of Indigenous and local communities.

OBJECTIVES AND DELIVERABLES

The primary objective of this project is to define what the green transition looks like in the Arctic by producing a comprehensive policy roadmap for sustainable development. This roadmap will guide policy-makers and stakeholders in implementing strategies to achieve economic resilience, energy security, and environmental sustainability across the region.

Norwegian Ministry
of Foreign Affairs

These recommendations are based on the conversations and proposals from the first round table discussion. The summary is written by **Marja Helena Sivonen**, Researcher, Finnish Environment Institute.

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KEY ACTION POINTS:

1. Coordinate national and Nordic-level governance for Arctic development
Create a shared Nordic vision for Arctic development, ensure national governments take a leading role in guiding and financing regional projects.

2. Develop cross-border energy infrastructure and funding mechanisms
Improve Nordic and Baltic energy grid connections, harmonise regulatory processes, and establish accessible cross-border funding systems to support joint infrastructure and energy projects.

3. Support local energy use and production via decentralized systems
Encourage local consumption of locally produced energy, invest in decentralized and small-scale energy systems, and ensure projects have local acceptance and visible benefits.

4. Integrate sustainability into defence and infrastructure planning
Defence procurement should include sustainability criteria, and infrastructure investments must support both civilian resilience and military readiness, especially in Arctic regions.

5. Strengthen Indigenous rights and local participation
Ensure full implementation of legal mechanisms like UNDRIP, increase Sámi representation in decision-making, and promote community-owned energy projects to build trust and long-term success.

KEY THEMES (FROM THE DISCUSSIONS):

1. Geopolitics and security

- Geopolitical instability, including the Russian war in Ukraine and shifting US politics, has elevated energy security concerns and positioned Arctic geopolitics as a distinct and increasingly critical domain.
- NATO expansion has amplified the strategic importance of the region, highlighting the need for enhanced cross-border cooperation and the removal of bureaucratic barriers between Nordic countries.
- EU political priorities have shifted from climate goals to resilience and technological competition, with human rights—especially Sámi rights—often overlooked, and EU financial support needed for infra-structure development.
- Military interest is driving transportation investments, including Arctic sea routes, the Kiruna-Narvik and Swedish-Finnish railroads, and improved road infrastructure for both civilian and evacuation purposes.
- Indigenous rights and land-use conflicts remain unresolved, with the Sámi requiring open, informed dialogue—exemplified by the Aurora Line project, which is held to be a good example of improved of communication, compensation, and cumulative impacts.
- Sustainability should cross over to defence sector because lock-ins in the defence sector create lock-ins for the rest of the society. This implies to for instance the lock-in of one type of fuel to be used in all systems, like petrol, and the difficulty in changing due to the expenses and infrastructure.
- Decentralized energy systems are seen as more secure.

2. Cross-border cooperation in developing energy infrastructure and competence

- Decentralized energy systems are viewed as safer, but poor maintenance, weak grids (especially Norway-Finland), and lack of cross-border funding hinder green energy development and cooperation.
- Nordic cooperation must improve, with harmonized processes, better workforce retention, and more inclusive governance—especially regarding Sámi rights and community involvement.
- Energy storage and diversification are essential for supply security, and while mining for critical minerals is fast-tracked, it raises concerns over environmental harm and impacts on Sámi lands.
- Infrastructure is a prerequisite for innovation, and while defence priorities dominate, awareness is needed that climate change remains a critical issue alongside national security.
- A shared Nordic vision for the Arctic is needed to guide coordinated development and policy. National-level governance is essential across all sectors due to the North's interconnectedness—socially, economically, culturally, geographically, and in terms of defence. Unified frameworks can help address cross-border challenges and streamline infrastructure and energy projects.
- EU regulation and guidance are also necessary to support regional alignment and resilience. Strategic coordination at both national and supranational levels is key to ensuring sustainable and secure Arctic development.

3. Aligning energy production with regional needs and capacity

- Energy production and consumption must be synchronized, with new green investments requiring aligned markets, supply, demand, and stable energy prices.
- Energy needs vary widely by industry and region, with Finland gaining wind capacity but facing future supply challenges, and Norway's outdated hydro power infrastructure limiting flexibility.
- Renewable energy remains costly upfront, and while small-scale local production is more acceptable and space-efficient, it still partially depends on fossil inputs.
- Flexibility and local acceptance are essential, as smaller-scale systems enhance preparedness and public support is limited when benefits of exporting energy are unclear.

5. Economic and financial challenges

- Volatile energy prices, especially in Finland, hinder investment in new projects, though successful initiatives like the Aurora Line may stabilize prices and attract investors.
- Cross-border funding mechanisms are lacking, or they are not known to the regional actors.
- Linking projects to national defence and security is seen as a potential selling point, requiring a shift in thinking and strategic framing.
- The current market system does not support renewable energy well, with high risk aversion and a need for stronger state involvement and public-private partnerships.
- Local governments face excessive pressure, handling zoning and environmental assessments, while social acceptability and local funding are crucial for project success and transparency.
- Ecosystem/cluster approaches may be a solution as they could ease the risk for everyone. However, state-level coordination is needed for this.

6. Education, science and research and workforce retention

- Science and research are essential for regional development and broader societal benefit, especially in the Arctic context.
- Nordic, national, and global cooperation between higher education institutions—such as the Arctic Six—is crucial for knowledge sharing and innovation.
- Local education should connect to national security and resilience, helping communities understand their strategic role.
- Brain drain from North to South is a concern, particularly in social sciences, while technical graduates are more likely to stay in the region.
- International student fees reduce talent inflow, especially in the North, where the loss of applicants represents lost competence.

7. Hydrogen and future opportunities

- Hydrogen is seen as a strategic energy solution.
- Inconsistent hydrogen legislation across Nordic countries is a major barrier, despite widespread interest and potential.
- Opportunities include hydrogen valleys, biogenic CO_2 from pulp factories, forestry-based hydrogen, and large-scale ammonia production, though it's unclear which will materialize.
- Political approval for hydrogen projects is difficult to secure, slowing progress despite strategic interest.
- Bodø and Berlevåg are specifically mentioned as potential future hydrogen development areas.
- Hydrogen is valued for its production versatility, but wind power—often used in hydrogen production—faces land-use conflicts, especially with the Sámi and other locals.

8. Societal and demographic concerns and opportunities

- A growing North–South divide exists in political influence and infrastructure investment, disadvantaging Arctic regions.
- Demographic challenges in the Arctic include aging populations, housing shortages, and limited access to higher education.
- New developments offer a chance to rebalance regional disparities and strengthen Arctic communities.
- Sámi livelihoods, especially reindeer herding, and culture connected to it, are under threat from green development projects encroaching on their lands.
- Indigenous populations are recognized as more sustainable and self-sufficient, yet their rights and ways of life are often overlooked.
- Community-owned energy projects can enhance local preparedness and trust.

SUMMARY

First-round questions:

How are geopolitical changes and instability affecting energy innovation and progress towards the green transition?
Are new energy projects adaptable to security changes?
Which energy sources are most promising for overcoming energy insecurity in the Nordics?
What role do small-scale, localised energy production have in Nordic energy security?

Geopolitical instability has shifted the motivation for energy projects from climate goals to national security, accelerating developments for defence reasons rather than environmental ones. Energy projects are increasingly designed with national security in mind, emphasizing decentralization, resilience, and alignment with defence priorities. Wind power and its use for hydrogen production are the most promising, though each faces challenges such as volatility, political approval, technology challenges and land-use conflicts. Small-scale local production enhances preparedness, increases social acceptability, and reduces reliance on centralized systems, making it a key component of regional energy security.

Second-round questions:

What infrastructure is needed for the green transition in the north and could this be shared across borders?
Who is financing the infrastructure needs?
How will the green transition factor into total preparedness?
What is the relationship between energy-transport-health-defence sectors?
What are the societal vulnerabilities and concerns?

Water, energy, roads, internet, sewage, and grid development as part of a whole-of-society needs are crucial, and while cross-border sharing is essential, current systems are weak and funding mechanisms are lacking. Private companies invest when profitable, but states are expected to cover critical investments; however, too much pressure is currently placed on municipalities. The green transition supports preparedness through decentralized systems, local energy production, and infrastructure that enhances resilience and security. Energy-transport-health-defence sectors are interconnected, with energy and transport infrastructure supporting defence and societal resilience, while broader development like healthcare is vital for regional competitiveness. The North faces a political and investment divide with the South, demographic challenges, and threats to Sámi livelihoods from green development on their lands.