Economic Brief 2

Arctic Transport: Environmental, Social and Geopolitical Concerns

What role does transportation have in Arctic communities?

How is climate change impacting the Arctic transport landscape?

What impacts follows as connectivity progresses?

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 869327

ECONOMIC BRIEFS in the Series

JUSTNORTH Economic Brief 1:
ENERGY TRANSITION IN THE ARCTIC: GOVERNANCE AND JUSTICE IMPLICATIONS

JUSTNORTH Economic Brief 2:
ARCTIC TRANSPORT: ENVIRONMENTAL, SOCIAL AND GEOPOLITICAL CONCERNS

JUSTNORTH Economic Brief 3:
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RECREATION & TOURISM

JUSTNORTH Economic Brief 5:
SOCIAL SERVICES, SOCIAL WELFARE AND COMMUNITY DEVELOPMENT IN THE ARCTIC

JUSTNORTH
Economic Brief 2

Arctic Transport: Environmental, Social and Geopolitical Concerns

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About the Economic Briefs

JUSTNORTH economic briefs are topical outputs drawing upon research previously conducted in the JUSTNORTH project, an undertaking funded by the European Union under Horizon 2020 programme. In these briefs, we build on the findings of the research conducted in 17 case studies (Work Packages 2-4) and underpinned by the comprehensive overview of various forms of justice and of the idea of ecosystem services (Work Package 1). The objective is to assess the sustainability of the regulatory frameworks supporting the main economic activities and sectors developed in the Arctic. Sustainability, understood here as the responsible use and management of spaces, common goods and shared resources with the aim of guaranteeing a fair use and enjoyment of them by future generations, is intrinsically linked to the idea of justice, the core concept upon which JUSTNORTH relies.

With the aim to reach a wide audience and to disseminate the previous work developed by JUSTNORTH work packages 1-4, the economic briefs constitute short and accessible analyses on different aspects of regulatory, policy and governance frameworks in the Arctic. As such, they are knowledge resources for policymakers, scholars and stakeholders/rightsholders. They will also serve as background papers in the process of co-producing the EU Policy Analysis Report and Recommendations.

Beyond the personal contributions made by the authors in their economic briefs, they all share a common outline. Each brief opens with the main key messages on the topic under consideration. They continue by outlining relevant findings of the JUSTNORTH case studies, highlighting issues identified by researchers and research participants as problematic, challenging or having implications for the actors' perception of justice. Third, the economic briefs analyse the governance regulatory mechanisms and gaps and policy frameworks related to the earlier identified findings. Which frameworks correspond to or address these problematic issues? What public goods are to be promoted and harms mitigated? Are future generations considered? What is the spatial scale of these policies and regulations? Fourth, we consider the justice implications derived from the economic sectors and their governance regulatory frameworks. The procedural, distributive, recognition and restorative forms of justice are considered, alongside the rights, balance of different values and interests and opportunities for participation. We ask if the governance frameworks themselves can be sources of social ills and injustices. Fifth, the relevance of discussed policies and regulations is analysed from the perspective of the Sustainable Development Goals and of ecosystem services – regulating services, provisioning services, cultural services and supporting services – that is, the varied benefits obtained by humans from healthy environments.

Finally, we provide initial thoughts on recommendations or areas where recommendations could be proposed – these will become subjects for discussion with Arctic stakeholders and rightsholders leading towards proposing recommendations at the end of JUSTNORTH project.

The briefs build on the findings of the case studies, written outputs of which have not been made public at the time of publication of these briefs. The ideas included in the briefs originate from these written outputs as well as discussions between case study leaders and the drafters of the briefs. However, for reasons of scope, the briefs consider only some aspects of the economic sectors analysed here and do not cover the entirety of said sectors.

1. ENERGY TRANSITION IN THE ARCTIC: GOVERNANCE AND JUSTICE IMPLICATIONS

This brief focuses on the governance and justice implications of the energy sector in (Sub-)Arctic in the context of ongoing energy transition. It presents case study-derived insights into: (1) energy demand and energy services; (2) renewable energy and energy storage; and (3) oil and gas extraction. Energy, particularly oil and gas, has played a critical role in the economic development of the Arctic while contributing to the narrative of the region as an extractive frontier. The ambition of the relevant JUSTNORTH case studies and this brief is to contribute to ending this narrative. The brief takes a critical view of the current governance mechanisms and identifies vertical and horizontal fragmentation problems. Placing justice-based conditions as part of permitting and licensing (leasing), wide implementation of strategic energy planning, accounting for equity and justice in rate and tariff-making, and incorporating collective and individual capabilities into environmental and social assessments are identified as possible solutions for the shortcomings.

The brief also criticises the current supply-centric approach and proposes incorporating the concepts of energy justice and services into energy decision making. This approach is linked to the current energy crisis that poses a challenge for winding down the ongoing hydrocarbon projects in the Arctic and not launching new ones. The issue of a post-extraction development looms large for policymakers, but it also presents opportunities for sustainable redeveloping of post-industrial spaces. The brief also notes conflicts and opposition to energy development are not unique to the O&G sector and that it is not necessary the technology or energy type but the approach to project development that matters. Therefore, renewable energy development cannot be solely justified by the decarbonisation effort and SDG7 considerations must be carefully balanced with complementary sustainable development goals.

2. ARCTIC TRANSPORT: ENVIRONMENTAL, SOCIAL AND GEOPOLITICAL CONCERNS

As the second largest contributor to greenhouse gas emissions, the transport sector significantly contributes to environmental degradation. Given this context, this JUSTNORTH Economic Brief considers how Arctic countries have taken different paths towards energy transition in line with European climate change goals. In particular, we consider private transport electrification and the opening of new railway networks in the region. Special attention has been given to justice issues that have emerged during the research process, as well as to the impact of these initiatives on the Sustainable Development Goals and on ecosystem services. considerations must be carefully balanced with complementary sustainable development goals.

3. NON-ENERGY RESOURCE EXTRACTION (MINING AND FISHERIES): GOVERNANCE, JUSTICE, AND SUSTAINABILITY

The brief provides an overview of the governance of (Sub-)Arctic fisheries and mining – two key economic sectors in the Arctic. Justice, sustainability and ecosystem services are discussed building on the findings of the JUSTNORTH case studies. Fisheries and mining are governed by a patchwork of policies, regulations, resource ownership frameworks, and standards. Governance shapes the distribution of benefits and burdens, and affects sustainability potential and justice outcomes. Justice and sustainability in mining and fisheries needs to be analyzed at different spatial scales, as global sustainability benefits may be intertwined with unsustainable practices when considered from the local perspective. Contrast between the distribution of positive socio-economic impacts and the distribution of environmental impacts remains a central concern. In fact, extractive industries can exacerbate existing inequalities. The process, timing and stakeholder/rightsholder composition of consultations are the key issues for procedural justice. opposition to energy development are not unique to the O&G sector and that it is not necessary the technology or energy type but the approach to project development that matters. Therefore, renewable energy development cannot be solely justified by the decarbonisation effort and SDG7 considerations must be carefully balanced with complementary sustainable development goals.

4. ECONOMIC BRIEF: RECREATION & TOURISM

This report presents findings from across several case studies of the JUSTNORTH project as they relate to tourism in the Arctic.

The Arctic features a landscape and ecosystem that exert a strong pull for visitors. However, climate change is threatening the long-term viability of the region in its current bio-geochemical form and, therefore, the socio-economic foundations of Arctic societies as well. Barriers to sustainability in the economic sector of tourism arise from structural problems associated with the industry, including differential bargaining powers of employment contracts and the broader lack of capacity for stakeholders to engage in consultation processes at national and international contexts. In addition, the lack of overarching regulatory mechanisms or frameworks beyond consumer rights and safety measures means that a number of UN Sustainable Development Goals (SDGs) are adversely affected.

This report sketches distributive, regulatory and procedural issues of justice as well as different dimensions of ecosystem services as they relate to the SDGs. The report closes with a list of potential regulatory recommendations, including a certification scheme, approaches for employment, and integrated spatial planning.

5. SOCIAL SERVICES, SOCIAL WELFARE AND COMMUNITY DEVELOPMENT IN THE ARCTIC

This JUSTNORTH Economic Brief explores the relations between some economic sectors (transport, resources extraction, search and rescue activities) and the social development of Arctic countries and communities. Special attention has been given to how these different economic activities can potentially contribute to or hinder "community viability" in the region. The current governance and regulation of public transport, of welfare state provisions, of corporate social responsibility, and of search and rescue activities have all been analysed under the light of justice considerations and in relation to environmental sustainability. While progress in Arctic social welfare is clearly observable, major challenges remain.for employment, and integrated spatial planning.

JUSTNORTH Case Studies informing JUSTNORTH Economic BRIEFS

Transport 1

Opportunities For Sustainable Mobility and Addressing Transport Poverty in Iceland

Lead researchers:
Benjamin Sovacool, Sussex University
Paul Upham, Sussex University

DataCentres 2

Sustainable Digitisation & Resilient Communities: Low Carbon Data Centres in Greenland, Iceland & Norway

Lead researchers:
Benjamin Sovacool, Sussex University
Chukwuka Monyei, Sussex University

WindNO 3

Renewable and Ethical?: Motivation for Wind Power Resistance in Sápmi & the Norwegian Arctic

Lead researchers:
Ragnhild Freng Dale, Western Norway Research Institute
Halvor Dannevig, Western Norway Research Institute

Post Industrial 4

Liabilities into Assets — Reviving Post-Industrial Communities Through Repurposing Industrial Infrastructures in the Swedish Arctic

Lead researchers:
Roman Sidortsov, Sussex University,
Timothy Scarlett, Michigan Technological University

OilGas 5

Stranded Assets, Path Dependencies & Carbon Lock-in: Short/Medium/Long Term Implications of Oil & Gas Development in the Russian, Norwegian and U.S. Arctic

Lead researchers:
Roman Sidortsov, Sussex University
Anna Badyna, Sussex University

Energy 6

Corporate Cultures & Geopolitical Aspirations: Exploring Socio-Political Barriers to the Energy Transition in Russia & Norway'

Lead researchers:
Darren McCauley, Erasmus University Rotterdam
Ryan Holmes, Erasmus University Rotterdam

Fisheries 7

Changing coastal communities, fisheries governance and equity issues in Iceland

Lead researchers:
Níels Einarsson, Stefansson Arctic Institute
Catherine Chambers, Stefansson Arctic Institute

Tourism 8

Communities, Globalisation and Marine Tourism in Northern Iceland

Lead researchers:
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Edward Huijbens , Wageningen University,
Edward Ariza, Universidad Autonoma Barcelona
Silvia Gomez, Universidad Autonoma Barcelona

Mining 9

Socio-economic Development, Self-determination and Global Change Impacts in Greenland

Lead researchers:
Joan Nymand Larsen, Stefansson Arctic Institute
Jon Ingimundarson, Stefansson Arctic Institute

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Lead researchers:
Hele Kiimann, Uppsala University
Susan Millar, Uppsala University

SAR 11

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Lead researchers:
Corine Wood-Donnelly, Nord University
Hannes Hansen-Magnusson, Cardiff University

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Lead researchers:
Hannes Hansen-Magnusson, Cardiff University
Charlotte Gehrke, Cardiff University
Corine Wood-Donnelly, Nord University

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Soili Nystén-Haarala, University of Lapland
Pigga Keskitalo, University of Lapland
Juha Kähkönen, University of Lapland

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Jukka Similä, University of Lapland
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Lead researchers:
Mia Landauer, University of Lapland
Juha Joona, University of Lapland

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Lead researchers:
Tanja Joona, University of Lapland
Soili Nystén-Haarala, University of Lapland

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Empowering Equitable and Robust Indigenous Economy through Indigenous Entrepreneurship in the Swedish & Russian Arctic

Lead researchers:
Elena Bogdanova, Northern Arctic Federal University
Ildikó sztalos-Morrell, Swedish University of Agricultural Sciences

Forms of Justice

Distributive Justice: "to give everybody their due shares in benefits and costs" (Deplazes-Zemp 2019); equitable distribution of social and economic benefits and burdens within and across different generations and geographies.

Procedural Justice: "to give everybody their due voice and participation in decision-making processes" (Deplazes-Zemp 2019); adherence to due process and fair treatment of individuals under the law; justness of procedures that are used to determine how benefits and burdens of various kinds are allocated to people; not necessarily determining the substantive justice.

Recognition Justice: "respecting identities and cultural differences; the extent to which different agents, ideas and cultures are respected and valued in intrapersonal encounters and in public discourse and practice." (Martin et al. 2016); Inclusion of the vulnerable, marginalised, poor, or otherwise under-represented or misinterpreted populations and demographic groups.

Restorative Justice: acknowledging past harms and possibly finding pathways for compensation and reconciliation, as well as ensuring that past conflicts, injustices and harms are not repeated; it should not be confused by the purely "retributive" form of justice, which is primarily concerned with punishment of wrongful acts (e.g. polluter pays principle).

Ecosystem Servcies

Ecosystem services[1]

Cultural Services
Intangible benefits derived from interactions with nature that contribute to the cultural or spiritual development of people, including the aesthetic appreciation and inspiration for culture; spiritual experience and cultural identity; tourism and recreation, etc.

Regulating Services
Benefits provided by ecosystems through their regulation of environmental processes. Examples: carbon sequestration; erosion and flood control, climate regulation and pollination, etc.

Provisioning Services
Provision of natural resources by ecosystems that are subsequently used by human communities for their survival and development. Examples: food, water, medicine, raw materials, etc.

Supporting Services
Fundamental ecosystem processes and functions that support and enable the other types of services, such as photosynthesis, nutrient cycling, the creation of soils, and the water cycle.

[1]For more on ecosystem services, see: https://www.nwf.org/Educational-Resources/WildlifeGuide/Understanding-Conservation/Ecosystem-Services and http://aboutvalues.net/ecosystem_services/.

JUSTNORTH Economic Brief 2

Arctic Transport: Environmental, Social and Geopolitical Concerns

Lead author: Elena Conde
Contributing authors: Belén Requena, Valentin Clavé-Mercier, Tor Gustav Sigeman, Corine Wood-Donnelly

KEY MESSAGES

Transport is a crucial element in the Arctic socioeconomic landscape and development. The region is marked by duality given the convergence of both realities and experiences of remoteness on one hand, and the significance of historic and contemporary globalised connections on the other. Many economic sectors and other aspects of Arctic life depend on the transportation of goods and people to the region (tourism, resources extraction, etc.). Climate change has led to important transformations in the Arctic transport landscape, either as a result of it - such as melting permafrost making some roads impossible to use or melting ice enabling the opening of new maritime routes - or in order to face it - such as electrification plans even reaching regional aircraft. While the former may represent obstacles to some transportation options and may even force relocations, the latter represents progress towards a more sustainable Arctic connectivity.[2]

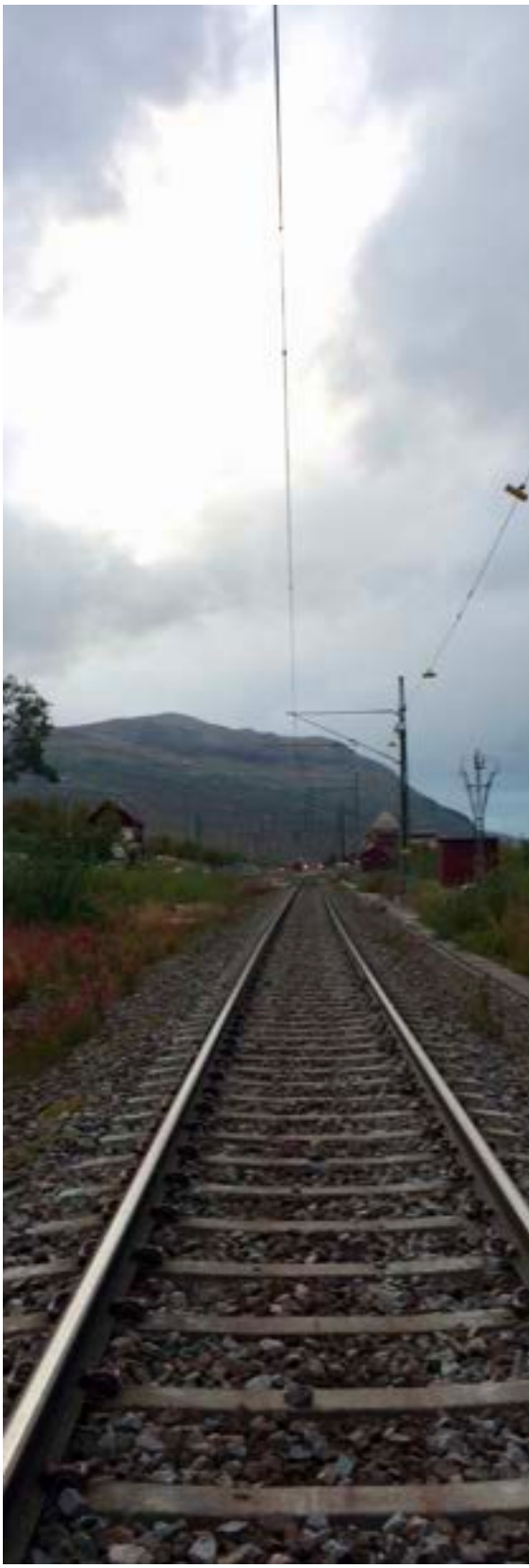
- Many Arctic communities are located in remote and isolated places, thus depending on agile, affordable and available means of transport for their survival (from the distribution of food and raw materials to social services access).
- The great majority of Arctic states are committed to climate change action, which has evident repercussions in terms of transport. Especially, both national and local policies are actively pursuing a progressive electrification of transport in order to achieve zero environmental impact objectives in the near future.
- The region is also witnessing an increase in worldwide connectivity in terms of shipping and tourism via existing and new rail and maritime routes. If such an increase opens up economic opportunities for the Arctic countries and the affected local communities, it also poses environmental and social risks such as the disturbance of traditional livelihoods and of natural landscapes.

[2] Kirchner, Stefan, International Law and Arctic Governance and Sustainable Transport Options for the Global North (October 22, 2022). Available at: https://ssrn.com/abstract=4255627.

Transport Sector through the lens of JUSTNORTH Cases

Over the last years, the Nordic region has been the stage for some of the most advanced and innovative transport-related developments in the Arctic. This is why this economic brief will be specially focused on this particular context. While transportation is crucial in Nordic countries, the road system is defined by a complex geography and the recurrence of harsh weather conditions. In a sociodemographic landscape marked by scattered rural communities, low population density and widespread urban centres, most Nordic populations consider private vehicles to be a necessity.[3] Land transport shares reveal a significant predominance of cars (87%) over other modes of transport (8% for buses, 7% for rail, 1% for trams and metro).[4] Overall, transport infrastructure is directly linked to the efficiency and profitability of different economic sectors such as the tourism and commercial industries. Therefore, all improvements in transport systems should lead to economic benefits across the region.

However, transportation is facing a significant challenge in the form of climate change action. As the second largest contributor to greenhouse gas emissions, transportation has a key responsibility in the global threat of environmental degradation. This is why, in 2019, the European Commission adopted the European Green Deal: a series of proposals that will contribute to reducing net greenhouse gas emissions by 55% by 2030 via a new outlook in the EU's climate, energy, transport and taxation policies.[5] in Nordic states that are members of the EU are thus legally binded to the European Green Deal and broader European transport policy. In the case of Iceland and Norway, their European Economic Area (EEA) membership means that they have adopted existing European regulation oriented to reduce the fleet average CO2 emissions. Across the Nordic countries, different states have started to implement measures and policies in order to achieve this goal. In this brief, we will pay special attention to their impact on Arctic populations in social terms - i.e. transport poverty, social exclusion, traditional livelihoods - and in environmental terms - i.e. sustainability, contribution to climate action.



[3] In fact, the lack of access to basic transport services that in turn ensure access to essential needs - or "transport poverty" - is one of the most urgent issues that Nordic governments are currently facing. See JUSTNORTH Economic Brief 5: Social Services, Social Welfare and Community Development in the Arctic.

[4] European Commission, 'Statistical pocketbook 2020: EU Transport in Figures' (European Commission, 2020) <https://ec.europa.eu/transport/facts-fundings/statistics/pocketbook-2020_en> accessed 5 December 2022.

[5] European Commission, 'A European Green Deal' (European Commission, 2019) <https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en> accessed 5 December 2022.

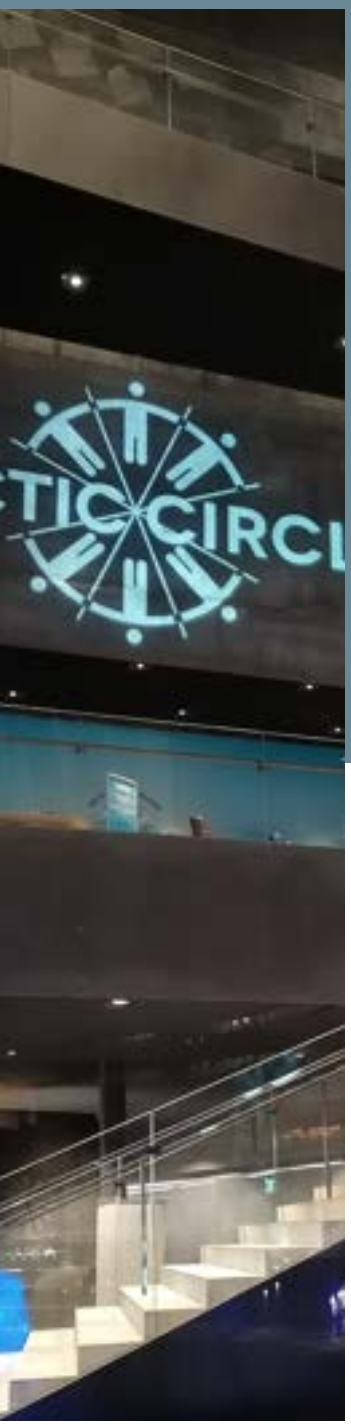
Among the ongoing and future zero-net emissions transport initiatives currently being developed in the Nordic region, we have analysed two major projects:

1. The electrification of mobility[6] is one of the key goals of Nordic countries' policies in the last few years. According to research, this policy orientation may represent one of the best contributors to the decarbonisation of transport.[7] Many of these countries have already developed and implemented a series of regulations and policies aimed at promoting the purchase and ownership of electric vehicles (EVs).[8] For instance, both Iceland and Norway have launched ambitious plans and policies. While the former aims to achieve a full decarbonisation of its transport sector by 2040, the latter is already pursuing an end to the sale of non-electric vehicles by 2025. However, such ambitious plans for electrification may result in several problems for Nordic societies. An increase in EVs uptake and circulation would require an increase in electricity production and a modernisation of existing systems which could lead to potential environmental damage. Although the significant Arctic possibilities for hydro and geothermal energy production is an advantage, the complex Arctic geography may represent an infrastructural challenge. Moreover, the focalisation of these policies on EVs runs the risk of reinforcing existing social marginalisation and creating new niches of transport poverty and social vulnerability.

2. Finland has started to implement different policy plans and to invest in infrastructure in the pursuit of its 2035 net-zero emissions goal. As part of this environmental orientation, the Tunturi Rata railway project is presented as a greener alternative to other modes of transport. The proposed railway network would link main tourist destinations in Southern and Central Lapland (Kemi-Kolari-Kittilä-Sodankylä-Kemijärvi-Rovaniemi-Kemi) as to improve people connectivity (e.g. passenger transport, tourism), as well as to increase commercial opportunities (e.g. mining, lumber industry). However, other similar projects were already approved by the Finnish government, such as the Arctic Railway ,[9] and were halted due to strong local opposition in spite of advancing the same alleged benefits to the "hosting" region.[10] Therefore, in order to avoid reproducing the issues of this former project that led to such an opposition, a significant attitudinal change on the part of either proponents or opponents will be required. Besides, the Tunturi Rata rail network plans to cut across the borders of Norway, Sweden, and Russia, thus also requiring strong international cooperation.

[6] See JUSTNORTH Economic Brief 1: Energy Transition in the Arctic.
[7] Nordic Energy Research, Tracking Nordic Clean Energy Progress 2020, (Nordic Energy Research, 2020).
[8] CS1-Transport.
[9] CS13-Railway.
[10] See JUSTNORTH Policy Brief 4: The planning of Arctic landscapes and seascapes and its impact on sustainability.

Transport Governance in the Arctic: Key Regulatory Mechanisms and Gaps



The fight against climate change is one of the main challenges and priorities of the European Union in the 21st century. The Treaty of Lisbon already established that Europe's sustainable development should be based on a balanced economic growth and a high level of environmental protection.[11] Thus, EU activities and policies have been marked by a certain advocacy to reduce potential environmental impacts derived from sectors such as transport due to its significance both in terms of economic growth and of GHG emissions. In relation to transportation issues, the legislative competence is actually shared between member states and the Union.[12]

For instance, the 2016 European Strategy for Low-Emission Mobility advanced several broad measures to ensure and support EU low carbon transition.[13] It was then reinforced by the 2019 European Green Deal (EGD), later turned into law by means of the 2021 European Climate Law.[14] In order to achieve the goals described in this document, the European Commission launched a new strategy[15] which addresses important issues such as the need to promote public transport use, to improve the capacities for long-distance and cross-border rail traffic (e.g. TEN-T network) and to foster a greener and smarter urban mobility.

In this regard, the Nordic region has developed many policies and initiatives to accomplish the ultimate aim of the EGD. However, the adoption of electric mobility transition policies varies from country to country. Norway is undeniably leading the way in the electric mobility transition landscape in the Arctic through a supportive regulatory and policy framework for transport electrification. For instance, policies oriented to investments in public EV services and infrastructure have been notable.[16] Additionally, national regulations establish substantial tax exemptions on registration and road traffic insurance taxes to foster EVs ownership.[17] Besides, regulatory incentives exist at the Norwegian regional and local levels such as the provision for green urban zones allowing for free parking for EVs as well as providing charging points.[18] Sweden offers similar incentives to those in place in Norway. At national level, EVs owners benefit from tax deductions and grants (e.g. bonus system for low climate impact vehicles[19]), and at local level, many cities across the country provide EVs charging grants, and even free charging in the case of Stockholm.[20]

[11] Article 2.3 Treaty of Lisbon Consolidated Version of the Treaty of Lisbon [2007] OJ C 306/1.
[12] Article 2C.2 (g) (h) Treaty of Lisbon.
[13] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 20 July 2016 establishing A European Strategy for Low-Emission Mobility COM (2016) 50.
[14] Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 L 243/1.
[15] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions of 14 December 2021 establishing the New EU Urban Mobility Framework (2021) COM (2021) 811 final.
[16] See JUSTNORTH Policy Brief 4: The Planning of Arctic Landscapes and Seascapes and Its Impact on Sustainability.
[17] The Norwegian Tax Administration, "Road traffic insurance tax" (2018).
[18] See for instance: Fredrikstad Kommune, "electric vehicles" (2022).
[19] Swedish Transport Agency, 'Bonus malus system for passenger cars, light trucks and light buses', (2022)
[20] Stockholm Parkering, "charging points".

Behind Norway, Iceland has one of the highest levels of EVs adoption in the Arctic. The recently developed 2020 Icelandic Climate Action Plan laid out a series of policies to reduce the transport sector's emissions throughout the country.[21] It reinforces already existing measures oriented to incentivise EVs ownership such as VAT exemptions, import duties waivers and low road tax rates for electric and low emission vehicles.[22] National government also made significant investments in the installation of charging stations across the country. Locally, the city of Reykjavík has generally followed these national incentives in line with its own 2016 Climate Policy. It has done so by offering free time-limited parking for EVs and installing street charging stations as well as offering grants for communal charging infrastructures in apartment buildings. However, recent inflationary trends and the increasing price of energy have led to a series of changes in the Icelandic policy regarding EVs. At national level, the Icelandic Parliament recently decided to reduce the current maximum of abolished VAT on EVs[23] and the 2023 Budget Bill considers implementing a special proportional tax on new EVs thus raising the costs of ownership. Similarly, Reykjavík's Environment and Planning Council recently decided to lift its EVs free parking policy[24] arguing that electric transport uptake has been satisfactory and incentives are no longer needed. Overall, and in spite of the recent changes observed in the Icelandic context, it needs to be noted that investments and incentives towards the electrification of private transport in the Nordic region have mostly been concentrated on urban areas with less opportunities directed to rural communities.

In Finland, the transport emissions reduction agenda regarding EVs has been more timid than what has been observed in the case of their Nordic neighbours. Nonetheless, recent years have seen the development of tax incentives and subsidies for EVs ownership, as well as some national investment in charging infrastructure. In the Finnish ecological transition context, significant emphasis has been given to developing the railway network as a more sustainable mode of transport over private vehicles. In line with the EGD and 2020 European Transport Policy's goals, Finland has planned for the improvement and extension of its railway network, especially via several projects aimed at opening new rail tracks in order to improve both passenger and commercial connectivity.

However, these projects can themselves lead to instances of environmental degradation (e.g. affect "pristine" aspect of Arctic landscapes) and of disturbances in economic activities and traditional livelihoods (e.g. disruption of "pristine" image can affect tourist attractiveness; rail tracks cutting though reindeer herding areas). Several regulations already exist in order to try and reconcile these different interests and the underlying conflicting values such as the 1991 Wilderness Act and the 2011 Railway Act. Both laws establish a framework for consultation and negotiations with local communities and parties affected by railway developments. More specifically, the 1990 Reindeer Husbandry Act legally provides for consultation processes with reindeer herders (often Sámi) whenever projects may affect their economic - and culturally loaded - activities. However, past experiences with local opposition to previous projects such as the Arctic Railway have evidenced shortcomings in the active and effective inclusion and participation of affected parties, especially indigenous peoples. As such, these mechanisms likely need to be reinforced and their appropriate implementation needs to be ensured.

[21] Icelandic Government. Climate action plan. Actions by the Icelandic government to promote a reduction in greenhouse gas emissions until 2030 (2020). <https://www.government.is/library/01-Ministries/Ministry-for-The-Environment/201004%20Umhverfisraduneytid%20Adgerdaaaetlun%20EN%20V2.pdf> .[21] Johanna Liljenfeldt, "Legitimacy and Efficiency in Planning Processes—(How) Does Wind Power Change the Situation?," European Planning Studies 23, no. 4 (April 2015): 811–827, doi:10.1080/09654313.2014.979766.

[22] The Value Added Tax Act with subsequent amendments 1990; Income Tax Act 2003.

[23] Icelandic Parliament Bill No. 1012, 19 June 2022.

[24] The Environment and Planning Council 245 meeting. <https://fundur.reykjavik.is/sites/default/files/agenda-items/245.%20fundarger%C3%B0%20umhverfis-%20og%20skipulagsr%C3%A1%C3%B0s%2019.%20okt%C3%B3ber%202022.pdf>.

Justice Implications for Transport in the Arctic

Transport projects and challenges in the Arctic region have led to the emergence of several justice issues ranging from questions of distribution, procedure, recognition and environment protection[25]. Although the Arctic push towards electric mobility has an undeniable apparent environmental value, it nonetheless contains possible social risks and may aggravate already existing vulnerabilities.

In terms of distributive justice, transport decarbonisation policies and agendas may negatively impact the poor segments of society, especially in the Arctic region where the reliance on transport is so important for many daily activities.

- For instance, the bans on old and/or petrol cars coupled with the unaffordability of EVs for many, or the fact that private transport receives more attention than public transport in decarbonisation agendas, are somewhat detrimental to low-income social groups.

- Additionally, a concentration of transport infrastructure investments and tax incentives is observable in urban zones as major Arctic cities are often the main targets of these policies. This results not only in a geographically uneven access to electric mobility detrimental to rural areas, but also in a certain elitism reproduced and entrenched in policy.

[25] Benjamin K. Sovacool, "Energy Injustice and Nordic Electric Mobility: Inequality, Elitism, and Externalities in the Electrification of Vehicle-to-Grid (V2G) Transport" (2019).

This lack of consideration of rural needs in policy-making can be seen both as a procedural justice and a recognition issue. Furthermore, this situation is compounded by the fact that remote rural communities often rely on diesel and fuel, both for mobility and for home energy (through the use of generators), which often clashes with national policies and legislations that are aggressively pushing for energy transition in line with climate change goals. Thus, there is a certain social risk in climate action plans and policies to prioritise an environmental focus at the expense of socio-economic indicators, or prioritising environmental sustainability over social sustainability. Although there is usually a strong social commitment to environmental goals across Arctic countries, and recognising the fact that the majority of their national populations is urban, a balance should be found not to leave the needs of Arctic communities behind, and especially to avoid penalising already vulnerable low-income and rural social groups.

Moreover, a major shift in policy orientation towards electric mobility transition would result in profound transformations of the economic landscape of the concerned Arctic countries. The main concern would be the loss of jobs in the conventional cars industry potentially leading to greater levels of unemployment or the costs derived from investments and training required by small shops to handle and work on EVs. As such, this could lead to a distributive justice issue if the burdens and benefits of the decarbonisation agenda are not equally affecting the existing economic sectors. Finally, while green transition goals in transport policy are thought to be unmistakably beneficial for the environment, their implementation can be fraught with hazards that may negatively affect environmental justice. One of the main concerns is that the electric energy used to electrify transport - be it private or public - is not always coming from low-carbon or renewable sources. Therefore, while contamination would actually be reduced in urban areas (where most EVs are located) it could be increased in rural areas where power plants are located and would need to increase their production. Additionally, the production of EVs requires equipment and materials that raise concerns for their toxicity and their recyclability, as well as for their reliance on mining activities. Therefore, decarbonisation strategies are often confronted with important downsides that can limit them to be mere half-measures towards genuine net-zero emissions targets.

Regarding the development of the Tunturi Rata railway project, one of the main observable justice issues has to do with the relations with Indigenous peoples present in the area. Whereas the fact that the project does not plan to be located within Saami Homeland means that consultation with the Saami Parliament is not mandatory, many Indigenous peoples and/or reindeer herders live in and maintain economic and cultural relations with the project's "hosting" region. Therefore, if the Tunturi Rata project were to disregard these groups' concerns over environmental degradation and disruption of traditional livelihoods, it would be bound to repeating the failures of the Arctic Railway project.[26]

To ensure that Indigenous and reindeer herders' needs and values are properly acknowledged and addressed, their participation in decision-making processes should be ensured in a way that would thus enact both recognition and procedural justice. Negotiation and consultation processes are indeed contemplated by the Finnish law but their implementation is not always ensured in an open, transparent and satisfactory manner. To rise in a just and sustainable way, the Tunturi Rata project must be wary of not reproducing these justice issues.

[26] See JUSTNORTH Policy Brief 4: The planning of Arctic landscapes and seascapes and its impact on sustainability.

Impact on the Sustainable Development Goals and on Ecosystem Services

Transport electrification measures are considered to be directly connected to SDG11 (Sustainable Cities and Communities) and SDG13 (Climate Action) in that they are conceived as combating the particularly acute consequences of climate change experienced in the Arctic. Indeed, electrification would allow to reduce fossil fuel extraction and its associated environmental risks (e.g. spills). One of the core objectives of decarbonisation agendas is also to improve the environment quality - i.e. clean air - thus contributing to SDG3 (Good Health and Well-Being).

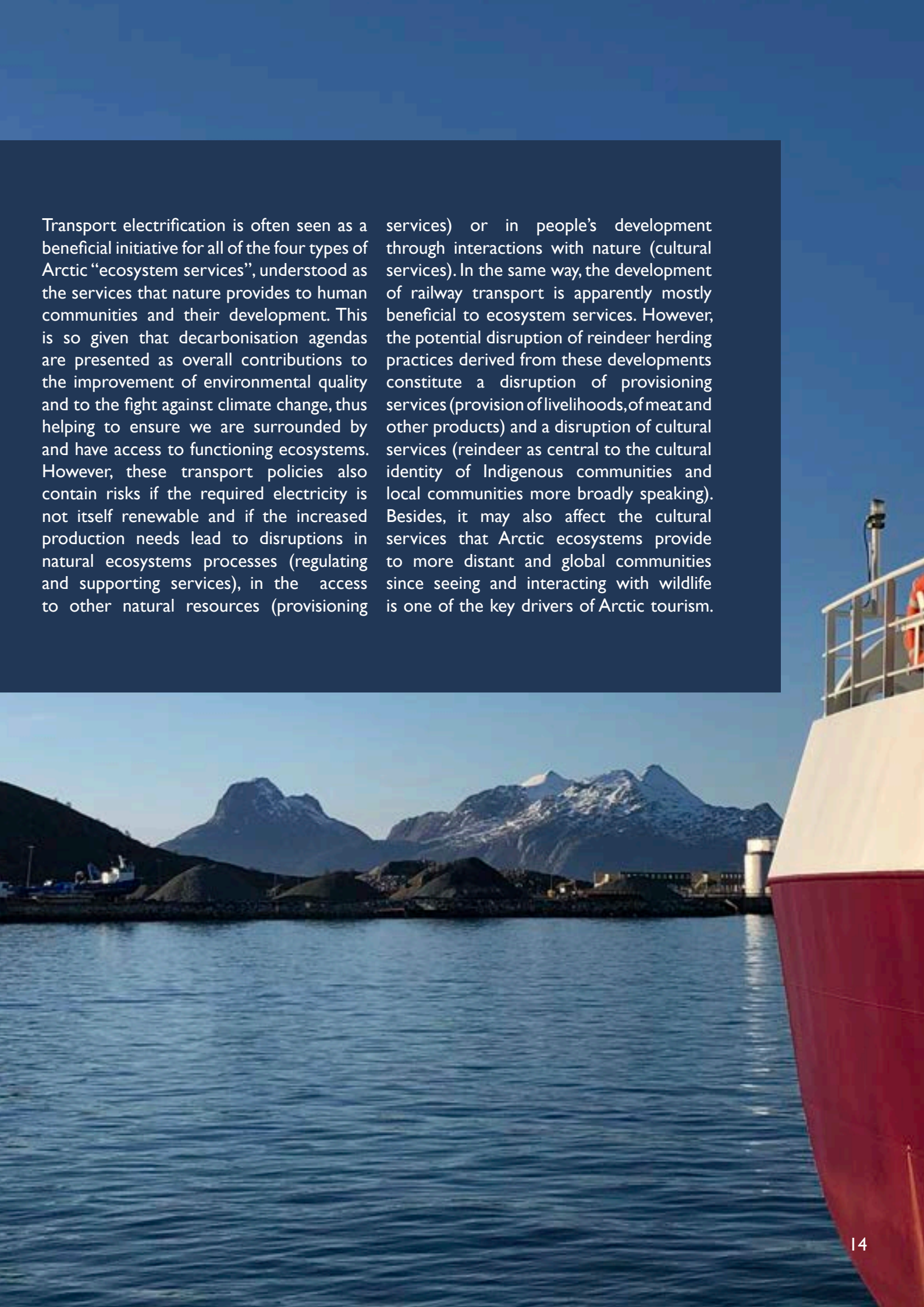
However, said transitions to electric transport also contain their own sustainability issues related to the production and disposal of electronic components or to the type of energy that is used to produce electricity (renewable or not). In terms of economic growth and development, an increased adoption of electric transportation will contribute to SDG8 (Decent Work and Economic Growth) through a diversification of the economy towards the creation of a new economic sector and associated businesses.

It also poses a risk to the same goal as the ignition cars-related business sector will need to reconvert. Compared to public transport, policies pursuing the electrification of private vehicles can lead to issues connected to SDG1 (No Poverty) and SDG10 (Reduced Inequalities) if EVs are inaccessible and unaffordable for low-income and vulnerable groups, thus leading to transport poverty and reinforcing other forms of inequality.[27]

In terms of its environmental contribution, the development of railway transport for both shipping and passengers generally aims to tackle the same sustainable goals. It is also more directly connected to SDG8 and SDG9 (Industry, Innovation, and Infrastructure) as it would improve national and global economic connectivity as well as create employment opportunities. However, these developments of new transportation routes can also lead to severe environmental impacts and to a profound disturbance of traditional livelihoods - such as Indigenous economies - and thus to social impacts such as unemployment. They can also heighten regional differences within the affected Arctic countries between "hosting" communities and the ones left out of the development. As such, SDG8, SDG10 or SDG13 could actually be put at risk instead of being improved.

[27] See Economic Brief 5: Social Services, Social Welfare and Community Development in the Arctic.

Transport electrification is often seen as a beneficial initiative for all of the four types of Arctic "ecosystem services", understood as the services that nature provides to human communities and their development. This is so given that decarbonisation agendas are presented as overall contributions to the improvement of environmental quality and to the fight against climate change, thus helping to ensure we are surrounded by and have access to functioning ecosystems. However, these transport policies also contain risks if the required electricity is not itself renewable and if the increased production needs lead to disruptions in natural ecosystems processes (regulating and supporting services), in the access to other natural resources (provisioning services) or in people's development through interactions with nature (cultural services). In the same way, the development of railway transport is apparently mostly beneficial to ecosystem services. However, the potential disruption of reindeer herding practices derived from these developments constitute a disruption of provisioning services (provision of livelihoods, of meat and other products) and a disruption of cultural services (reindeer as central to the cultural identity of Indigenous communities and local communities more broadly speaking). Besides, it may also affect the cultural services that Arctic ecosystems provide to more distant and global communities since seeing and interacting with wildlife is one of the key drivers of Arctic tourism.



Recommendations for a Just and Sustainable Transport Sector in the Arctic

1. Within the broad policies of transport electrification, public transport should not be overlooked given its essential role in a fair distribution of transport opportunities across social groups. As such, public transport infrastructure and planning should be given more consideration and be better developed.

2. Investment should be oriented to improving the network of charging stations in public and residential areas in order to make electric transport more accessible and more convenient. This should be accompanied by an improvement in the transmission and distribution grids if large-scale electrification is pursued.

3. The development of charging infrastructure networks should also ensure that charging points are universal across vehicle brands. If not, this would result in exclusion and distributive injustice. Standardisation of charging stations across the EU may be a positive initiative and would facilitate customers' uptake of EVs.

4. Incentive programs supporting the purchase of EVs should be predictive and planned for the medium-term in order for consumers and markets to have more information and thus to invest with a higher degree of trust. These programs should be coupled with education campaigns about EVs and their relations to energy efficiency, especially given the observed lack of information and awareness in Arctic publics.[28]

5. Transport policies should give special attention to the connectivity within and between rural areas as to ensure distributive justice in Arctic transport opportunities. For instance, access to charging infrastructure should be equally distributed and Arctic regions - from where most of the resources needed for transport electrification come from - should not be left behind.

[28] CS1-Transport.

6. Improving the cooperation between Nordic countries is a key step towards improving the connections between Arctic businesses and tourist destinations. Investments to develop rail connections through Nordic countries are required, with particular emphasis on implementing a unified gauge system (distance between the rails) across Europe. At the moment, Finland's gauge differs from the rest of the EU.[2]

7. Existing legal provisions concerning the consultation of local and Indigenous communities in the processes of railway development should be adequately and systematically enforced. The procedures required for the active and effective participation of affected parties need to be strengthened as to ensure procedural and recognition justices.

8. Overall, the development of transportation policies must take into consideration local communities' perspectives in order to better respond to their needs as well as to reduce the negative impacts derived from said policies. Their inclusion in decision-making processes regarding transport policies, from local to EU levels, would strengthen procedural and recognition justice.

[29] CS13-Railway

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