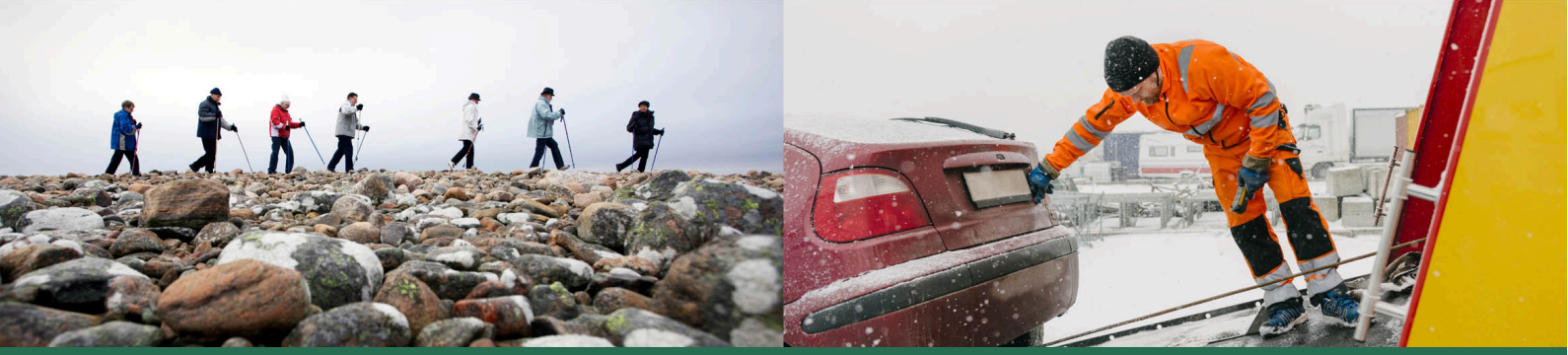


NORDIC TOOLBOX FOR A **JUST GREEN TRANSITION**

Navigate challenges, listen to those affected, and get inspired through this research-based toolbox for policymakers.



A just green transition – why do we need a toolbox?

The Nordic Council of Ministers and the Nordic countries are committed to a green transition towards net-zero emissions which will impact all sectors and communities. This transition should be just, equitable and inclusive. All Nordic people should benefit from the opportunities of the green transition, with no groups or regions left behind.

To help policymakers ensure this, we have developed this *Nordic Toolbox for a Just Green Transition*. Based on discussions with civil society organisations and desk research, the toolbox describes key challenges, highlights possible solutions, and provides examples, tools and resources to help develop more inclusive and fair green transition policies. Additionally, our series of policy memos feature Nordic voices sharing their experiences, worries, and expectations. The toolbox offers practical information and inspiration to Nordic policymakers working with the green transition in various policy areas and contexts.

Navigate Nordic challenges

Learn about key hurdles faced in the Nordic Region when crafting a just transition process - and how to address them.

Listen to Nordic voices

What are the views of Nordic citizens? Explore their expectations, worries, and ideas for a more just green transition.

Get inspired

Browse through tools and real-life examples in green transition policymaking, and use the comprehensive checklist to guide you.

The Nordic Toolbox for a Just Green Transition is part of the NJUST (Not just a green transition) project, initiated and funded by the Nordic Council of Ministers and coordinated by Nordregio (2021-2024). Find out more about the project [here](#).

The NJUST project has analysed green transition impacts and proposed strategies to mitigate potential negative effects of the green transition. Four target groups have been at the focus of the research—people who are unemployed or at risk of unemployment, older adults, children and youth, and people with disabilities. The Nordic Council of Ministers has identified these groups as potentially more vulnerable to the green transition.

The NJUST project has collaborated with various stakeholders, such as the [Nordic Welfare Centre](#), the Nordic Civil Society Network, and the [Council of Nordic Trade Unions](#). A steering group with representatives from the Nordic Council of Ministers and a reference group consisting of the members of the Nordic Expert Group for Sustainable Development have supported the project.

The Nordic Toolbox for a Just Green Transition was developed by Nora Sánchez Gassen, Lisa Rohrer, Anna Berlina, Louise Ögland, Carlos Tapia, Rebecca Cavicchia and Anna Lundgren. Kotryna Juškaitė and Louise Ögland were responsible for the layout.

Please cite the toolbox as follows: *Sánchez Gassen, N., Rohrer, L., Berlina, A., Ögland, L., Tapia, C., Cavicchia, R. & Lundgren, A. (2024). Nordic Toolbox for a Just Green Transition. Stockholm: Nordregio.*

What is the green transition and why should it be just?

→ What defines a just green transition?

→ Why should the green transition be a just transition?



What defines a just green transition?

Currently, there is no universally accepted definition of what makes a just green transition. Instead, various stakeholders promote different views on what a just green transition should look like and by whom it should be achieved.^[1] The concept has also undergone a considerable historical evolution (see below).

In the NJUST project, we understand the just green transition as **a process of far-reaching sociotechnical change which leads to a more sustainable and climate-neutral future, preserves biodiversity, and ensures social justice.**^[2]

In the academic literature, the concept of justice is generally understood as encompassing different dimensions^[3]:

- **Recognitional justice: Whose voices and perspectives are recognised?**
This dimension asks if and how the rights, needs, and perspectives of different groups are acknowledged and valued during the green transition.
- **Procedural justice: Who is involved?**
This dimension asks how various population groups participate and have influence in decision-making processes during the green transition. It also focuses on the quality and inclusiveness of participatory processes.
- **Distributional justice: Who pays and who benefits?**
This dimension is concerned with how different groups benefit or incur harms by green transition policies.

1. Just Transition Research Collaborative (2018): Mapping just transition(s) to a low-carbon world. Geneva: United Nations Research Institute for Social Development. Available at: <https://www.unclearn.org/wp-content/uploads/library/report-jtrc-2018.pdf>

2. Cedergren, E, Tapia, C, Sánchez Gassen, N and Lundgren, A (2022): Just green transition. Key concepts and implications in the Nordic Region. Nordregio discussion paper 2022:2. Stockholm: Nordregio. Available at: <https://pub.nordregio.org/wp-2022-2-just-green-transition-key-concepts-and-implications-in-the-nordics/>

3. Bennet, N J, Blythe, J, Cisneros-Montemayor, A M, Singh, G G and Sumaila, U R (2019): Just transformations to sustainability. Sustainability, vol. 11, 3881

”

Justice is not only an outcome of the green transition, but a concept that can inform policymaking processes themselves.

The different justice dimensions have guided the development of the Nordic toolbox for a just green transition. For example, in the priority area "[Engage people](#)" we address recognitional and procedural justice, while the priority area "[Assess and mitigate social and regional impacts](#)" focuses on distributional justice.

A brief history of the "just transition" concept

**1970s-
1980s**

The concept of a "just transition" has its roots in the US labour movement of the 1970s and 1980s. Trade unions invoked it as a strategy to safeguard workers in the Rust and Coal Belts who were affected by new environmental regulations. The aim was to ensure that these workers were not disproportionately impacted by such policies.

2000s

In the early 2000s, the International Confederation of Free Trade Unions (ICFTU) adopted the idea of a just transition, calling for social protection and job creation as part of climate policy.

2015

Gaining global recognition in 2015, the concept was included in the preamble of the [Paris Agreement](#) and the [International Labour Organization's \(ILO\) Guidelines for a Just Transition](#). The [2030 Agenda for Sustainable Development](#) was adopted with a commitment to "leave no one behind", emphasising that climate policies should not worsen inequalities or create new ones.

At the COP24 in Katowice, more than 50 countries signed the [Solidarity and Just Transition Silesia](#)

2018

Declaration, recognising the need to protect the workforce and to create decent jobs during the green transition.

2019

The just transition concept is a cornerstone of the European Green Deal, aiming for economic growth while simultaneously reaching climate neutrality in Europe by 2050. The Just Transition Mechanism financially supports European regions facing negative socioeconomic impacts from the green transition.

In the same year, the Nordic Prime Ministers adopted "Our Vision 2030" - to make the Nordic Region the most sustainable and integrated region in the world by 2030. This includes the goal to make the green transition an inclusive process and to increase equality in the Nordic Region.

2024

Following the European elections in June 2024, the EU defined a set of priority areas for the years 2024-2029. The priorities were developed in dialogue between EU leaders, national ministers, EU institutions and EU parliamentarians. The set of priorities includes the goal of making the green and digital transitions a success.

Recommended further reading

Bennet, N.J., Blythe, J., Cisneros-Montemayor, A.M., Singh, G.G. & Sumaila, U.R. (2019). Just transformations to sustainability. *Sustainability*, 11, 3881.

Cahill, B. & Allen, M.M. (2020). *Just transition concepts and relevance for climate action. A preliminary framework*. Washington, DC: Center for Strategic and International Studies (CSIS) and Climate Investment Funds (CIF). Available at: <https://www.csis.org/analysis/just-transition-concepts-and-relevance-climate-action>.

Cedergren, E., Tapia, C., Sánchez Gassen, N. & Lundgren, A. (2022). *Just green transition. Key concepts and implications in the Nordic Region*. Nordregio discussion paper 2022:2. Stockholm: Nordregio. Available at: <https://pub.nordregio.org/wp-2022-2-just-green-transition-key-concepts-and-implications-in-the-nordics/#>.

Heffron, R. & McCauley, D. (2018). What is the 'just transition'?, *Geoforum*, 88, 4-77. Available at: [What is the 'Just Transition'? - ScienceDirect](#).

Just Transition Research Collaborative. (2018). *Mapping just transition(s) to a low-carbon world*. Geneva: United Nations Research Institute for Social Development. Available at: <https://www.unclearn.org/wp-content/uploads/library/report-jtrc-2018.pdf>.

Montmasson-Clair, G. (2021): *A policy toolbox for just transitions*. Trade & Industrial Policy Strategies Working Paper. Available at: [TIPS Working Paper Policy toolbox for a just transition.pdf \(justtransitionforall.com\)](#).

OECD. (2017). *Investing in climate, investing in growth*. Paris: OECD. Available at: https://www.oecd.org/en/publications/investing-in-climate-investing-in-growth_9789264273528-en.html.

United Nations. (2022). *A just green transition: concepts and practice so far*. Future of the world policy brief no. 141. Available at: https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/PB_141.pdf.



Why should the green transition be a just transition?

A systemic change is needed to transition to sustainable and climate-neutral economies and societies. This requires not only environmentally sound but also socially just policies. It is essential to engage with communities and groups who are most affected by the transition and to ensure that support is in place for those facing challenges. By doing so, the green transformation can become both just and inclusive.

Why is it important that the green transition is just? Let's delve into some reasons [4].

”

Achieving the transition to an environmentally sustainable and climate-safe future is a matter of justice in itself but how it is done also matters.

- UN, Department of Economic and Social Affairs

4. UNDP (2022): What is a just transition? And why is it important?, Blog post November 3, 2022. Available at: <https://climatepromise.undp.org/news-and-stories/what-just-transition-and-why-it-important>.

1. Foster public support

Active involvement of communities and stakeholders – particularly those most affected – in an inclusive social dialogue can help to build support for ambitious climate policies.

2. Develop better policies

By making just transition discussions and decision-making inclusive, policymakers can tap into the expertise of a diverse range of stakeholders. Their sectoral- or region-specific knowledge can contribute to the development of more effective and coordinated green transition policies, delivering broader benefits.

3. Achieve broader sustainability goals

The green transition is not just about reaching climate goals. It is a powerful tool for achieving broader social and sustainability commitments, like the 2030 Agenda or Our Vision 2030. For example, by creating green jobs that are accessible for all, a just transition can contribute to SDG 8 “Decent work and economic growth” and SDG 11 “Reduced inequalities”. Working towards a just green transition also aligns with the vision of building “a socially sustainable Nordic Region,” as outlined by the Nordic Prime Ministers in Our Vision 2030.

Recommended further reading

Brandstedt, E., Busch, H. & Ramasar, V. (2022). Om orättvisor i omställningen till en fossilfri framtid. *Tidskrift för Politisk Filosofi*, 26(1), 33-44. Available at: [TPF 2022-1 33-44 brandstedt busch ramasar.pdf](#).

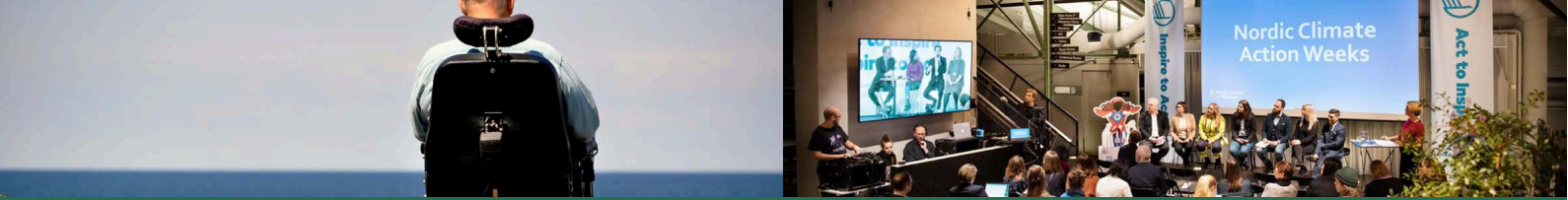
Pinker, A. (2020). *Just transitions: A comparative perspective. A report prepared for the Just Transition Commission*. James Hutton Institute and Sefari Gateway. Available at: [Just Transitions: a comparative perspective \(www.gov.scot\)](#).

UNDP. (2022). *What is a just transition? And why is it important?*, Blog post November 3, 2022. Available at: <https://climatepromise.undp.org/news-and-stories/what-just-transition-and-why-it-important>.

Six priority areas for a Just Green Transition

Here's what needs your attention. Each area highlights key challenges and provides actionable, inclusive solutions for policymakers. The priority areas were selected based on discussions with Nordic civil society organisations and labour union representatives. The examples, tools and other materials presented in each area stem from desk research.

- Develop a vision
- Engage people
- Assess and mitigate social and regional impacts
- Adopt a place-based approach
- Invest in inclusive reskilling and upskilling
- Support green choices



Develop a vision

Inspiring people is key to making the green transition a success. Positive visions and compelling scenarios of a sustainable future can help generate public support, especially if developed in collaboration with stakeholders. By contrast, framing the green transition mainly as a burden will likely lead to resistance.

Key messages:

- Create a vision of how life will be in a more sustainable and green society.
- Engage a broad range of stakeholders in shaping that vision.
- Use the vision to inspire action.

What are the challenges?

1. The green transition can feel burdensome

The green transition can benefit everyone, for example through better air and water quality, improved health and well-being, better public transport infrastructure, new green jobs and sustainable green energy. However, in political and public debate, the emphasis is often placed on the risks and challenges of the transition – both real and perceived. Ambitious policies can therefore feel burdensome.

2. Ambitious goals may seem unrealistic

A narrow focus on the costs, challenges and hurdles of the green transition can lead people to believe that achieving ambitious climate goals is impossible. That can dampen engagement and optimism.

3. The green transition becomes too politicised

The green transition is a long-term process that requires commitment and clear, specific framework conditions for the numerous stakeholders and investors involved. Shifting goals and short-term policies hinder progress.

”

One talks about the green transition being a big cost, but you have to turn this around. Away with this argument! What do we gain from it? Everyone wins.

-Civil society actor representing people with disabilities

What can *policymakers* do?

1: Establish clear goals and common ground

To be successful, actors involved in the green transition need clear goals and a strong commitment from across the political spectrum that outlasts election cycles. Aim to build common ground around the goal that all people should enjoy a high quality of life, with the green transition as a strategy for achieving this. The green transition should be a uniting, not a dividing force.^[5]

2: Co-create an inspiring vision

Develop a joint, inspiring vision of how a sustainable future will look, focusing on the improvements and quality of life it will bring. Research shows that jointly developed visions can create transformational changes in society. While positive narratives about the future can spark action and engagement, the absence of a vision or the presence of negative scenarios can lead to apathy or anxiety.^[6]

5. Strambo, C. & Thazin Aung, M. (2019). Five lessons from past mining closures. SEI Feature. Stockholm: Stockholm Environment Institute. Available at: <https://www.sei.org/features/five-lessons-from-past-mining-closures/>.
6. Jensen, C.L., Oldin, F. & Andersen, G. (2022). Imagining and co-creating futures of sustainable consumption and society. *Consumption and Society*, 1(2), 336-357. <https://doi.org/10.1332/XQUM7064>.

Invite communities, civil society associations, social partners and other stakeholders to participate in crafting the vision. Focus on engaging vulnerable and hard-to-reach groups (see the “Engage people” section). Engaging in a vision-creating process can give people, especially young people, new hope that climate goals can be achieved. It is important to define a vision that is realistic, as setting achievable goals helps build trust.^[7]

The vision can serve as a key tool to secure commitment and explain how green transition policies and initiatives contribute to a larger goal. It can also remind people how their daily activities are connected to the broader ambition and how they can help to make a change.^[8]

”

Make sure that people, and not just young people, believe that we can change the way the world is moving. That there is hope!

- Youth representative

3: Use the vision to inspire action

Communicate the multiple benefits of the green transition and use the joint vision to motivate policies and initiatives. Research shows that transparent communication on how climate policies work, their efficiency and how they protect vulnerable groups are important factors when it comes to generating support for climate policies.^[9]

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7. Lind, A. (2023). *Nordic visions of climate neutrality*, Copenhagen: Nordic Council of Ministers. Available at: <https://www.norden.org/en/publication/nordic-visions-climate-neutrality>.
 8. Salonen, H. (2024). *Between hand-outs and stand-outs: Opportunities for policy support for just green transitions*. Nordregio policy brief 2024:1. Stockholm: Nordregio. Available at: <https://nordregio.org/publications/between-hand-outs-and-stand-outs-opportunities-for-policy-support-for-just-green-transitions/>.
 9. Dabla-Norris, E., Helbling, T., Khalid, S., Khan, H., Magistretti, G., Sollaci, A. & Srinivasan, K. (2023). *Public perceptions of climate mitigation policies: Evidence from cross-country surveys*. IMF Staff Discussion Notes (SDNs) SDN/2023/002. Available at: <https://www.imf.org/media/Files/Publications/SDN/2023/English/SDNEA2023002.ashx>; Dechezleprêtre, A., Fabre, A., Kruse, T., Planterose, B., Sanchez Chico, A. & Stantcheva, S. (2022). *Fighting climate change. International attitudes toward climate policies*. NBER Working paper 30265. Cambridge, MA: National Bureau of Economic Research. Available at: [w30265.pdf \(nber.org\)](https://www.nber.org/papers/w30265.pdf).

Stress the fact that the estimated damage to society from unmitigated climate change far outweighs the costs of the green transition. Delaying the green transition is therefore not a viable option.^[10]

”

It can be costly to implement policies and measures, but the cost of not doing so is way higher, and I think people tend to forget that.

- Youth representative

Read more about how to develop a vision

Aggarwal, D., Esquivel, N., Hocquet, R., Martin, K., Mungo, C., Nazareth, A., Nikam, J., Odenyo, J., Ravindran, B., Kurinji, L.S., Shawoo, Z. & Yamada, K. (2022). *Charting a youth vision for a just and sustainable future*. Stockholm Environment Institute. Available at: <https://www.sei.org/publications/charting-a-youth-vision/>.

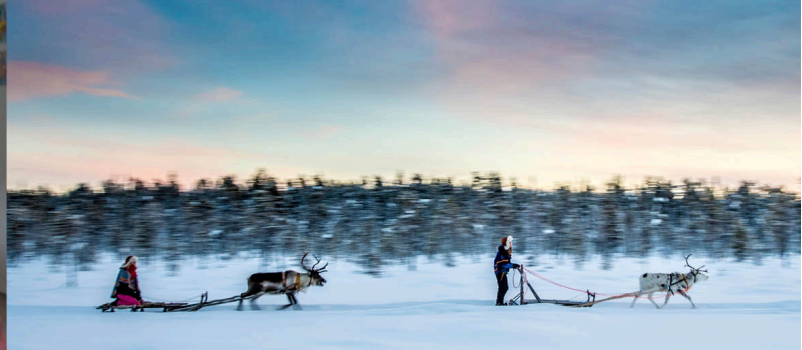
Dabla-Norris, E., Helbling, T., Khalid, S., Khan, H., Magistretti, G., Sollaci, A. & Srinivasan, K. (2023). *Public perceptions of climate mitigation policies: Evidence from cross-country surveys*. IMF Staff Discussion Notes (SDNs) SDN/2023/002. Available at: <https://www.imf.org/-/media/Files/Publications/SDN/2023/English/SDNEA2023002.aspx>.

Karlsson, M., Westling, N. & Lindgren, O. (2023). Climate-related co-benefits and the case of Swedish policy. *Climate*, 11(2), 40. <https://doi.org/10.3390/cli11020040>.

Lind, A. (2023). *Nordic visions about climate neutrality*. Copenhagen: Nordic Council of Ministers. Available at: <https://www.norden.org/en/publication/nordic-visions-climate-neutrality>.

Lorenzo, F. & Tavoni, M. (2023). How to overcome the short-term costs of the climate transition? The benefits of the green transition. *EconPol Forum*, 24(6), 7-11. Munich: CESifo. Available at: <https://www.cesifo.org/en/publications/2023/article-journal/how-overcome-short-term-costs-climate-transition>.

10. OECD (2017). *Investing in climate, investing in growth*. Paris: OECD Publishing; Atteridge, A. & Strambo, C. (2020). *Seven principles to realize a just transition to a low-carbon economy*. Stockholm: Stockholm Environment Institute. Available at: <https://www.sei.org/wp-content/uploads/2020/06/seven-principles-for-a-just-transition.pdf>.



This is how policymakers can develop a vision

Draw inspiration from real-life **examples** of countries and regions that have co-created a vision. We also highlight an interesting **tool** that can help to prepare and coordinate co-creation processes.

EXAMPLE: Nordic Vision 2030

Location

Nordic Region

Description

In June 2019, the Ministers for Nordic Cooperation agreed on a common vision to guide Nordic cooperation until 2030, entitled the Nordic Vision 2030. The prime ministers of the Nordic countries adopted the vision as a new strategic document in August 2019.

The Nordic Vision 2030 defines the goal of the Nordic Region being the most sustainable and integrated world region by 2030. It lays out three strategic priorities: a green Nordic Region, a competitive Nordic Region and a socially sustainable Nordic Region.

In November 2020, an action plan for the years 2021-2024 was adopted. It defines 12 subgoals tied to the three strategic priorities, as well as indicators to measure progress.

Outcome

All activities and work by the Nordic Council of Ministers are designed to contribute to achieving the Nordic Vision. Nordic institutions and organisations have aligned their work to the strategic priority areas. Budgetary decisions at Nordic level are also driven by the Nordic Vision and the strategic priorities.

The Nordic Statistics Database offers a series of indicators to help measure progress on the Nordic Vision. A mid-term evaluation of the action plan in 2022 concluded that the Nordic Council of Ministers has delivered concrete results but also offered recommendations on how to bolster efforts to achieve the vision.

Read more

On the Nordic Co-operation's website: [Information about the Nordic Vision 2030](#) and [Information about the action plan](#).

Publication: [Mid-term evaluation of the action plan](#) (PDF).

[Nordic Statistics Database](#) with indicators related to the Nordic Vision.

EXAMPLE: Strategy of the National Commission on Sustainable Development 2022-2030

Location

Finland

Description

Finland's National Commission on Sustainable Development adopted a new strategy for sustainable development in March 2022. It is entitled "A prosperous and globally responsible Finland that protects the carrying capacity of nature". The strategy is designed to provide a framework to ensure policy coherence in the work of various administrative branches and stakeholders.

The strategy defines six priority areas for change, each with a set of concrete objectives and measures to bring about change. Those priority areas include, for example, education, competence and sustainable lifestyles, as well as food systems that promote wellbeing. The strategy also includes five cross-cutting principles to guide implementation of the strategy, including the principles that no one should be

left behind and facilitation of the inclusion and participation of diverse social actors.

Stakeholders can contribute to achieving the goals defined in the strategy by making public commitments on the Commitment2050 website. The website encourages organisations, companies and individuals to make commitments to sustainable development by describing concrete ideas and goals.

Outcome

To date, more than 3,100 commitments have been registered on the website, in relation to nutrition, lifestyle, the Green Deal and more. A mid-term review of the strategy and its impacts will be carried out in 2025.

Read more

[The strategy of the Finnish National Commission on Sustainable Development \(PDF\).](#)

[Commitment 2050 website](#), by the Finnish Commission for Sustainable Development Finland.

EXAMPLE: Sustainable Iceland – Iceland's strategy for sustainable development until 2030

Location

Iceland

Description

In 2022, the government of Iceland established a formal cooperation platform for sustainable development called Sustainable Iceland. It includes a Sustainability Council composed of around 80 members, including the Prime Minister, representatives of the national government and municipalities, members of the Icelandic parliament, social partners and civil society organisations. The participation of a broad range of stakeholders is intended to ensure that the sustainability work is firmly grounded in society.

Sustainable Iceland shall accelerate Iceland's work on sustainable development, well-being and the just transition. The initiative has the mandate to formulate a sustainability strategy, to propose indicators to measure progress, to strengthen multinational cooperation and to engage a broad range of stakeholders in the process. Indeed, seven open consultation meetings have been organised throughout Iceland to discuss sustainable development with the public.

Outcome

In 2024, the government approved a strategy for sustainable development which had been developed by the Sustainability Council, based on broad stakeholder engagement. The strategy includes a vision for the year 2030, stating that Iceland shall have implemented the United Nation's Sustainable Development goals in that year and that just transition principles will be taken into consideration in all planning, including fiscal decision-making. Iceland is intended to boast a strong welfare system, competitive economy and green solutions in 2030.

The aim is for all of government and all of society to contribute to reaching those goals. In November 2024, the Icelandic government will host an open symposium to present the policy to all interested stakeholders and discuss how to accelerate progress.

Read more

Information about [Sustainable Iceland](#) is available on Government of Iceland's website.

[The strategy of Sustainable Iceland is available here](#) (in Icelandic, English translation forthcoming) (PDF).

EXAMPLE: Everyone can flourish – a new vision for Åland

Location

Åland

Description

In 2014, Åland's government and parliament agreed on the goal of Åland becoming a fully sustainable society by 2051. In 2016, all residents of Åland were invited to co-create a vision to guide the process.

A total of 96 individuals participated in workshops and developed a draft vision for Åland. Based on that vision, an expert panel proposed strategic development goals for 2030. All residents of Åland were invited to attend open meetings and discuss the draft vision and proposed strategic goals. Based on those discussions, the draft vision and goals were finalised.

In 2016, the [Bärkraft Åland](#) network was founded. It consists of various stakeholders, including representatives from government, civil society associations, municipality representatives, artists, the business sector and young people. The network underpins and coordinates the process of implementing the vision. The network is open to all interested individuals and organisations.

Outcome

The Council for Development and Sustainability, which is part of Bärkraft Åland, decided on the final wording, including the slogan that "Everyone can flourish in a sustainable society on the islands of peace" and seven strategic development goals in June 2016. In 2021 and 2022, the goals were further refined into subgoals and indicators to measure progress. During the last eight years, the vision and strategic goals have been implemented throughout society, with broad engagement and the involvement of diverse stakeholders and citizens.

Read more

Information about the vision on [Bärkraft Ålands's website](#).

The development of the vision and the strategic goals (in Swedish) in the "[Utvecklings- och hållbarhetsagenda](#)" by Bärkraft Åland.

TOOL: X-Curve – a sensemaking tool to foster collective narrative on system change

Author or Publisher

DRIFT and EIT Climate-KIC Transitions Hub

Year of publication

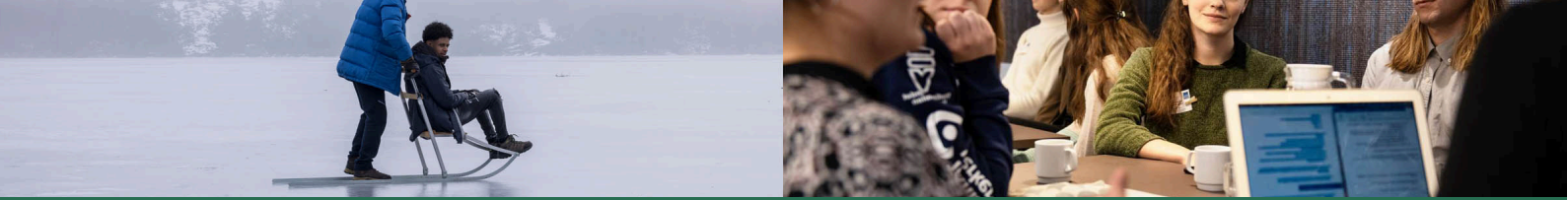
2022

Description

This booklet provides ideas and step-by-step guidance on how to prepare and coordinate co-creation processes that will raise awareness and help to develop joint visions for change. Many of the ideas and recommendations given in the booklet may help to organise workshops and discussions in order to develop visions for the green transition with a range of stakeholder groups.

Read more

More information, the booklet, a webinar on the method, and information on the tool's applications are available on [X-CURVE](#)'s page on Transitions Hub's website.



Engage people

To be successful, ambitious policies for a just green transition should be designed with the involvement of communities, social partners, interest and civil society organisations, young people and other stakeholders. The goal should be to tap into their expertise and develop better-targeted policies, to co-create innovative solutions and to enhance the fairness and effectiveness of measures and initiatives.

Key messages:

- Empower diverse stakeholders to co-develop green transition policies from the start.
- Ensure that the most affected groups are heard during the process and reach out to those groups that are underrepresented in the political debate.
- Make participation processes accessible, inclusive and meaningful.

What are the challenges?

1. Lack of opportunities

Civil society organisations, labour unions and other stakeholders state that they would like to be more involved in the green transition. Currently there are not enough opportunities to share their ideas and concerns in the fora where plans, policies and decisions are made.

2. Lack of accessibility

Participation processes can be inaccessible due to practical challenges such as timing, accessibility of meeting rooms, language barriers or other constraints. For example, online participation may exclude older adults or people with disabilities who have difficulties using digital tools. Meetings during working hours can limit

the attendance of students or employees. Participation processes that rely on volunteers and unpaid engagement can make it more difficult to involve hard-to-reach groups.

3. Unclear impact

Participants are not always provided with a clear explanation about the goals and impact of participation processes. Moreover, opportunities for participation often come too late to make a difference. According to civil society representatives, that can lead to discouragement and frustration.

4. Increased polarisation

Nordic societies have become more polarised with respect to sustainability and the green transition. Bridging those emerging gaps and enabling constructive discussion is seen as crucial for the just green transition.

”

You have a green movement that is visible and that can engage a lot of people. But it can also create a counterculture that is a barrier to the green transition.

- Youth representative

What can *policymakers* do?

1: Map stakeholders who should be involved

Map and identify groups and communities that should be invited to engage in participatory processes. Depending on the context, that could include communities, workers, industry representatives, civil society organisations, minority groups and young people. Engagement processes should be open to all interested individuals, but priority should be given to involving groups that are more likely to be affected by a planned policy or initiative according to impact assessments (see priority area “[Assess and mitigate social and regional impacts](#)”). Efforts should also be made to include hard-to-reach groups across a range of geographical locations, ages, abilities and socio-economic backgrounds.^[11]

11. C40 Cities Climate Leadership Group. (n.d.). *How to engage stakeholders for powerful and inclusive climate action planning*. C40 Knowledge Hub. Available at: [Guided Learning \(c40knowledgehub.org\)](https://www.c40knowledgehub.org/).

2: Make meetings accessible and inclusive

Different forms of engagement suit different participants and their needs, including discussion groups, assemblies, surveys, targeted interviews, digital participatory platforms and written input. In some cases, reaching out to stakeholder groups in their natural environments (e.g. schools and online platforms in the case of young people) can be beneficial. Ensure that meetings are inclusive and can be attended by all interested parties by giving consideration to location, time and accessibility issues, as well as by covering the costs of participants' accommodation, meals and transport.^[12]

”

Have meetings online so that people with accessibility issues can attend. Because we still live in a world that's not very accessible.

- Youth representative

3: Engage experts and facilitators

When different groups or individuals come together to participate, they may have a wide range of interests and expectations, different educational, cultural and socioeconomic backgrounds, as well as different knowledge about climate change and the green transition. One way to create common ground is to start participatory processes by holding learning sessions with experts at which participants can ask questions. External facilitation to coordinate processes, kick-start discussions, draft minutes of meetings and facilitate communication between participants and policymakers has also been effective in many citizens' assemblies.^[13]

4: Ensure engagement processes have a concrete impact

To make an impact, participation processes should not merely confirm goals or measures already set out but contribute to formulating policies and initiatives. To achieve that, participation processes should take place at an early stage of policymaking processes.

12. OECD. (2022). *OECD guidelines for citizen participation processes*. OECD Public Governance Reviews. Paris: OECD Publishing. Available at: https://www.oecd.org/en/publications/oecd-guidelines-for-citizen-participation-processes_f765caf6-en.html.

13. OECD. (2020). *Innovative citizen participation and new democratic institutions. Catching the deliberative wave*. Paris: OECD Publishing. Available at: https://www.oecd.org/en/publications/2020/06/innovative-citizen-participation-and-new-democratic-institutions_11aa2baf.html.

Provide clear information to involved stakeholders about how they can contribute, what they can expect and how their input will be used. Set realistic expectations about the potential impact of the input to avoid later disappointments and resentment. Once participants have shared their recommendations and conclusions, follow up with them and explain how their input is making a difference in policymaking.^[14]

5: Make citizen engagement practices a regular routine

While one-off participatory methods can be effective, they lack the capacity to have long-term structural or institutional effects, to build up a knowledge base and to allow for joint monitoring and evaluation of policies and initiatives. The green transition is not an overnight transformation, and the needs and concerns of affected groups and territories may change over time. Given those inevitable shifts, engagement practices should become a regular routine within policymaking, with citizens and stakeholder groups seen as long-term partners. That could be achieved, for example, by creating or supporting councils representing different social groups, ombudspersons or advisory boards.^[15]

14. Salonen, H. (2024). *Between hand-outs and stand-outs: Opportunities for policy support for just green transitions*. Nordregio Policy Brief 2024:1. Stockholm: Nordregio. Available at: <https://pub.nordregio.org/pb-2024-1-Between-hand-outs-and-stand-outs/index.html>.

15. Montmasson-Clair, G. (2021). *A policy toolbox for just transitions*. Trade & Industrial Policy Strategies Working Paper. Available at: https://justtransitionforall.com/wp-content/uploads/2022/10/TIPS_Working_Paper_Policy_toolbox_for_a_just_transition.pdf

Read more about how to engage people

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C40 Cities Climate Leadership Group. (n.d.). *How to engage stakeholders for powerful and inclusive climate action planning*. C40 Knowledge Hub. Available at: [Guided Learning \(c40knowledgehub.org\)](#).

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Kjellander, T. & Sjöblom, L. (2022). *Child and youth participation during crisis. Recommendations for decision makers in the Nordic Region*. Stockholm: Nordic Welfare Centre. Available at: <https://www.norden.org/en/publication/child-and-youth-participation-during-crisis>.

Løberg, M. (2021). *See, listen and include. Participation for children and young people with disabilities in the Nordic countries*. Stockholm: Nordic Welfare Centre. Accessible at: https://nordicwelfare.org/wp-content/uploads/2021/02/NWC-See-listen-and-include_WEBB.pdf.

Macquarie, R., Green, F., Kenward, T., Müllerová, H., Feigerlová, M. & Balounová, E. (2023). *Just and robust transitions to net zero: A framework to guide national policy*. London and Gra: University College London and ClimLaw. Available at: https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2023/10/Just-and-robust-transitions-to-net-zero_A-framework-to-guide-national-policy.pdf.

Nordic Council of Ministers (2020). *Do Rights! Nordic perspectives on child and youth participation*. Nord 2020:043. Copenhagen: Nordic Council of Ministers. Available at: [FULLTEXT01.pdf](#).

OECD. (2020). *Innovative citizen participation and new democratic institutions. Catching the deliberative wave*. Paris: OECD Publishing. Available at: https://www.oecd.org/en/publications/2020/06/innovative-citizen-participation-and-new-democratic-institutions_11aa2baf.html.

OECD. (2022). *OECD guidelines for citizen participation processes*. OECD Public Governance Reviews. Paris: OECD Publishing. Available at: https://www.oecd.org/en/publications/oecd-guidelines-for-citizen-participation-processes_f765caf6-en.html.



This is how policymakers can engage people

Draw inspiration from countries and regions that have organised citizens' assemblies, children's parliaments and more (**examples**). Interesting **tools** include actionable guidelines and step-by-step instructions offered by various organisations and actors that can help to prepare and coordinate participation processes.

EXAMPLE: Citizens' Assembly on Climate Issues

Location

Denmark

Description

The Citizens' Assembly on Climate Issues was founded in autumn 2020. The Ministry for Climate, Energy and Utilities invited the members to debate challenges associated with the green transition and provide input and recommendations for the drafting of climate action plans.

The 99 citizens of the assembly were selected based on several socio-economic characteristics (such as age, gender, geographical location and socioeconomic status) to form a group representative of the population.

The assembly members attended two weekend gatherings and five evening meetings between October 2020 and March 2021. Due to the pandemic, all meetings were held online. The Danish Board of Technology acted as a facilitator for the assembly meetings. A panel of climate experts assisted the participants with scientific knowledge. Participants received remuneration of DKK 1,000 for their participation in each of the five meetings.

Outcome

The final report of the Citizens' Assembly on Climate Issues provided a large range of recommendations to the Danish Parliament's Climate, Energy and Utilities Committee, as well as to the Minister for Climate, Energy and Utilities (among others). The recommendations concerned the topics of education, behaviour and participation, agriculture, land use and resources, transport and technical facilities.

Read more

Information about the [Citizens' Assembly on Climate Issues](#) (in Danish) on Danish Ministry of Climate, Energy and Utilities website.

[Recommendations of the Citizens' Assembly on Climate Issues](#) (in English) (PDF).

EXAMPLE : Advisory Group for Children and the Children's Forum

Location

Iceland

Description

In 2009, the Ombudsman for Children in Iceland established an advisory group of children between the ages of 12 and 17. Many children have since participated in the group and discussed a range of matters concerning children in Iceland.

Every other year, the Ombudsman also organises a children's forum. Children are randomly selected from the national registry and invited to attend and discuss matters of their own choice with ministers, members of parliament, labour market representatives and NGOs.

Outcome

The proposals of the Children's Forum are always presented to the government and the Ombudsman promotes them in his day-to-day work.

Read more

Information on the Ombudsman, the Advisory Group and the Children's Forum on the official site of [The Office of the Ombudsman for Children](#) in Iceland.

Additional information on [The Children's Forum](#).

EXAMPLE: Citizens' Assembly on Climate

Location

Sweden

Description

During the spring of 2024, Sweden's first Citizens' Assembly on Climate kicked off. It forms part of the research programme Fairtrans, which aims to promote the transition to a fair and fossil-free future through cooperation between research and civil society. The goal of the Citizens' Assembly was to inject new suggestions and ideas into the Swedish climate discussion.

The assembly consisted of 60 participants who were chosen based on a randomised scientific method with the aim of reflecting the population living in Sweden.

Over the course of nine meetings, the participants developed suggestions on how Sweden can meet the goals of the Paris Agreement. Climate experts and a consultation group consisting of public figures representing a broad political spectrum supported the work of the assembly. In addition, two mentors welcomed the participants and provided support and inspiration along the way.

Outcome

The Citizens' Assembly developed 22 proposals. On 20 May 2024, they were presented to politicians of both governing and opposition parties.

Read more

About the [Citizens' Assembly](#) on Fairtrains' website.

About the [Fairtrans project](#) on their website.

EXAMPLE : Stakeholder engagement in regional development

Location

Jämtland Härjedalen region, Sweden

Description

Between 2019 and 2021, the Jämtland Härjedalen region developed a new regional development strategy. An evaluation of the previous development strategy had shown that several stakeholders did not view the goals as sufficiently inclusive, nor did the goals take into account the entire county or the different conditions in different locations. The regional government wanted to change that. The solution was to use a method called "collaboration staircase" – a model consisting of four steps:

1. See and hear
2. Understand
3. Want
4. Do

Municipalities, business organisations, the local heritage association Heimbygda, the Southern Sami cultural centre Gaaltije and several other stakeholders collaborated on 14 different projects to gather input from across the entire region. A turning point came when the team chose to completely rethink the strategy, rather than merely revise it. The analysis phase revealed the need for more integration of the Sami perspective, as well as the viewpoint of the creative and cultural sectors.

After the initial listening and understanding phase, it became apparent that the third step of the collaboration ladder, "want", was crucial to advancing the regional development strategy. The team then reset and started to create a future vision.

In the final "do" step, the region refined its development fund structure and explored ways to coordinate financing more effectively to bolster regional capacity. That phase witnessed strong commitment from stakeholders who had previously been less involved.

Outcome

The process contributed to increased involvement of diverse stakeholders and the integration of new perspectives into the regional development strategy.

Read more

[Regional Development Strategy för Region Jämtland 2050](#) on Region Jämtland Härjedalen's website.

[A description of the initiative is available here](#) (in Swedish) on Tillväxtverket/The Swedish Agency for Economic and Regional Growth's website.

EXAMPLE : Citizen dialogues on Canada's energy future

Location

Canada

Description

In the autumn of 2017, Natural Resources Canada – the department of the Government of Canada responsible for natural resources and energy – began a series of cross-country dialogues with citizens to inform Canada's national energy policy.

A total of 145 citizens participated in the process. The participants were randomly selected, based on a set of criteria to reflect population diversity with regards to gender, age, income, ethnicity, education and geographical location, as well as personal perceptions of economics and the environment.

Five regional dialogue meetings were held in Vancouver, Calgary, Toronto, Montreal and Halifax in September 2017, each lasting for two days and facilitated by the Simon Fraser University Morris J. Wosk Centre for Dialogue. Ahead of the dialogue meetings, participants received written material about energy issues by post. During the sessions, participants discussed how energy impacts their lives, explored ideas about Canada's energy future and developed recommendations.

Building on the results of the five regional dialogues, a three-day, pan-Canadian dialogue was organised in Winnipeg. During the event, 35 participants selected from the total group developed overarching principles for Canada's future energy policy.

Outcome

The participants developed 20 policy recommendations on critical issues related to energy, climate change and the economy. In addition, the citizens identified five key principles that should guide Canada's energy future. The recommendations and principles were submitted to Natural Resources Canada to inform decision-making processes on Canada's energy future.

Read more

The report "[Citizen dialogues on Canada's energy future](#)" describing the process and participant selection, as well as the recommendations and principles that were developed through the citizen dialogues (PDF).

EXAMPLE: Annual National Youth Assembly on Climate

Location

Ireland

Description

Around 70 young people convene every year in Dublin to discuss climate challenges. They choose the priority areas to be discussed and develop recommendations for the national government. Participants come from around the country and are aged between 12 and 24. The Irish Minister for Environment, Climate and Communications and the Minister for Children, Equality, Disability, Integration and Youth convene the assembly, but it is co-designed and co-facilitated by a youth advisory group. In 2024, the youth assembly was held for the third time, focusing on engagement.

Outcome

The recommendations of the Youth Assembly feed into the government's climate action plan.

Read more

More information on the [2024 assembly](#) is available on Government of Ireland's website.

EXAMPLE: Children's Parliament

Location

Scotland

Description

In 1996, a children's parliament was established in Scotland to strengthen children's human rights and influence on national legislation and policy. The initiative involves children aged up to 14 years. Between autumn 2020 and spring 2021, around 100 children aged 7 to 14 from across Scotland participated in a children's parliament on climate change. During that period, the participants learned about climate change and developed ideas and suggestions on how the Scottish government should tackle climate-related challenges. The group was led by 12 "investigators" – children who further explored the concepts and ideas discussed by the assembly members and who analysed the ideas and opinions that were shared. They were supported by climate experts and a team of facilitators. Due to the pandemic, all meetings and workshops took place online.

Outcome

The recommendations of the Children's Parliament were shared with the members of the adult Citizen's Assembly that took place at the same time. The children's recommendations were included in the recommendations of the adult Citizens' Assembly. The government developed a comprehensive report on how it would respond to the proposals.

Read more

[Climate change – Children's Parliament's website.](#)

Final report describing experiences of the Children's Parliament on Climate Change: ["It's up to you, me and all of us"](#). Children's Parliament investigates climate change for Scotland's Climate Assembly (PDF).

EXAMPLE: Just transition listening project

Location

United States

Description

In 2020, the Labor Network for Sustainability gathered stories from more than 100 people who have experienced the green transition first-hand, for example due to plant closures or downsizing. The stories told by the participants focused on the support systems that are available and on what is lacking. Participants could also share their visions for the future.

Outcome

The stories were shared online, through social media and webinars and were summarised in a final report.

Read more

Project website: [Just Transition Listening Project - Labor Network for Sustainability \(labor4sustainability.org\)](https://labor4sustainability.org).

The final report "[Report of the Just Transition Listening Project](#)" of the project.

TOOL : Inclusive Community Engagement Playbook: Engaging with Children

Author or Publisher

C40 Cities

Year of publication

2021

Description

This document is an annex to the "Inclusive Community Engagement Playbook", which contains tools, ideas and strategies to engage various stakeholders in climate policy planning at local level. This annex document focuses on how to engage with children. It discusses key considerations and presents case studies from various countries. That includes a "Traffic Agent" app developed in Oslo. C40 has published similar annexes offering ideas on how to engage with young people, older adults, trade unions and the broader public (see links below). While the documents are targeted towards local-level engagement in cities, many of the ideas and approaches presented could inform similar engagement practices at national or regional level.

Read more

The playbook "[Inclusive Community Engagement](#)" on how to engage children.

The playbook "[Inclusive Community Engagement](#)" on how to engage youth.

[Youth Engagement Playbook for Cities](#) (PDF).

The playbook "[Inclusive Community Engagement](#)" on how to engage older adults.

The playbook "[Inclusive Community Engagement](#)" on how to engage trade unions.

The playbook "[Inclusive Community Engagement](#)" on public consultation guidance.

TOOL : Making consultations and dialogues inclusive and accessible for all – practice note

Author or Publisher

European Commission

Year of publication

2021

Description

This practice note provides specific tips and suggestions on how to make consultations and dialogues accessible and inclusive. That includes practical suggestions on how to engage with civil society organisations that represent various marginalised groups. The note is written specifically for EU Delegations, but the recommendations can be useful for other actors as well.

Read more

The material [can be accessed on EU Login's website](#). Note that it is a restricted link and an account needs to be created to obtain access.

TOOL : Youth for a just transition – a toolkit for youth participation in the Just Transition Fund

Author or Publisher

European Commission

Year of publication

2021

Description

The toolkit was developed to intensify the involvement of young people in work involving the EU Just Transition Fund in European regions. It offers numerous tips, methods and examples for youth engagement during the design phase, implementation phase and evaluation of the Just Transition Fund. Many of the examples and methods are likely also useful in a Nordic context to foster youth engagement during the green transition.

Read more

The toolkit "[Youth for a just transition](#)" (PDF).

TOOL : Knowledge Network on Climate Assemblies

Author or Publisher

Knoca

Year of publication

n/a

Description

The Knowledge Network on Climate Assemblies (Knoca) offers a range of materials and examples on how to conduct climate assemblies. The website contains guidance documents on how to organise such an assembly, how to involve children and young people and how to integrate climate assemblies into the policymaking process. The website also offers short summary descriptions on the national-level climate assemblies that have been held across Europe to date, including examples from Denmark, Finland, Norway and Sweden.

Read more

[Network website with access to practical guidance and resources](#) on Knoca's website.

TOOL : Empowering youth in cohesion policy

Author or Publisher

Jakubowska, J. and Stępién, M.

Year of publication

2024

Description

This publication identifies barriers that hinder effective youth engagement in the green transition and describes strategies to overcome them. Written for policymakers working on cohesion policy at EU level, many of its lessons and recommendations should be useful for a Nordic national context as well.

Read more

Report "[Empowering youth in cohesion policy](#)" (PDF).

TOOL : Make the invisible visible – how to engage with hard-to-reach citizens for policy development?

Author or Publisher

Rübel, J. and Steinberg, R.

Year of publication

2023

Description

This hands-on guide provides methodology, learnings and best practices from the "Fair Energy Transition for All" project. The Method Guide aims to be a practical guide for everyone planning to better involve hard-to-reach citizens in the public debate, decision-making and policymaking processes – regardless of the topic.

Read more

The method guide "[Make the invisible visible](#)" (PDF).



Assess and mitigate social and regional impacts

The green transition brings many benefits for people in the Nordic Region: better air quality, less environmental damage and new green jobs. However, it will likely lead to disruptions and costs, with some groups or regions being harder hit than others. To ensure a fair transition and maintain public support, policymakers should identify and address possible adverse impacts early on.

Key messages:

- Identify possible social and regional consequences of green transition policies before they are adopted.
- Develop measures to avoid or mitigate challenging impacts.
- Counteract potential increases in economic, social and spatial inequality due to the green transition.

What are the challenges?

1. Lack of knowledge about labour market impacts

The green transition will likely affect all sectors of the economy, directly or indirectly. Nonetheless, we know too little about either the long-term or short-term impacts, i.e. how the green transition will affect economic activity and employment in different sectors and regions, and which knowledge and skills will be required in a greener economy. Due to that lack of knowledge, it is difficult to anticipate the impacts and address potential negative outcomes in industrial sectors and regions.^[16]

16. Bjerkesjö, P., Isaksson Lantto, F., Malmaeus, M., Sanne, J.M. & Wennerholm, M. (2021). *Grön omställning och arbetsliv – Kunskapsläge och fortsatta forskningsbehov*. Stockholm: Formas and Forte. Available at: <https://forte.se/publikation/gron-omstallning-och-arbetsliv-kunskapslage-och-fortsatta-forskningsbehov/>.

2. Insufficient consideration of social impacts

Different social groups are impacted by green transition policies in different ways. For example, discouraging car use in city centres can limit the mobility of people who have difficulty walking or cycling. Climate policies that increase the cost of fuel, energy or food can disproportionately affect people in rural areas and low-income households. Additionally, the increased use of digital tools risks excluding people who lack digital skills or equipment. Such social impacts of green transition policies are not always sufficiently identified and addressed in advance.^[17]

Furthermore, different social groups, such as older adults or people with disabilities, are often seen as homogenous groups. However, they are very diverse in terms of their attitudes, abilities and socio-economic status, affecting their capability to cope with changes brought about by the green transition. If that diversity is not considered, policy impacts might not be adequately identified and addressed.^[18]

3. Difficulty of raising concerns

Civil society representatives state that it can be challenging to reach policymakers to point out possible negative impacts of planned green transition policies. When opportunities to provide input do arise, it is often too late in the policymaking process to influence the relevant decisions. Additionally, civil society representatives have the impression that policymakers are sometimes reluctant to change existing plans and policies to accommodate new insights or feedback, limiting the effectiveness of civil society input.

4. Lack of trust in the Nordic welfare systems

For the green transition to be successful, people need to trust that social measures will be in place to support them if they lose their job during the transition or are negatively affected in other ways. Labour union representatives, however, state that trust in the Nordic welfare states has eroded among their members in recent years.

”

If we tell people 'we are going to have this big transition, you might lose your job, but the welfare system will take care of you' – I don't think most people trust that the welfare system will do that.

- Labour union representative

17. Strambo, C., Maltais, A., Gong, J., Xylia, M., Nykvist, B., Dawkins, E., Axelsson, K., Grah, R. & Kartha, S. (2024). *Strategies for governing fair low-carbon transport transitions in Sweden and beyond*. Stockholm Environment Institute. Available at: <https://www.sei.org/publications/fair-transport-transitions-sweden/>.

18. Dawkins, E., Strambo, C., Xylia, M., Grah, R., Gong, J., Axelsson, K. & Maltais, A. (2023): Who is most at risk of losing out from low-carbon transition in transport sectors in Sweden? Equity considerations from a consumption perspective. *Energy Research & Social Science*, 95, 102881.

What can *policymakers* do?

1: Conduct impact assessments

Analyse the labour market impacts, as well as the social and regional impacts, of green transition policies before they are adopted. Both the costs and benefits of measures should be mapped, as well as the consequences of inaction, i.e. maintaining the status quo, which may in itself impact social groups and regions in various ways. The current use of distributional impact assessments varies widely in terms of ambition and scope, with clear room for improvement.^[19]

First the groups, communities, regions and/or sectors that are expected to be affected by planned green transition policies should be identified. Depending on the policy, impact assessments may need to focus on different aspects – from territorial, gender and generational aspects through to equality and employment. Impact assessments may be based on various quantitative and qualitative approaches, including computable general equilibrium modelling or econometric estimations, scenario modelling, analyses of household consumption data and descriptive statistics, surveys or focus group discussions.^[20]

Ideally, impact assessments should be based on consultations with civil society organisations, labour unions and other stakeholders that can contribute place-based or group-specific knowledge (see the “Engage people” priority area). Some countries have established independent green transition advisory bodies or commissions to provide evidence-based advice on social impacts of the green transition (see the “Adopt a place-based approach” priority area).^[21]

Questions in impact assessments could include:

- Which households, workers, social groups or communities will benefit from planned policies and initiatives, and which ones are at risk of losing out?
- How will future generations be affected?

19. Gravers Skygebjerg, J., Nybro Hansen, T., Madsen, P. & von Bahr, E. (2020). *Distributional impacts of environmental and energy taxes*. TemaNord 2020:533. Copenhagen: Nordic Council of Ministers. Available at: [FULLTEXT01.pdf \(diva-portal.org\)](https://diva-portal.org/fulltext01.pdf).

20. Macquarie, R., Green, F., Kenward, T., Müllerová, H., Feigerlová, M. & Balounová, E. (2023). *Just and robust transitions to net zero: A framework to guide national policy*. London and Graz: University College London and ClimLaw. Available at: https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2023/10/Just-and-robust-transitions-to-net-zero_A-framework-to-guide-national-policy.pdf.

21. OECD. (2022). *Equitable framework and finance for extractive-based countries in transition (EFFECT)*. OECD Development Policy Tools. Paris: OECD Publishing. Available at: https://www.oecd-ilibrary.org/development/equitable-framework-and-finance-for-extractive-based-countries-in-transition-effect_7871c0ad-en.

- How will subsidies and environmental taxes affect the disposable income of different groups?
- Which industries or regions benefit from investments, and which are at risk of falling behind?

”

Who is being taxed? Who is being subsidised? When you are implementing taxes regarding climate issues, distribution policy should be in focus, which it is not at the moment.

- Labour union representative

2: Mitigate adverse impacts

Once impacts of green transition policies have been identified, steps can be taken to address negative and unequal impacts. To ensure a just green transition, mitigation measures should target vulnerable groups who stand to be most affected and have the least resources to adjust. Place-based solutions may be required to ensure fairness. To mitigate negative impacts of climate policies, different strategies are available, depending on the context and policy objectives: [22]

- temporary support for specific groups, for example through partial or full exemptions or temporary delays to application of the given policy,
- adjustment support for specific groups or communities, for example through social security, training, reskilling or financial subsidies or grants,
- financial support through redistribution of revenues from carbon pricing or climate taxes,
- support through investments in local and regional development and capacity building in impacted communities.

22. Macquarie, R., Green, F., Kenward, T., Müllerová, H., Feigerlová, M. & Balounová, E. (2023). *Just and robust transitions to net zero: A framework to guide national policy*. London and Graz: University College London and ClimLaw. Available at: https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2023/10/Just-and-robust-transitions-to-net-zero_A-framework-to-guide-national-policy.pdf; Gravers Skygebjerg, J., Nybro Hansen, T., Madsen, P. & von Bahr, E. (2020). *Distributional impacts of environmental and energy taxes*. TemaNord 2020:533. Copenhagen: Nordic Council of Ministers. Available at: [FULLTEXT01.pdf \(diva-portal.org\)](#).

3: Promote a universal design perspective

The green transition is characterised by technological advancements and innovation. To ensure a just green transition, policymakers should ensure that a universal design perspective is adopted for innovation and development processes that receive government funding. Universal design implies that new products, places and services are developed such that they can be used by as many people as possible, irrespective of their age, gender and abilities etc.^[23] That can increase the opportunities for people with disabilities, alongside other groups, to fully participate in the green transition and benefit from its opportunities. Norway can be considered a frontrunner in promoting universal design, since various plans for universal design have been adopted and the term has been included in legislation.^[24]

”

I believe that universal design is the answer to sustainability. If you know 'design for all' is, you know sustainability.

- Civil society representative

4: Monitor impacts

Monitor and evaluate the impacts of green transition policies to show if policies are having the intended consequences and progress is being made towards pre-defined targets or if unintended impacts have arisen that need to be addressed. Regular monitoring of impacts can also help to communicate achievements to the public and improve transparency.

Choose quantitative and qualitative indicators and metrics based on the policy in question. Indicators should go beyond measuring economic growth and employment and also capture different dimensions of wellbeing.^[25] Possible options include survey data to track public views of green transition policies, indicators measuring health, living standards or labour market trends and qualitative information from stakeholder discussions.^[26] The section on examples and tools includes some publications that can offer ideas and inspiration.

23. Centre for Excellence in Universal Design. (n.d.). *About universal design*. Available at: [About Universal Design - Centre for Excellence in Universal Design](#).

24. Lindberg, L. & Amilon, A. (2023). *Universell utformning och samhällsekonomiska analyser. En kartläggning av analyser och litteratur*. Stockholm: Nordic Welfare Centre. Available at: <https://nordicwelfare.org/publikationer/universell-utformning-och-samhallsekonomiska-analyser-en-kartlaggning-av-analyser-och-litteratur/>.

25. OECD. (2019). *Regions in industrial transition: Policies for people and places*. OECD Regional Development Studies. Paris: OECD Publishing. Available at: <https://doi.org/10.1787/c76ec2a1-en>.

26. Heyen, D.A. (2021). *Measuring a just transition in the EU in the context of the 8th Environment Action Programme. An assessment of existing indicators and gaps at the socio-environment nexus, with suggestions for the way forward*. Freiburg: Oeko-Institut e.V. Available at: [JustTransition-Indicator-Paper.pdf \(oeko.de\)](#).

Ensure that indicators monitoring impacts and trends are made available to the public and, ideally, collaborate during the monitoring process with the stakeholders who were involved in designing the policy. Questions to address in the monitoring phase could include:^[27]

- Did the policy or initiative reach the targets and goals?
- Did the ex-ante impact assessments capture the impact of the policy? Did unexpected impacts or unintended consequences arise?
- Are additional measures necessary to mitigate social or regional consequences?
- What can be learned for future policymaking?

27. Cahill, B. & Allen, M.M. (2021). *Pathways for just transitions. Gender responsive policies & place based investment*. CSIS and CIF. Available at: <https://www.cif.org/knowledge-documents/pathways-just-transitions-gender-responsive-policies-place-based-investment>.

Read more about how to assess and mitigate social and regional impacts

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European Commission. (2018). *Impacts of circular economy policies on the labour market – Final report and annexes*. Luxembourg: Publications Office. Available at: <https://data.europa.eu/doi/10.2779/574719>.

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This is how policymakers can assess and mitigate social and regional impacts

Draw inspiration from real-life **examples** of countries and regions that have developed new approaches to assess the impacts of green transition policies. We also highlight interesting **tools** that can help to assess the social and employment impacts of policies and initiatives.

EXAMPLE: Gender impact assessment of Finland's climate and energy strategy

Location

Finland

Description

In 2021, the Finnish government invited a research group consisting of Oxford Research, Equality Research Helsinki and Gaia Consulting to conduct a gender impact assessment of the climate and energy strategy, which was under development at that time. The researchers examined the gender impacts of 101 policy measures proposed in six sectors: energy production, construction and buildings, transport, industry, the service sector and agriculture.

Outcome

The researchers concluded that the policy measures mainly affect male-dominated sectors, but female-dominated service sectors may suffer from negative employment impacts as well. They recommended increasing the number of women educated in male-overrepresented sectors related to the green transition to counteract occupational gender segregation. An additional recommendation was to include more women in climate policy.

Read more

Information on the [Gender impact of the upcoming Climate and Energy Strategy assessed](#) on the Finnish Government's website.

The [gender impact assessment of the climate and energy strategy](#) is available here (in Finnish) from the Ministry of Economic Affairs and Employment (PDF).

EXAMPLE: EU Youth Check

Location

European Union

Description

In January 2024, the European Commission committed itself to implementing a Youth Check (also referred to as a Youth Test) when designing new policies and laws.

The Youth Check ensures that the impact on young people of any legislative proposal within the European Union is assessed. It also requires EU legislative bodies to involve young stakeholders and consult with them, as well as to identify mitigation measures which may help to avoid or reduce negative impacts.

Outcome

This is a very recent initiative; no impacts have been described yet.

Read more

A [press release about the EU Youth Check](#) is available on the European Commissions website.

EXAMPLE: Well-being of Future Generations Act

Location

Wales

Description

The Well-being of Future Generations Act was adopted in April 2015. It is based on a series of national consultations and conversations with citizens, communities and organisations from across Wales.

The Act makes sustainable development the central organising principle of policymaking in Wales. It requires that public bodies

- 1) consider long-term impacts,
- 2) help to prevent challenges occurring or getting worse,
- 3) take a holistic and collaborative approach, and
- 4) consider and involve people of all ages.

Through that approach, the Act is intended to lead to achievement of seven well-being goals for the country. While not explicitly focusing on the green transition, this Act is an example of how to give legal status to the goal of considering long-term policy impacts, as well as impacts across social groups.

Outcome

According to the Welsh government, positive changes from the Act are already noticeable. Among other steps, the Welsh government reduced the voting age to 16 years to give young people more political influence. The government also established a Transformation Fund, intended to fund new models of health and social care. A dedicated position – the Commissioner for Future Generations – was created to assess how public bodies are progressing towards the goals of the Act and to publish recommendations.

Read more

About the [Well-being of Future Generations \(Wales\) Act 2015](#) on Future Generations Commissioner for Wales' website.

TOOL: How to conduct a disability impact assessment

Author or publisher

Department of Justice and Equality, Government of Ireland

Year of publication

2012

Description

This document provides guidelines on how to conduct a disability impact assessment of planned policies and laws. It is directed at departments of the Irish government, but may also provide ideas and information in a Nordic context. The document provides arguments as to why disability impact assessments are important and offers step-by-step instructions on how to conduct such an assessment.

Read more

Download the publication "[How to Conduct a Disability Impact Assessment](#)" (click to download PDF).

TOOL: How to consider equality in policymaking: A 10-step guide for public bodies in England

Author or Publisher

Equality and Human Rights Commission, United Kingdom

Year of publication

2024

Description

This guide offers practical guidance on how to consider the equality impacts of policies systematically and use that information in policy design. The tool lays out ten steps for conducting an equality assessment, each containing tips and reminders on how to proceed. While written for public authorities in England, some of the steps and approaches described in this tool may be useful for authorities in the Nordic countries as well.

Read more

The guide [How to consider equality in policy making: A 10-step guide for public bodies in England](#) is available on Equality and Human Rights Commission website.

TOOL: Just transition measurement approaches

Author or Publisher

European Commission

Year of publication

2023

Description

This publication offers sets of potential indicators that can be used to measure the impact of green transition initiatives. Primarily developed for policymakers who are working on implementation of Just Transition Plans in EU Member States, many of the indicators may be used for other initiatives and contexts as well. The authors also refer to good practices from various EU Member States and describe indicator sets that are used outside the EU, for example in the US context. Those may also offer ideas for Nordic policymakers on how to measure progress and the impact of green transition policies.

Read more

The publication "[Just transition measurement approaches](#)" by the European Commission (PDF).

TOOL: Gender Impact Assessment

Author or Publisher

European Institute for Gender Equality

Year of publication

2017

Description

This tool offers step-by-step instructions on how to conduct a Gender Impact Assessment. It also provides information on who should use a Gender Impact Assessment, why and when. Good practices from European countries at different levels of governance are highlighted, including examples from Denmark, Finland and Sweden.

Read more

The [Gender Impact Assessment guidelines](#) are available on European Institute for Gender Equality's website.

TOOL: Child Rights Impact Assessment (CRIA) and Child Rights Impact Evaluation (CRIE)

Author or Publisher

European Network of Ombudspersons for Children

Year of publication

2020

Description

Child Rights Impact Assessment (CRIA) examines the potential impacts of laws, policies, programmes and services on children and young people during the development phase and helps to avoid or mitigate negative impacts.

Child Rights Impact Evaluation (CRIE) is a tool to evaluate the intended or unintended effect of laws, policies and decisions on children and young people after these have been adopted. CRIE can also help to identify steps that should be taken to mitigate such impacts.

Read more

[Templates, as well as a synthesis report](#), are available on The European Network of Ombudspersons for Children's website.

TOOL: How to measure and model social and employment outcomes of climate and sustainable development policies. GAIN training guidebook

Author or Publisher

International Labour Organization (ILO)

Year of publication

2017

Description

This guidebook contains four modules which can help to analyse the impact of climate policies on jobs and income distribution and to project green employment, based on national accounts and data. The modules include input-output models

and social accounting matrices.

Read more

The training guidebook "[How to measure and model social and employment outcomes of climate and sustainable development policies](#)" can be downloaded on ILO's website.

TOOL: Reference guide for Employment Impact Assessment (EIA)

Author or Publisher

International Labour Organization (ILO)

Year of publication

2020

Description

This report may be a good starting point for Nordic policymakers aiming to gain an overview of the options that are available in the field of Employment Impact Assessment. It provides a comprehensive overview of different methods and approaches that can be used to assess the employment impact of policies, investments or other interventions. It describes the objectives, pros and cons of each method and elaborates on the type of questions each method can help to answer.

Read more

The [Reference guide for Employment Impact Assessment](#) can be downloaded on ILO's website.

TOOL: Impact assessment tool. A tool for integrating climate and environment, gender equality (including accessibility), and children's rights and youth perspectives

Author or Publisher

Nordic Council of Ministers

Year of publication

2024

Description

This impact assessment tool aims to help identify potential positive and negative effects of a particular activity on 1) the environment and climate, 2) equality and accessibility and 3) children and young people. The tool is based on a series of questions that shall ideally be discussed in a team to spark discussion and provide new insights that can be used to refine a planned activity.

Read more

The tool [Impact Assessment Tool: A tool for integrating climate and environment, gender equality \(including accessibility\), and children's rights and youth perspectives](#) is available on the Nordic Council of Ministers' website.

The [Rights-based analysis related to children and young people in the Nordic Council of Ministers](#). This tool can help users to analyse a planned activity affects children and young people.

Both tools may be used in conjunction.

TOOL: Intergenerational fairness policy assessment toolkit

Author or Publisher

School of International Futures (Kent, UK)

Year of publication

2020

Description

In collaboration with the Calouste Gulbenkian Foundation, the School of International Futures has developed a tool which can be used to assess the intergenerational fairness of policies. It consists of five stages, each with specific steps, including diagnostics, scenarios, process and a conclusion. Policies are considered fair according to the toolkit if they allow people of all ages to meet their needs and if they meet the needs of present generations without compromising the ability of future generations to meet theirs.

The framework was created for Portuguese and British contexts, but can, according to the authors, be used by other national or local governments, as well as other actors and stakeholders. It can be applied to any type of policy or strategic decision, both in the planning (ex-ante) and evaluation (ex-post) phases.

Read more

Pilot report "[Framework for Intergenerational fairness](#)" (PDF).

[Intergenerational Fairness Policy Assessment Toolkit](#) is available of School of International Futures' website.

TOOL: Just Transition Score

Author or Publisher

Social Progress Imperative

Year of publication

Latest release: 2021-2022

Description

The Just Transition Score is calculated by dividing carbon emissions per capita by the Social Progress Index of a country. The score thereby provides an overall impression of how effective countries are at combining climate mitigation with

delivering social progress for the population. The score is based on 69 indicators and has been calculated for 161 countries.

Read more

More information on the [Just Transition Score](#), the methodology behind it and the most recent country results is available on Social Progress Imperative's website.

TOOL: SDG Synergies

Author or Publisher

Stockholm Environment Institute

Year of publication

2020

Description

The SDG Synergies tool helps policymakers and other actors map and analyse how different policies and measures interact, helping to unlock synergies and identify possible goal conflicts. The tool was originally developed to support the implementation of the Sustainable Development Goals (SDGs), but the authors state that it can be applied to many other policy areas within the field of sustainability and beyond. It is based on a discussion-based scoring process that helps to highlight how different goals and targets interact and create trade-offs. This tool may be useful to map and discuss possible goal conflicts of green transition policies in the Nordic context.

Read more

A user manual for [SDG Synergies Tool](#) by SEI (PDF).

Access to the [SDG Synergies tool](#) on SEI's website (registration required).



Adopt a place-based approach

The impacts of the green transition differ depending on the location. Achieving a just green transition therefore requires integrating place-based perspectives into green transition initiatives to take local characteristics and challenges into account. Local community involvement can help to identify the best approaches and increase the transparency and legitimacy of green transition measures.

Key messages:

- Develop a place-based approach for policies and initiatives.
- Build on local strengths and strategic advantages.
- Empower local communities and stakeholders to co-develop transition policies and local green investments.

What are the challenges?

1. Diverse spatial impacts

The green transition will have varied spatial impacts across the Nordic Region. Communities heavily reliant on carbon-intensive industries are at greater risk of experiencing job losses and economic decline. Conversely, areas with strong potential for green energy production or mining of rare earth metals may see increased investments and job creation. However, those regions and municipalities may also face challenges when it comes to scaling up public services and housing to support a growing working population.^[28] Jobs may not necessarily be created in those regions experiencing job losses from the decline in carbon-intensive activities,

28. ESPON. (2023). *Territorial perspective on green industrialization*. Working paper. Luxembourg: ESPON. Available at: [Working paper Green Industrialisation.pdf \(espon.eu\)](#).

so the green transition risks exacerbating existing regional disparities or creating new ones.^[29]

2. Land use conflicts

Renewable energy projects, such as installation of wind farms or solar panels and mining of rare earth metals, often lead to shifts in local land use patterns. Green investments can therefore create conflicts between achieving environmental goals and respecting the rights and practices of local inhabitants, such as reindeer herding by the Sami people in northern Finland, Norway and Sweden. While monetary compensation may be offered to landowners in the direct impact zone of such installations, that may be perceived as an attempt to silence opposition, leading to discontent.^[30] Navigating such conflicts of interest and developing compromises and solutions are key challenges in the context of the green transition.

3. Lack of involvement of local communities

Decisions and plans for local green investments, such as the establishment of wind farms or mining activities, do not always involve local residents. When communities are not involved from the outset in planning and implementing green transition projects, resistance can emerge, particularly if those projects bring significant changes to the landscape and land use. Additionally, if community participation occurs too late in the decision-making processes or if residents feel their input is not valued, it can lead to feelings of powerlessness and discontent.^[31]

”

There is a conflict of interest with the Sami in the north, but there are also problems in Skåne in southern Sweden. People don't want mines there, but we need these minerals for windmills and batteries. Environmental and local interests are in conflict with the green economy.

- Youth representative

29. Høst, J., Lauritzen, F. & Popp, S. (2020). *A socially sustainable green transition in the Nordic Region. An analysis of the inequality-creating effects of the green transition and the opportunities to promote a socially sustainable green transition*. Nord 2020:056. Copenhagen: Nordic Council of Ministers. Available at: [A SOCIALLY SUSTAINABLE GREEN TRANSITION IN THE NORDIC REGION \(norden.org\)](https://norden.org/publications/a-socially-sustainable-green-transition-in-the-nordic-region).

30. Salonen, H. (2024). *Between hand-outs and stand-outs: Opportunities for policy support for just green transitions*. Nordregio Policy Brief 2024:1. Stockholm: Nordregio. Available at: <https://pub.nordregio.org/pb-2024-1-Between-hand-outs-and-stand-outs/index.html>.

31. Salonen, H. (2024). *Between hand-outs and stand-outs: Opportunities for policy support for just green transitions*. Nordregio Policy Brief 2024:1. Stockholm: Nordregio. Available at: <https://pub.nordregio.org/pb-2024-1-Between-hand-outs-and-stand-outs/index.html>.

What can *policymakers* do?

1: Develop place-based action plans

A just green transition relies on policies that take regional differences across the Nordic Region into account. Adopt place-based action plans to analyse transparently the potential impact of the green transition on local economies and communities, commit to mitigating adverse impacts and ensure benefits for the local communities.^[32] Action plans should also identify approaches to diversify and transform the local economy by building on strengths and strategic advantages through smart specialisation. Measures could include targeted industrial policies, tax incentives, subsidies, investments and other financial mechanisms to support sustainable businesses.^[33] Strengthening local networks between companies, educational institutions and research organisations, labour unions and local public authorities can enable opportunities for sustainable innovation and entrepreneurship.^[34] Action plans in communities benefitting from green investment and job creation should also include planning for population growth and increased demand for public services, housing and infrastructure, while communities expecting a reduction in population size will need to plan how to address that issue.

”

When Finland is trying to get rid of peat production it will negatively impact the employment of young people. But if we can create new jobs in restoration for example, those people could be employed back.

- Youth representative

32. Salonen, H. (2024). *Between hand-outs and stand-outs: Opportunities for policy support for just green transitions*. Nordregio policy brief 2024:1. Stockholm: Nordregio. Accessible at: <https://pub.nordregio.org/pb-2024-1-Between-hand-outs-and-stand-outs/index.html>.

33. Tavonvunchai, N., Coutiño, A.M., Reymond, A., Halonen, M., Moisio, M., Simanainen, M., Peltomiemi, S., Gustafsson, M. & Stadelmann, M. (2022). *Financial instruments to support a green economic recovery post-COVID-19*. Copenhagen: Nordic Council of Ministers. Available at: [FULLTEXT02.pdf \(diva-portal.org\)](#).

34. Climate Strategies. (2018). *Just transition for all – Analytical evidence. Background materials for a side-event on 3.12.2018 at the COP24*. Available at: <https://climatestrategies.org/wp-content/uploads/2018/10/brochure-WEB.pdf>.

2: Ensure local quality-of-life benefits

To enhance a just green transition, place-based action plans should also include measures to improve the local quality of life. That could, for example, include investments in public transport and broadband coverage to improve connectivity, public services related to health, education and safety, as well as investments in green areas, culture and social spaces that can boost wellbeing and local resilience.^[35]

Action plans could also consider skills and training programmes for local populations to enable them to be educated in fields required by local industries with development potential and thereby increase their employment opportunities (see the “[Invest in inclusive reskilling and upskilling](#)” priority area). Upskilling and reskilling opportunities should not be restricted to people working in local carbon-heavy industries and should instead be open to all residents to maximise the impact.^[36]

Where green transition initiatives require heavy land use and significant landscape changes to local areas, both landowners and impacted communities often receive some form of monetary compensation. Nonetheless, such funds can be perceived as handouts and cause divisions and mistrust in communities. Compensation packages should be designed by impacted communities via participatory negotiation to address their specific needs and preferences, ensuring a fairer distribution of benefits and fostering greater community acceptance and support.^[37]

3: Ensure broad commitment

Place-based action plans should be based on a broad mandate to ensure continuity across electoral cycles and changes in government. It is recommended to establish cooperation across national, regional and/or local public authorities, ministries and agencies and involve representatives from finance, planning, transport, health, education and social sectors as required. Place-based leadership is important to ensure policy coherence and mainstreaming across sectors and actors, and good governance includes clarity of roles and responsibilities. A unit or agency could be tasked with coordinating and spearheading the just transition agenda.^[38]

35. Cahill, B. & Allen, M.M. (2021). *Pathways for just transitions. Gender responsive policies & place based investment*. Center for Strategic and International Studies and Climate Investment Funds. Available at: [jti_pathways_report_web.pdf \(cif.org\)](#).

36. Strambo, C. & Thazin Aung, M. (2019). *Five lessons from past mining closures*. SEI Feature. Available at: [Five lessons from past mining closures | SEI](#).

37. Salonen, H. (2024). *Between hand-outs and stand-outs: Opportunities for policy support for just green transitions*. Nordregio Policy Brief 2024:1. Stockholm: Nordregio. Available at: <https://pub.nordregio.org/pb-2024-1-Between-hand-outs-and-stand-outs/index.html>.

38. OECD. (2019). *Regions in industrial transition: Policies for people and places*. OECD Regional Development Studies. Paris: OECD Publishing. Available at: <https://doi.org/10.1787/c76ec2a1-en>.

It is equally important to involve local residents, civil society organisations, social partners, education providers and other relevant local stakeholders as early as possible in the process of creating place-based action plans (see the "[Engage people](#)" priority area). Their involvement can help to identify challenges as well as local strengths and opportunities, find solutions and compromises, develop narratives for sustainable change and help gain trust and support for the change (see the "[Develop a vision](#)" priority area).^[39]

4: Foster good-quality green jobs

Nordic governments can foster the green transition through green and social public procurement, by investing in green innovation and infrastructure projects and by supporting low-carbon businesses. Importantly, green jobs should offer social protection, good working conditions, equal opportunities and decent pay. Care should be taken that green jobs also benefit women, people with disabilities, young people and other underrepresented groups on the Nordic labour markets.^[40]

”

Support young entrepreneurs who are developing sustainable businesses and innovations. Provide financial assistance, mentoring and networking opportunities to help them succeed in the green economy.

- Youth representative

39. OECD. (2017). *Investing in climate, investing in growth*. Paris: OECD Publishing; Cahill, B. & Allen, M.M. (2021). *Pathways for just transitions. Gender responsive policies & place based investment*. Center for Strategic and International Studies and Climate Investment Funds. Available at: [jti_pathways_report_web.pdf \(cif.org\)](#).

40. International Labour Organization. (2016). *What is a green job?* Available at: [What is a green job? | International Labour Organization \(ilo.org\)](#); Løvslett Danbolt, I. (2023). *Bridging the green jobs divide: Nordic gender barriers and opportunities in the spotlight*. Nord 2023:036. Copenhagen: Nordic Council of Ministers. Available at: [nord2023-036 \(norden.org\)](#).

Read more about how to adopt a place-based approach

Cahill, B. & Allen, M.M. (2021). *Pathways for just transitions. Gender responsive policies & place based investments*. Just Transition Initiative. Available at: https://www.cif.org/sites/cif_enc/files/knowledge-documents/jti_pathways_report_web.pdf.

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European Commission. (2023). *Approaches for designing SME support schemes. A catalogue for just transition regions*. Bruxelles: European Commission. Available at: [Approaches for designing SME support schemes: A catalogue for just transition regions \(europa.eu\)](https://ec.europa.eu/economy_finance/Approaches_for_designing_SME_support_schemes_A_catalogue_for_just_transition_regions_en).

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OECD. (2019). *Regions in industrial transition: Policies for people and places*. OECD Regional Development Studies. Paris: OECD Publishing. Available at: <https://doi.org/10.1787/c76ec2a1-en>.

OECD. (2023). *A territorial approach to climate action and resilience*. OECD Regional Development Studies. Paris: OECD Publishing. Available at: [A Territorial Approach to Climate Action and Resilience | OECD](https://www.oecd.org/publications/a-territorial-approach-to-climate-action-and-resilience/).

Rodríguez-Pose, A. & Bartalucci, F. (2023). *Regional vulnerability to the green transition*. Single Market Economics Paper 16. Bruxelles: European Commission. Available at: [Regional vulnerability to the green transition - European Commission \(europa.eu\)](https://ec.europa.eu/economy_finance/Regional_vulnerability_to_the_green_transition_European_Commission_en).

Salonen, H. & Tomrén, L. (2024). *Can local value creation induce a sense of justice during green transitions? A study of six rural areas in Denmark, Finland, and Norway*. Nordregio Report 2023:9. Stockholm: Nordregio. Available at: <https://pub.nordregio.org/r-2023-9-can-local-value-creation-induce-a-sense-of-justice-during-green-transitions/index.html>.

Skubida, A., Sarna, K., Binarová, N. & Głowacki, K. (2022). *How to break down the barriers to transformation*. WiseEuropa, Impact Hub and Climate-KIC. Available at: [barriers-to-transformation.pdf \(climate-kic.org\)](https://www.climate-kic.org/publications/barriers-to-transformation.pdf).



This is how policymakers can adopt a place-based approach

Draw inspiration from real-life **examples** of countries and regions that have developed new approaches to assess the impacts of green transition policies. We also highlight interesting **tools** that can help to assess the social and employment impacts of policies and initiatives.

EXAMPLE: Bornholm Havvind

Location

Bornholm (Denmark)

Description

Initiated in 2019, Bornholm Havvind is a citizen-driven and locally initiated project that aims to construct an offshore, near-coast windmill park outside of Bornholm (100 MW). Local ownership is fundamental to the initiative, with 100% of the shares owned by the Bornholm community, although not exclusively limited to residents registered in the municipality. That approach also extends to local associations, industries and businesses. The founders of Bornholm Havvind believe that local ownership fosters motivation for change, enhances local acceptance and strengthens community ties, thereby supporting a more equitable and inclusive energy transition.

Bornholm Havvind successfully secured approximately DKK 400,000 from the EU's New Energy Solutions Optimised for Islands programme to fund further development. The initiative connected with a team of technical experts, who agreed to work at a reduced rate. They conducted a comprehensive desk study on the project's economic viability and its technical, environmental and landscape-related feasibility, which was presented at a public meeting in April 2022. Finally, in November 2022, the Citizen Energy Community (CEC) was established in accordance with EU Directive 2019/944 and relevant national and local legislation.

Outcome

By 2024, Bornholms Havvind had been active for five years without installing any windmills. Its plan was rejected by authorities in October 2023, a decision currently under appeal at the Energy Appeal Court. That highlights the lengthy process of building consensus and the need for dedicated individuals to drive the project forward. Patience and long-term vision are essential, along with the involvement of many committed stakeholders. Nevertheless, the realisation of such projects is not guaranteed due to the extensive legal processes associated with land and water use, where large-scale changes are often irreversible, underscoring the importance of careful planning for the benefit of people and the planet.

Read more

A [digital story about Bornholm Havvind](#) is available on Nordregio's site.

EXAMPLE: GreenLab Skive

Location

Skive (Denmark)

Description

GreenLab is a green industrial park, technology and research hub, based on a circular economy model and renewable energy utilisation. Created to foster new investment and innovation in a rural area that was facing population decline, the

park now hosts eight companies focusing on energy storage and resource efficiency. All companies benefit from internally sourced renewable energy, which is used to produce green goods such as electro fuel. The project has also created research and education programmes and collaborates with universities across Denmark.

Skive municipality and other leading actors organised many activities from the outset to involve the local population and local businesses in the project, including inviting people to view the building site long before the work began, organising community events, co-creating ideas and informing residents about the goals of the project. Residents can also become co-owners of the biogas plant.

Outcome

The park has created economic, social and environmental benefits for the local community and businesses, including the creation of 100 permanent jobs. The tangible benefits and intensive engagement of local stakeholders have secured social acceptance of the project among the local population. The "Skive model" has succeeded in changing the image of the region from one that was suffering from population decline to a rural frontrunner in green innovation.

Read more

[Website of GreenLab.](#)

A [digital story describing the GreenLab initiative](#) is available on Nordregio's website.

EXAMPLE: Just Transitions Unit

Location

New Zealand

Description

The government of New Zealand established a Just Transitions Unit in May 2018. Based within the Ministry of Business, Innovation and Employment, it has been

given the mandate of making the transition towards a low-emissions economy fair, equitable and inclusive. The main work of the unit involves forming partnerships that

- 1) build an understanding of potential pathways for a just green transition,
- 2) identify, create and support new jobs and skills in the transition,
- 3) understand the impact of the transition on specific communities, sectors and regions,
- 4) make choices for managing such impacts in a fair and inclusive manner.

The Just Transitions Unit focused on the Taranaki region. Given its long history of oil and gas exploitation, that region is more vulnerable to the country's decision to stop offshore oil and gas exploration. The Just Transitions Unit established the Taranaki Transition Lead Group, made up of representatives from government, business, labour, education and the Taranaki community. It facilitated just under 30 workshops in the region, including one event specifically for young people. It also organised a creative competition for children and young people to describe their vision for 2050.

Outcome

The material from those processes was fed into a draft Taranaki 2050 Roadmap. It was presented at a National Just Transition Summit and finalised in 2019. The lead group then organised another round of workshops to create transition pathway action plans, for example on energy. Projects to implement the action plans are underway.

Read more

[Taranaki vision and strategy](#) is available on Taranaki's website.

EXAMPLE: Just Transitions Unit

Location

Spain

Description

In 2019, the Spanish government agreed on a strategic framework to modernise and decarbonise the economy with the goal of achieving carbon neutrality in 2050. The strategic framework includes a Just Transition Strategy that aims to ensure that no groups or regions are left behind in the process. Since 2022, a Climate Change and Energy Transition Law obliges the Spanish government to develop and approve Just Transition Strategies every five years to govern the decarbonisation process.

The Just Transition Strategy foresees that regions which may experience negative impacts during the green transition shall develop Just Transition Agreements, including regional action plans with clear goals and development priorities. The main goal of the agreements is to support vulnerable sectors and groups, create employment and promote diversification. They are concluded between several ministries and other public authorities and are intended to engage all levels of governance, from the national to the local. The transition agreements are to be developed in cooperation with as many stakeholders as possible using Social Dialogue Roundtables, including with labour unions, businesses and young people. In 2020, the government founded a Just Transition Institute to provide technical support for drafting and implementing the Transition Agreements.

Outcome

Just Transition Agreements have been concluded for 15 areas in Spain, involving more than 2,000 contributions from different social actors. Public participation is continuing, with follow-up meetings being held in the various regions. A range of support measures have been set up for workers, especially those affected by coal mine closures, including training and reskilling for green industries, job banks to match workers to new jobs, early retirement schemes for older workers and economic reactivation measures.

Read more

[Strategy for "The Just Transition Strategy within the Strategic Energy and Climate Framework"](#) (PDF).

Report "[Spain, 4 years towards a just energy transition](#)" describing Spain's work on the Just Transition Strategy (PDF).

[Spain's Just Transition Institute's website](#) (in Spanish).

TOOL: Inclusive Community Engagement Playbook

Author or publisher

C40

Year of publication

2019

Description

This publication offers a range of ideas, methods and tools on how to identify priority stakeholders at local level and involve them in inclusive climate action planning. The playbook is written for urban contexts, but many of the proposed strategies should also be useful for engaging communities in rural areas. In addition, the publication includes both case studies and submodules that offer ideas on how to engage specific social groups such as children, young people, older adults and labour unions.

Read more

The "[Inclusive Community Engagement playbook](#)".

[A summary of the playbook](#) on C40's website.

TOOL: Just transition platform: Case studies

Author or Publisher

European Commission

Year of publication

n.d.

Description

This website contains a list of good practices from around Europe on how to support regional and local stakeholders in implementing a just transition. Each example is described in a separate short publication, offering many ideas on how to govern successful green transition initiatives at regional or local level.

Read more

[The list of case studies](#) on European Commission's website.

TOOL: Governance of transitions toolkit

Author or Publisher

European Commission

Year of publication

2020

Description

This toolkit provides practical information and approaches as to how to govern regional decarbonisation and economic diversification processes. It is built around four topics:

1. Governance model
2. Stakeholder engagement and partnerships
3. The role of civil society
4. The role of social dialogue

The toolkit has been designed for regions transitioning away from coal mining and coal-based energy generation. Nonetheless, many of the strategies, examples and ideas should be relevant for other types of transition regions as well.

Read more

Link to the [Governance of transitions toolkit – Platform for coal regions in transition](#) on European Commission's website.

TOOL: Considering gender in regional transformations. A toolkit for just transition regions

Author or Publisher

European Commission

Year of publication

2023

Description

This toolkit highlights different challenges that women and men face in regions affected by the green transition. It also defines key action areas and strategies that can be used to promote gender equality during the transition. Interesting real-life examples are mentioned throughout the report.

The European Commission has published similar toolkits that address:

1. how to involve and plan for older adults in regional transformations,
2. how to integrate young people into just transition processes at regional level,
3. how to support households and communities that are adversely affected by the green transition at local level.

Read more

Toolkit on considering gender: [Just Transition Platform](#) on European Commission's website.

Toolkit on how to centre older adults in regional transformations: [Just Transition Platform](#) on European Commission's website.

Toolkit on how to involve young people: [Integrating youth into the just transition process – A case study highlighting good practices](#) on European Commission's website.

Toolkit on how to support households in regional transformations: [Supporting households in regional transformations: A toolkit for just transition regions](#) on European Commission's website.

TOOL: Enabling energy communities. A toolkit for just transition regions

Author or Publisher

European Commission

Year of publication

2023

Description

This toolkit aims to offer guidance to policymakers on the question of whether and how to promote the establishment of energy communities in territories that are focus areas for the green transition. It provides information on what energy communities are, which advantages they offer and which EU rules have to be considered. The toolkit also highlights good examples from across Europe and describes core principles to promote energy communities in just transition contexts.

Read more

Toolkit on [Enabling energy communities – A toolkit for just transition regions](#) on European Commission's website.

TOOL: EU taxonomy for sustainable activities

Author or Publisher

European Commission

Year of publication

2020

Description

The EU taxonomy defines criteria for economic activities that are aligned with the goal to achieve net zero emissions by 2050 as well as other environmental goals. The taxonomy thereby allows public and private actors to identify economic activities that can be considered environmentally sustainable. This information can then support decisions on where to direct investments and can help to prevent greenwashing.

Read more

More information on [EU taxonomy for sustainable activities](#) on European Commission's website.

TOOL: Between hand-outs and stand-outs: Opportunities for policy support for just green transitions

Author or Publisher

Salonen, H.

Year of publication

2024

Description

This policy brief offers a set of recommendations on how to involve local communities in green energy initiatives and foster a sense of local ownership and fairness. The policy brief distinguishes between different phases in the process of developing green projects and provides recommendations on how to make each phase more inclusive and fair.

Read more

Policy brief "[Between hand-outs and stand-outs](#)" on Nordregio's website.

TOOL: Social Impact Management Planning (SIMP) tool

Author or Publisher

Suopajärvi, L., Kantola, A. and Weber, R.

Year of publication

2017

Description

This tool provides step-by-step guidance on how to identify social impacts of large-scale industrial activities in sparsely populated areas. It also provides information on how to manage impacts and develop sustainable compromises regarding land use by involving relevant stakeholders. The SIMP tool includes an analysis of the baseline situation, activities to scope and formulate alternative scenarios and strategies to mitigate negative social impacts and enhance positive impacts. SIMP also includes monitoring and evaluation phases.

Read more

The SIMP tool is described in report "[Local smart specialisation: A step-by-step guide to social impact management in remote communities with resource-based economies](#)" (PDF).

TOOL: The Rural Barometer (Landsbygdsbarometern)

Author or Publisher

Tillväxtverket

Year of publication

n/a

Description

The Rural Barometer helps to highlight the presence of a rural or broader "geographical perspective" within a given organisation. It is based on self-assessment and demonstrates the extent to which a rural/geographical perspective is integrated into an organisation's operations. Additionally, other tools from Tillväxtverket, such as "[Process Analysis](#)" and "[Challenge the urban norm](#)", assist in pinpointing where a rural/geographical perspective can and should be integrated within the given organisation.

Read more

[Landsbygdsbarometern](#) is available on Tillväxtverket's website (in Swedish).

TOOL: Just Transition Toolbox for Coal Regions

Author or Publisher

Wuppertal Institute

Year of publication

2022

Description

This toolbox aims to provide support and inspiration for policymakers and practitioners working on structural change and the green transition in coal regions. The toolbox comprises five key sections, focusing on issues including the role of strategies, effective governance models and skills development. While the Nordic countries do not have coal-dependent regional economies, many of the strategies and good practices that are presented in this comprehensive toolbox may be useful

for Nordic regions that are transitioning out of other types of carbon- or energy-intensive industries.

Read more

The digital toolbox [Just Transition Toolbox for Coal Regions](#) on Wuppertal Institute's website.

[A PDF version of the toolbox materials.](#)



Invest in inclusive reskilling and upskilling

New jobs will emerge during the green transition while others – especially in fossil fuel- and energy-intensive industries – will be lost or undergo major transformations. The green transition therefore offers many opportunities but will likely also bring challenges for employees and communities that are more dependent on carbon-heavy industries.^[41] In order to involve all groups in the green transition, inclusive training and reskilling programmes are essential to provide the skills and qualifications required in a greener economy.^[42]

Key messages:

- Offer continuous opportunities for reskilling and upskilling for all.
- Ensure that educational programmes convey the skills and competences required by the transforming Nordic economies.
- Ensure that educational offers are inclusive and benefit all of society, with a focus on marginalised groups.

What are the challenges?

1. Risk of job losses and social exclusion

The green transition may create new inequalities between workers possessing skills profiles that are in demand in a green economy and workers with skills and expertise that are no longer required. Reskilling and upskilling is essential, with lower-educated workers and those working in polluting industries likely requiring

41. Løvslett Danbolt, I. (2023). *Bridging the green jobs divide: Nordic gender barriers and opportunities in the spotlight*. Nord 2023:036. Copenhagen: Nordic Council of Ministers. Available at: [nord2023-036 \(norden.org\)](https://norden.org/publications/nord2023-036).

42. Li, L. (2022). *Reskilling and upskilling the future-ready workforce for industry 4.0 and beyond*. Information Systems Frontiers. Available at: [Reskilling and Upskilling the Future-ready Workforce for Industry 4.0 and Beyond | Information Systems Frontiers \(springer.com\)](https://www.springer.com/9789811060000).

more intensive skills development.^[43]

People who are long-term unemployed or inactive, people with disabilities and immigrants are already in a disadvantaged position on the Nordic labour markets.^[44] Women are underrepresented in green sectors.^[45] Such inequalities may increase if they are not proactively addressed through upskilling and reskilling programmes.

2. Lack of knowledge about spatial and sectoral impacts

The green transition implies large-scale investments in green industries and energy, as well as the infrastructure to support such developments. Such investments are often concentrated in areas with natural resources or the necessary human capital. Sectors in which jobs may be lost in the transition are often located in rural areas and/or around specific production plants. If new green jobs are not created in such areas, spatial inequalities in economic development opportunities may increase.^[46]

While there is broad agreement that the green transition will have significant effects on the Nordic labour markets, there is a lack of knowledge about concrete impacts in specific sectors and regions. Estimates of the number of jobs which may be created, lost, change or relocated are rarely available, making it difficult to plan ahead and adjust. There is also insufficient knowledge about the competences and skills required in a greener economy.^[47]

3. Lack of proactive planning for reskilling and upskilling

There is a lack of academic, vocational and on-the-job training programmes to support the labour force in gaining the skills and qualifications that are needed in a greener economy. The curricula of the relevant programmes are often insufficiently suited to the skills needs in green sectors and the adjustment of the programmes to changing labour market needs is too slow. The green transition is a long-term process and reskilling and upskilling programmes will have to be developed and refined on an ongoing basis.^[48]

43. Høst, J., Lauritzen, F. & Popp, S. (2020). *A socially sustainable green transition in the Nordic Region. An analysis of the inequality-creating effects of the green transition and the opportunities to promote a socially sustainable green transition*. Nord 2020:056. Copenhagen: Nordic Council of Ministers. Available at: [A SOCIALLY SUSTAINABLE GREEN TRANSITION IN THE NORDIC REGION \(norden.org\)](https://norden.org/publications/2020/056).

44. ILO GBDN, Fundación Once & KPMG. (2019). *Making the future of work inclusive of people with disabilities*. Available at: [Making the future of work inclusive of persons with disabilities \(disabilityhub.eu\)](https://disabilityhub.eu/publications/making-the-future-of-work-inclusive-of-persons-with-disabilities).

45. Sand, J. (2023). *Gender perspective on green jobs in the Nordic Region*. Copenhagen: Nordic Council of Ministers. Available at: nord2023-011.pdf.

46. Atteridge, A. & Strambo, C. (2020). *Seven principles to realize a just transition to a low-carbon economy*. Stockholm: Stockholm Environment Institute. Available at: <https://www.sei.org/wp-content/uploads/2020/06/seven-principles-for-a-just-transition.pdf>.

47. Council of the Nordic Trade Unions (NFS), Friedrich-Ebert-Stiftung (FES) and German Trade Union Confederation (DBG). (2021). *The road towards a carbon-free society. A Nordic-German Trade Union Cooperation on Just Transition*. Stockholm: Friedrich-Ebert-Stiftung. Available at: <https://library.fes.de/pdf-files/bueros/stockholm/17520.pdf>.

48. International Labour Organization. (2019). *Skills for a greener future: A global view based on 32 countries*. Geneva: ILO. Available here: [Skills for a greener future: a global view | International Labour Organization \(ilo.org\)](https://www.ilo.org/publications/0/0/20190101/00000/00000/00000.pdf).



Level of education is important. The winners appear to be the most educated. It is not easy for the least educated to switch jobs.

- Labour union representative

What can *policymakers* do?

1: Increase knowledge about labour market impacts and skills needs in a green economy

Nordic governments should aim to increase knowledge about how the green transition impacts the Nordic labour markets by supporting analyses and forecasts on employment impacts at regional and sectoral level. Policymakers should also support research on changing skills requirements and how those relate to the existing skills of the labour forces in the Nordic countries. That should include a focus on gaps and mismatches at regional level and in sectors of the economy that are of particular importance in the green economy. Since the green transition is a gradual process that will take place over many years, regular research updates will likely be required.^[49]

2: Invest in inclusive education, reskilling and upskilling

Developing and maintaining upskilling and reskilling programmes during the green transition requires a strong and stable commitment from the Nordic governments, including the necessary financial resources. Educational programmes can form part of formal programmes for vocational education and training (VET) but may also include on-the-job training or short module-based courses. Training programmes should be regularly evaluated and updated to ensure that they correspond to changing skills demands and are effective.^[50]

49. Løvslett Danbolt, I. (2023). *Bridging the green jobs divide: Nordic gender barriers and opportunities in the spotlight*. Nord 2023:036. Copenhagen: Nordic Council of Ministers. Available at: [nord2023-036 \(norden.org\)](https://norden.org/publications/nord2023-036).

50. Erola, J., Mills, M. & Solga, H. (2023). *Beyond education and training – How can we adapt to future needs of local labour markets?* Population and Policy Brief no. 42. Berlin: Population Europe. Available at: [pb_no.42_web-02_20.11.pdf \(population-europe.eu\)](https://population-europe.eu/publications/pb_no.42_web-02_20.11.pdf); International Labour Organization & OECD. (2022). *Promoting a just and inclusive green transition. Joint ILO-OECD background paper prepared for the German G7 presidency*. Available at: <https://www.ilo.org/media/368196/download>.

To ensure a just green transition, it is important that programmes are inclusive and accessible for all. They should specifically target groups on the Nordic labour markets that face barriers to employment, such as people with disabilities, migrants, low-skilled employees and people with weak labour market attachment.^[51] Gender equality also needs to be promoted, for example via scholarships, mentoring schemes or support services, as women are often underrepresented in green technological or scientific jobs.^[52] Participants may also need financial support while they undergo education or training.

To involve younger generations, education about the green transition, climate issues and sustainability should be included in school curricula. That can help young people increase their opportunities on the transforming Nordic labour markets, as well as challenge gender stereotypes with respect to subject choices.^[53]

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Invest in sustainable education and skills development programmes to equip young people with the knowledge and expertise needed for green jobs and eco-friendly practices, to reduce the risk of job displacement.

- Youth representative

3: Involve labour market stakeholders

To build on the strong involvement of the social partners under the Nordic model for the labour market, the development of upskilling and reskilling programmes should be designed collaboratively by public agencies, labour unions and industry organisations. Civil society organisations representing marginalised groups, business sector representatives and education and training providers should also be involved. Broad collaboration is key to ensure that training courses convey the skills and competences that are required by green industries. Ideally, the programmes

51. Løvslett Danbolt, I. (2023). *Bridging the green jobs divide: Nordic gender barriers and opportunities in the spotlight*. Nord 2023:036. Copenhagen: Nordic Council of Ministers. Available at: [nord2023-036 \(norden.org\)](#); Atteridge, A. & Strambo, C. (2020). *Seven principles to realize a just transition to a low-carbon economy*. Stockholm: Stockholm Environment Institute. Available at: [seven-principles-for-a-just-transition.pdf \(sei.org\)](#).

52. European Commission. (2023). *Employment and social developments in Europe. Addressing labour shortages and skills gaps in the EU*. Brussels: European Commission. Available at: [Employment and social developments in Europe 2023 - Publications Office of the EU \(europa.eu\)](#).

53. European Commission. (2023). *Employment and social developments in Europe. Addressing labour shortages and skills gaps in the EU*. Brussels: European Commission. Available at: [Employment and social developments in Europe 2023 - Publications Office of the EU \(europa.eu\)](#).

offered should also be aligned with regional and local contexts so that training content can reflect specific territorial labour market needs.^[54]

4: Strengthen the welfare safety net

Offering skills development is one approach to supporting displaced workers during the green transition as it increases their chances of accessing emerging green jobs. Nonetheless, additional support is likely required, such as individual job placement support, relocation assistance and counselling. Nordic policymakers could also map skill sets of fossil-fuel workers and match them to labour needs in emerging green sectors to support re-employment.^[55] For displaced workers who are close to retirement age, early retirement allowances may be an option, while unemployment benefits and wage insurance are needed for younger workers as they transition between jobs. Such measures should, however, not be so generous that they disincentivise employees from seeking new employment.^[56]

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I think a strong welfare is an important element of the green transition. We are still moving in the wrong direction with the welfare system, which needs to change in order for people to be more secure during the transition.

- Labour union representative

54. Sánchez Gassen, N. & Ström Hildestrand, Å. (2022). *Combatting long-term unemployment among immigrants beyond the Covid-19 pandemic*. Nord 2022:021. Copenhagen: Nordic Council of Ministers. Available at: <https://pub.norden.org/nord2022-021/#>.

55. Thazin Aung, M. & Strambo, C. (2020). *Distributional impacts of mining transitions: Learning from the past*. Stockholm: Stockholm Environment Institute. Available at: [distributional-impacts-of-mining-transitions-1.pdf](https://www.sei.org/publications/distributional-impacts-of-mining-transitions-1.pdf) ([sei.org](https://www.sei.org)).

56. OECD. (2022). *Equitable framework and finance for extractive-based countries in transition (EFFECT)*. OECD Development Policy Tools. Paris: OECD Publishing. Available at: https://www.oecd-ilibrary.org/development/equitable-framework-and-finance-for-extractive-based-countries-in-transition-effect_7871c0ad-en.

Read more about how to invest in inclusive reskilling and upskilling

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This is how policymakers can invest in inclusive reskilling and upskilling

This section highlights **examples** of how various countries have supported workers during the green transition or developed upskilling and reskilling programmes. We also include **tools** which describe additional good practices and offer hands-on guidance.

EXAMPLE: Enhancing vocational education and training (VET) for the green transition

Location

Denmark

Description

In 2024, the Ministry of Children and Education launched a new agreement to enhance vocational education, emphasising green competences. The initiative includes funding for work-based learning, teacher upskilling in green skills, promoting learning mobility and incorporating a green component into VET students' final exams. It also strengthens the role of knowledge centres with the aim of preparing students for the future green job market.

Outcome

Over the next four years, EUR 28 million (DKK 210 million) will be invested in updating and acquiring state-of-the-art equipment for VET schools to ensure that they are well-equipped. Additionally, EUR 12 million (DKK 90 million) will be allocated to upskill teachers in green competences. That training will equip educators to teach the skills necessary for green jobs effectively, aligning student instruction with current environmental standards and practices.

Read more

[A description of the initiative](#) can be found on Cedefop's website.

EXAMPLE : The Committee of Skills Needs (Kompetansebehovsutvalget)

Location

Norway

Description

The Committee of Skills Needs was founded in 2017 and was mandated to deliver assessments of Norway's future competence needs. The committee is composed of representatives of the social partners, researchers and county authorities. The committee's assessments guide strategic planning and decision-making by public authorities regarding skills development and the workforce at national and regional level. In 2023, the Committee published a report on skills needs during the green transition, with a focus on the petroleum sector, the renewable energy sector and the public sector.

Outcome

The committee and its work are described as an interesting practice in a recent OECD report on skills needs for the green transition. According to that report, no

major skills initiatives related to the green transition have been implemented so far, partly due to the relatively recent developments in the field.

Read more

Website of the Committee of Skills Needs (in Norwegian): [Kompetansebehovsutvalget](#).

Report "[Kompetansebehovsutvalget \(2023\): Fremtidige kompetansebehov: Utfordringer for grønn omstilling i arbeidslivet](#)" on skills needs for the green transition (in Norwegian) (PDF).

Description of the initiative in the OECD report "[Assessing and anticipating skills for the green transition: Unlocking talent for a sustainable future](#)".

EXAMPLE : Educational support for reskilling (Omställningsstudiestöd)

Location

Sweden

Description

In 2022, the social partners in Sweden agreed on two national agreements for training, reskilling and upskilling. The agreements give employees and unemployed people who have worked for a minimum of eight years during the last 14 years the right to participate in training activities and to receive financial support during that period. Some additional requirements and conditions apply. Participants will receive 80% of their previous salary, up to a limit of SEK 5,275 per week. In addition, a loan of up to SEK 3,426 may be granted. The financial support is provided for a maximum period of 44 weeks (or longer if the studies are part-time).

The goal of the initiative is to improve labour mobility, enhance the skills and employability of the workforce and address labour shortages. The training should therefore convey skills and competences that are in demand on the Swedish labour market. "Transition organisations" run by the social partners help with new job placements or the transition to self-employment.

Outcome

Almost 5,200 persons took part in the initiative and participated in upskilling or reskilling during the first year. However, more than 15,000 people had their applications for financial support rejected because they did not fulfil the required conditions.

Read more

[Information on the initiative](#) (in Swedish) from CSN.

[A description of the initiative can be found here](#) "Sweden: Ground-breaking agreements on education support to enable a Just Transition" (in English) on industriAll's website

EXAMPLE : Future Skills Council and Centre

Location

Canada

Description

In 2019, the Government of Canada established a Future Skills Council and a Future Skills Centre to support the reskilling of its labour force.

The Future Skills Council is an advisory body consisting of multi-sectoral experts on skills development. Its members draw on their extensive networks and contacts to advise on emerging skills trends and priority areas for skills development.

The Future Skills Centre is an applied research organisation that conducts a range of projects. Its work includes analysis of skills trends and identification of good practices and solutions to upskill and reskill Canada's labour force to meet the needs of the changing economy.

Both organisations also promote access to training and equal labour market access, with a focus on underrepresented groups. A podcast series informs the public about trends and challenges in the world of work.

Outcome

A recent evaluation concluded that the initiative was successful in engaging a pan-Canadian network of stakeholders and experts in the field of skills development and that it also developed knowledge for the skills development ecosystem. However, it was too early to assess the usefulness of the knowledge produced and the impacts of diverse policies and programmes. The evaluators proposed several recommendations for improvement of the initiative, which were accepted by the leaders of the Future Skills initiative.

Read more

Website of the initiative [Future Skills](#) on Government of Canada's website.

Description of the initiative: [Securing the right skills for the future of work through social dialogue](#) (PDF).

The results and [Evaluation of the Future Skills programme](#) is available of Government of Canada's website.

EXAMPLE : Taskforce on Just Transition for Canadian Coal Power Workers and Communities

Location

Canada

Description

With the goal of a coal power phase-out by 2030, the Canadian government established a Taskforce on Just Transition for Canadian Coal Power Workers and Communities in 2018. The Taskforce was asked to provide knowledge, options and recommendations to the Ministry of Environment and Climate Change on how to implement a just transition for workers and communities who are directly affected by the coal power phase-out.

The taskforce consisted of nine members and two chairpersons. It was made up of representatives from the Canadian Labour Congress, the United Steelworkers

Union, unions for coal power generating facilities (Unifor) and skilled trades related to coal power (IBEW), municipalities, NGOs, electricity companies and sustainable development experts.

Over a period of nine months, the taskforce hosted several meetings and engagement sessions with affected communities, stakeholders and the public. They also visited several generating stations and coal mines as part of their research into development of recommendations.

Outcome

Based on their engagement with local coal workers and communities, the taskforce presented a report containing ten recommendations for the Minister of the Environment and Climate Change. Those include, for example, the recommendation to establish locally-driven transition centres in affected communities, to create a pension bridge for those choosing early retirement and to create a job bank to help coal workers find new jobs. The government intends to implement those recommendations within the framework of its proposed Just Transition Act.

Read more

[About the taskforce](#) on Just Transition for Canadian Coal Power Workers and Communities on Government of Canada's website.

EXAMPLE: Reskilling4Employment

Location

European Union

Description

The Reskilling4Employment initiative was launched in 2021 by the European Round Table for Industry (ERT), which brings together CEOs and chairpersons from large European companies. The initiative aims to stimulate public-private partnerships to reskill workers who are unemployed or at risk of unemployment. Reskilling is

intended to provide skills and competences related to the green and digital transition, with curricula adapted to the specific needs in each country and sector.

Outcome

Pilot projects were conducted in Portugal, Spain and Sweden. In Sweden, a pilot project was conducted with involvement of the Volvo Group, targeting young people aged between 18 and 23. A total of 80% of participants moved on to employment. The initiative is now scaling up and starting pilot projects in further EU Member States. The project aims to reskill five million people in Europe by 2030.

Read more

[Reskilling 4 Employment's](#) website.

[A description of the initiative](#) from the European Commission (PDF).

EXAMPLE: Commission on Growth, Structural Change and Employment

Location

Germany

Description

In 2018, the Federal Government of Germany established the Commission on Growth, Structural Change and Employment with the goal of ending coal-fired power generation by 2038. The Commission brought together representatives from the energy sector, mining regions, trade unions, environmental NGOs, the scientific community, citizens and the parliament. Technical experts provided the commission with input and expertise. It sought to build consensus around how to phase out coal while minimising negative social and economic effects to affected communities.

The commission held ten plenary meetings and conducted three field trips to

mining regions between June 2018 and January 2019. In addition, several working groups met to discuss topics such as the energy industry, climate targets, economic development and jobs.

Outcome

Following an eight-month period of discussions and plenary sessions, the commission adopted the final report on proposals outlining how Germany can reduce and ultimately end coal-fired power generation in a way that accounts for the needs and interests of affected communities, in particular those in lignite mining areas and in the areas where coal-fired power stations are located. The proposals included funding for a number of measures:

- 1) Supporting workers by means of reskilling and other social benefits, including through training, compensation for financial losses, early retirement options and placement in skilled jobs,
- 2) Involving unions in the development of collective agreements for workers' rights and early pensions,
- 3) Balancing energy pricing during the phase-out period,
- 4) Holding dialogues between state governments and residents living in mining regions,
- 5) Compensating power plant operators when closing the power plants.

Since its adoption, 40 billion EUR has been allocated to the phase-out work through a Structural Reinforcement Bill, while 14 billion EUR has been allocated to specific projects in the affected regions and just over 4 billion EUR to power plant operator compensation. The work is supported by wider policies such as the Climate Action Law and the Coal Exit Law.

Read more

Final report "[Commission on Growth, Structural Change and Employment](#)" (PDF).

About the [Commission on Growth, Structural Change and Employment](#) on World Resources Institute's website.

EXAMPLE: Climate Change (Emissions Reduction Targets) (Scotland) Act 2019

Location

Scotland

Description

In 2019, the Scottish Government defined the goal of achieving carbon neutrality by 2045. Just transition principles were identified as central to achieving that goal and were enshrined in the law.

The Act mandates that climate policies must describe how they contribute to a just transition and the sustainability goals of the UN 2030 Agenda. Policymakers must also assess the employment-related impacts and spatial impacts of proposed climate measures and set out mitigation measures to facilitate the green transition for workers, employers and communities. In addition, the Act requires that progress be measured and evaluated.

Outcome

While the ambitions of the Scottish climate goals have been described as laudable, the government has fallen behind in reaching its emissions reduction goals. Despite those shortcomings, the aim of estimating employment and regional impacts of climate policies could be an interesting example for more systematic employment assessments for the Nordic countries as well.

Read more

[The text of the Act](#) is available on legislation.gov.uk.

A comment on progress made in the decarbonisation process "[Scotland's 2030 climate goals are no longer credible](#)" is available on The Climate Change Committee's website.

EXAMPLE: Scottish Oil and Gas Transition Training Fund

Location

Scotland

Description

Due to a drop in oil and gas prices, many jobs were lost in the oil and gas sectors during 2014 and 2017. To support workers who were facing redundancy, the Scottish government launched the Oil and Gas Transition Training Fund. It was approved in February 2016 and ran for a period of three years. It had a budget of GBP 12 million, allocated by the national government.

Workers in the oil and gas sector could receive grants of up to GBP 4,000 to participate in training or reskilling programmes in fields with current or anticipated labour demand.

Outcome

More than 4,200 workers participated in the programme, and nine out of ten were employed as of 2019.

Read more

Description of the fund and its impact: [Scotland: Re-skilling through the Oil and Gas Transition Training Fund](#) on World Resources Institute's website.

EXAMPLE: Green Jobs Taskforce

Location

United Kingdom

Description

In 2020, the ministers from the Department for Business, Energy and Industrial Strategy (BEIS) and the Department for Education (DfE) convened the Green Jobs Taskforce to advise the government on how the UK could deliver on the ambition to create two million green jobs by 2030 and support industries and workers during the transition. The taskforce discussed:

- 1) Skills needed to drive a green recovery from the COVID-19 pandemic,
- 2) Skills needed to reach net zero GHG emissions by 2050,
- 3) How to ensure green jobs are good and accessible jobs,
- 4) How workers in high-carbon sectors can be supported in the transition to a green economy.

The 16 members of the taskforce included individuals representing industry, trade unions and the skills and education sector, among others.

Between November 2020 and July 2021, the taskforce members reviewed industry and academic reports and facilitated stakeholder workshops. The taskforce was supported by a secretariat consisting of civil servants from the Department for BEIS and DfE. The work produced hundreds of policy ideas, which were then distilled by the taskforce into 15 recommendations. Those were discussed and validated by stakeholders at multiple workshops. The taskforce members met with ministers four times during the process to update them on key findings and the development of recommendations.

Outcome

The taskforce recommendations informed development of the government's Net Zero Strategy, published in October 2021.

Read more

About the [Green Jobs Taskforce](#) on the UK Government's website.

[Green Jobs Taskforce report](#) from UK Department for Energy Security and Net Zero, Department for Business and Trade and Department for Business, Energy & Industrial Strategy.

TOOL : Skills forecasts country reports

Author or Publisher

Cedefop

Year of publication

2023

Description

The European Centre for the Development of Vocational Training (CEDEFOP) regularly publishes skills forecasts for the EU Member States, including for Denmark, Finland and Sweden. Those forecasts provide information on employment outlooks, labour force project results and sectoral and occupational employment trends. While they do not provide any information about trends at subnational level, they may help policymakers from Denmark, Finland and Sweden to obtain a broad overview of expected trends and how they compare to other European countries.

Read more

The skills forecasts are available at: [Skills forecasts country reports](#) on Cedefop's website.

TOOL : Vocational and educational initiatives to reskill and upskill workers

Author or Publisher

European Commission

Year of publication

2023

Description

This publication highlights various specific examples from around Europe on how countries and regions have developed vocational and educational programmes to upskill and reskill workers in carbon-heavy industries. Those may provide ideas and inspiration for Nordic policymakers.

Read more

Link to the publication "[Vocational and educational initiatives to re- and upskill workers. A catalogue for just transition regions](#)" from the European Commission (PDF).

TOOL : Anticipating skill needs for green jobs: A practical guide

Author or Publisher

Gregg, C., Strietska-Ilina, O. and Büdke, C.

Year of publication

2015

Description

This publication aims to offer guidance on how to identify and anticipate future skills needs for a green economy. It includes information on data sources and advice on how to map and estimate skills demands and skills shortages for individual sectors.

Read more

Link to the publication [Anticipating skill needs for green jobs: A practical guide](#) from the International Labour Organization.



Support green choices

To achieve the green transition, we need to address current consumption patterns that rely on fossil fuels and an unsustainable use of resources. As is well documented in international sustainability rankings, the Nordic countries face challenges in this area. To address this problem, sustainable choices should be made more available, affordable, accessible and appealing.

Key messages:

- Remove obstacles that currently hinder sustainable consumption choices.
- Support consumers in making informed decisions.
- Lead by example and actively promote sustainable consumption in public procurement decisions.

What are the challenges?

1. High prices of green products and green investments

Green products and innovations are often more expensive, making them less affordable for lower-income households. If the cost of living increases during the green transition – for example due to climate taxes – low-income households are likely to be harder hit, since they spend a larger share of their income on essentials such as food and energy.

Many households in the Nordic countries still own energy-intensive assets, such as combustion-engine vehicles, or live in poorly insulated homes. Switching to more sustainable options or making renovations is often expensive and requires an

upfront investment that some groups may not be able to afford. As a result, adoption of green technologies is often driven by higher-income households, leading to social inequalities.^[57]

2. Lack of infrastructure and accessibility

Many areas in the Nordic Region are sparsely populated and lack access to infrastructure for the green transition, such as access to frequent and reliable public transport, recycling stations and charging stations for electric vehicles. That can make it difficult to change transport behaviours and adopt greener lifestyles.

Where green infrastructure and services exist, they are not always accessible to all groups. For example, people with mobility constraints may find it difficult to use public transport, people with disabilities may face problems accessing charging stations for electric vehicles and those who lack digital skills or equipment may not be able to make use of digital solutions. Such accessibility challenges can prevent some groups from taking an active part in the green transition and can increase the risk of marginalisation.

3. Lack of information and greenwashing

According to civil society representatives, there is not enough information about the green transition, its benefits and how everyone can contribute. That can make it difficult to make informed choices and take an active role. Additionally, greenwashing – i.e. companies making misleading statements about the environmental friendliness of their products and services – can create distrust. Furthermore, gender differences remain when it comes to changing consumption behaviours, with research suggesting that women are more likely to adopt greener lifestyles.

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There is so much greenwashing. There are no strict legal restrictions on what can be called 'green' and 'sustainable'. Why am I then spending an extra 200 euros if I don't even know that what I'm buying is actually sustainable?

- Youth representative

57. Høst, J., Lauritzen, F. & Popp, S. (2020). *A socially sustainable green transition in the Nordic Region. An analysis of the inequality-creating effects of the green transition and the opportunities to promote a socially sustainable green transition*. Nord 2020:056. Copenhagen: Nordic Council of Ministers. Available at: [A SOCIALLY SUSTAINABLE GREEN TRANSITION IN THE NORDIC REGION \(norden.org\)](https://norden.org/publications/2020/056).

What can *policymakers* do?

1: Take the lead and make green choices available

Ensure ready availability of well-functioning public transport, charging stations for vehicles and recycling stations. Access to public transport and sustainable mobility options needs to be improved, especially in rural and remote areas, to offer a viable alternative to fossil-fuel cars. That could be achieved by investing in fossil-free public transport and introducing demand-responsive transport (DRT), including “last-mile” travel, ridesharing, carsharing and active mobility options like cycling and walking. It could also be achieved by integrating availability of infrastructure for the green transition into urban planning. Moreover, sustainable mobility can be supported by public-sector fleet sharing and by having an integrated scheme for subsidised transport, such as public buses and school, health and disability transport services.^[58]

Nordic governments can play a pivotal role in such fields. By implementing policies, regulations and climate taxes, as well as investing in sustainable infrastructure and green technology innovations, governments can incentivise both businesses and consumers to adopt eco-friendly behaviours. Public procurement is a powerful tool in that regard, as governments can prioritise the purchase of sustainable goods and services, thereby setting a standard for the private sector and pushing for green innovation.^[59]

”

Outside of Reykjavik public transport doesn't really work. It's one bus a day that gets you to the middle of nowhere. Then you have to have a friend come pick you up and maybe drive a couple of hours.

- Youth representative

58. Dick, J., Brand, R., Tovaas, K., Brigs, S., Bikše, J. & Lapans, A. (2020). *A guide to collaborative mobility solutions in rural areas*. Stockholm: Nordregio. Available at: [A-Guide-to-Collaborative-Mobility-Solutions-in-Rural-Areas.pdf \(nordregio.org\)](#); ITF. (2021). *Innovations for better rural mobility*. ITF research reports. Paris: OECD Publishing. Available at: [Innovations for Better Rural Mobility \(itf-oecd.org\)](#).

59. Addison, R., Ottimofiore, G., Caputi, C., Morales, A. & Shankar, H. (2024). *Towards the green transition: Stimulating investment and accelerating permits for low emissions infrastructure*. OECD working papers on public governance No. 68. Paris: OECD Publishing. Available at: [Towards the green transition | OECD](#); OECD. (2024). *Harnessing public procurement for the green transition: Good practices in the OECD countries*. OECD public governance reviews. Paris: OECD Publishing. Available at: [Harnessing Public Procurement for the Green Transition | OECD](#).

2: Make green choices more affordable

Make it cheaper to shift to green consumer choices, for example by reducing taxes on organic vegetables, fruits, legumes and locally produced and seasonal food. That could be combined with higher taxes on food products that are not sustainably produced or transported. Similarly, public transport could be made cheaper by subsidising fares. To combat the 'use and throw' culture, taxes on repair and upcycling services could be lowered and options to share and rent products could be promoted. Assess the net effect of such measures on vulnerable households and consider mitigating negative effects by redistributing carbon tax revenue or lowering other taxes (see priority area 3 titled "[Assess and mitigate social and regional impacts](#)").^[60]

Since investments in green innovation may be expensive, for example buying electric vehicles, installing solar panels or improving home insulation, support for vulnerable social groups in making such investments should be considered to ensure that all can take part and benefit from green innovations.

”

Why are we taking value added tax on repairs? It's not value adding. You're maintaining. It shouldn't be the same tax as for new products.

- Youth representative

3: Make green services and products accessible

Policymakers should promote a universal design perspective, meaning that developers consider whether places, new products and technologies can be utilised by all to the greatest extent possible (see also priority area 3 titled "[Assess and mitigate social and regional impacts](#)"). It involves identifying obstacles that may hinder people from using or accessing a new green product, service or environment. A universal design perspective can increase the opportunities for people with disabilities, as well as other groups, to fully participate in and benefit from the green transition. The public sector can lead by example and use universal design

60.OECD. (2017). *Investing in climate, investing in growth*. Paris: OECD Publishing. Available at: [Investing in Climate, Investing in Growth | OECD](#); Lorenzo, F. & Tavoni, M. (2023). How to overcome the short-term costs of the climate transition? The benefits of the green transition. *EconPol Forum*, 24(6), 7-11. Available at: [How to overcome the short-term costs of the climate transition? The benefits of the green transition](#).

principles in infrastructure investments, services and state-funded development and innovation schemes.^[61]

”

In many cities you can rent cars temporarily, but they aren't accessible to people with disabilities. Can that be improved? Support companies to innovate with these needs in mind.

- Civil society representative

4: Make green choices more appealing

Making sustainable and healthy choices more attractive and appealing is crucial, for example in relation to food. Developing young people's abilities to prepare tasty and healthy vegetarian dishes and training school chefs in vegetarian cooking are possible steps to promote healthier and more sustainable diets. The public sector can play a significant role, for example by introducing environmental or health requirements in public kitchens or via urban planning by introducing zoning legislation and prohibiting fast food outlets from opening near schools.^[62] It is equally important to make green choices more attractive in other fields, for example in relation to clothing, where second-hand/vintage options could be promoted over fast fashion, or in relation to mobility, where urban planning could prioritise the needs of cyclists and pedestrians over car traffic.

5: Educate and spread information

To support consumers in making greener choices, provide sustainability education and information to raise awareness and build competence. Options include making sustainability education part of school curricula and running information campaigns about sustainable choices. Policymakers could also provide information

61. Centre for Excellence in Universal Design. (n.d.). *About universal design*. Available at: [About Universal Design - Centre for Excellence in Universal Design](#).

62. Jungsberg, L., Berlina, A. & Ueland, Ø. (2023). *Healthy and sustainable food futures: Policy design for behaviour change*. Copenhagen: Nordic Council of Ministers. Available at: [Healthy and sustainable food futures: Policy design for behaviour change](#); Jungsberg, L., Berlina, A., Ormstrup Vestergård, L., Guðmundsdóttir, H. & Ueland, Ø. (2024). *Policy tools for sustainable and healthy eating: Enabling a food transition in the Nordic countries*. Copenhagen: Nordic Council of Ministers. Available at: <https://pub.norden.org/nord2024-007/nord2024-007.pdf>.

about concrete goals and milestones for the green transition and how the general public can contribute (see also priority area "[Develop a vision](#)").^[63]

Labelling is another instrument that helps consumers make informed choices. For example, the Nordic Swan Ecolabel is currently available for 59 product categories and is widely recognised and trusted by consumers.^[64] Developing a joint Nordic climate food label, inspired by the success of the Keyhole label and the Nordic Nutrition Recommendations, could be an effective way for Nordic countries to assist consumers in choosing more climate-friendly food products.^[65]

”

Incorporate sustainability education and environmental awareness into school curricula from an early age. Encourage discussions and activities that foster a sense of environmental responsibility and inspire young people to take an active role in sustainability.

- Youth representative

63. Páll Jónsson, Ó., Guðmundsson, B., Bergliot Øyehaug, A., Didham, R.J., Wolff, L.-A., Bengtsson, S., Andreassen Lysgaard, J., Gunnarsdóttir, B.S., Árnadóttir, S.M., Rømoen, J., Sund, M., Cockerell, E., Plummer, P. & Brückner, M. (2021). *Mapping education for sustainability in the Nordic countries*. TemaNord 2021:511. Copenhagen: Nordic Council of Ministers. Available at: [temanord2021-511.pdf \(norden.org\)](#).

64. Nordregio. (2024). *Sustainable living hub. Tools and guidelines for key sectors enabling sustainable lifestyle choices*. Stockholm: Nordregio. Available at: [Sustainable Living Hub](#).

65. Jungsberg, L., Berlina, A., Ormstrup Vestergård, L., Guðmundsdóttir, H. & Ueland, Ø. (2024). *Policy tools for sustainable and healthy eating: Enabling a food transition in the Nordic countries*. Copenhagen: Nordic Council of Ministers. Available at: <https://pub.norden.org/nord2024-007/nord2024-007.pdf>.

Read more about how to support green choices

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Dick, J., Brand, R., Tovaas, K., Brigs, S., Bikše, J. & Lapans, A. (2020). *A guide to collaborative mobility solutions in rural areas*. Stockholm: Nordregio. Available at: [A-Guide-to-Collaborative-Mobility-Solutions-in-Rural-Areas.pdf \(nordregio.org\)](#).

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International Transport Forum. (2021). *Innovations for better rural mobility*, ITF Research Reports. Paris: OECD Publishing. Available at: [Innovations for Better Rural Mobility \(itf-oecd.org\)](#).

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Jungsberg, L., Berlina, A. & Ueland, Ø. (2023). *Healthy and sustainable food futures: Policy design for behaviour change*. Nord2023:016. Copenhagen: Nordic Council of Ministers. Available at: [nord2023-016.pdf \(norden.org\)](#).

Jungsberg, L., Berlina, A., Ormstrup Vestergård, L., Guðmundsdóttir, H. & Ueland, Ø. (2024). *Policy tools for sustainable and healthy eating: Enabling a food transition in the Nordic countries*. Nord2024:007. Copenhagen: Nordic Council of Ministers. Available at: [Policy tools for sustainable and healthy eating: Enabling a food transition in the Nordic countries \(norden.org\)](#).

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This is how policymakers can support green choices

This section presents **examples** and **tools** – from the Nordic countries and further afield – that show how to promote more sustainable consumption and lifestyles.

EXAMPLE: Internal climate tax

Location

Aarhus (Denmark)

Description

In 2022, Aarhus Municipality in Denmark introduced an internal climate tax on its procurement of food items with high CO₂ emissions. The tax targets beef, lamb and ready meals containing meat, as well as juice and sugar-sweetened beverages, which together account for one-third of the municipality's food-related CO₂ emissions. Initially, the tax was set at DKK 850 per emitted tonne of CO₂. By 2023, it had been increased to DKK 1,000 per tonne and it is planned to reach DKK 1,500 by 2030. This progressive tax is applied during the procurement process to incentivise more sustainable purchasing practices.

Outcome

In its first year, the climate tax led to a 40% reduction in beef consumption and an overall 12% decrease in food-related CO2 emissions.

Read more

[Implementing sustainable procurement strategy](#) - document from Aarhus Municipality (PDF).

EXAMPLE : State-governed climate label for food products

Location

Denmark

Description

In 2022, the Danish government initiated the development of a state-controlled climate label for food products. By 2023, an expert group had presented its recommendations to the government on the design and implementation of the label, as reported by the Danish Veterinary and Food Administration. Its proposal included a traffic light labelling system and a publicly accessible database detailing the climate impact of all food items to underpin the labelling system. The goal is to guide consumers towards more sustainable food choices and encourage a shift in food production towards greater sustainability.

Outcome

The climate label is under development and has therefore not yet achieved any specific outcomes or impacts.

Read more

[Sustainable public procurement](#) website

News article "[Denmark to Roll Out New State-Run Climate Label for Food](#)" from think tank Foodtank.

EXAMPLE : Demand-Responsive Transport (Kyläkyty service)

Location

Finland

Description

The municipality of Porvoo introduced a demand-responsive transport (DRT) service to improve public transport in rural areas, reduce car usage and lower transport emissions. The DRT service also had the goal of providing better access to train and bus services by making door-to-door travel chains possible. The service integrated resources from transport services for disabled and elderly people with public transport and enhanced the utilisation of vehicle capacity through automated routing and pooling.

Outcome

Evaluation of the Kyläkyty service in Porvoo revealed that 67% of the trips made with the service would otherwise have been by car and 27% of users would not have made the trip at all. The trial led to a 12.6% reduction in driven kilometres, saving 10,923 kilometres and reducing CO2 emissions by 2.6 tonnes. 36% of the total kilometres saved were trips that would ordinarily have been taken by taxi.

Read more

Website of the initiative (in Finnish and Swedish): [Kyläkyty – Porvoo](#)

A brief description and references can be found in this report "[Innovations for better rural mobility](#)" from International Transport Forum (PDF).

EXAMPLE : Tasty School

Location

Finland

Description

Tasty School has been developed by the Finnish Society for Food Education and the University of Eastern Finland, with funding from the Ministry of Social Affairs and Health and the Ministry of Agriculture and Forestry. The initiative has drawn up a primary school model for food education. It offers practical solutions for schools on how to improve school meals, implement food education activities and increase social participation. That includes complete lessons, as well as tasks, materials and an online course for teachers. As part of the suggested food education curriculum, children learn about sustainable food choices, seasonal food choices and food preparation.

Outcome

Evaluation of the Tasty School model showed that it can be easily integrated into the school environment. Support from headteachers and colleagues was identified as a success factors while lack of time was the biggest barrier to using the model.

Read more

Website of [Tasty School](#) (in Finnish, English and Swedish).

Evaluation "[The 'Tasty School' model is feasible for food education in primary schools](#)" in Journal of Human Nutrition and Dietetics.

EXAMPLE : Age-friendly city strategy

Location

Oslo (Norway)

Description

The city of Oslo engaged with almost 1,000 older adults to make city planning more age-friendly. Older adults could participate in meetings, workshops and interviews. They were also encouraged to make short films about barriers in the city, as well as opportunities for improvement, including in relation to fields that are important for the green transition, such as public transport and green spaces.

Outcome

The input provided by the participants informed the development of public transport, public spaces, housing and other areas to make them more accessible and appealing to older adults.

Read more

Information about [Age-friendly Oslo](#) on Oslo Municipality's website.

Information on [Nordic network for age-friendly cities and communities](#) of which Oslo is a member, on Nordic Welfare Centre's website.

EXAMPLE : Sustainable Public Procurement Initiative

Location

Sweden

Description

In Sweden, public procurement accounts for over SEK 800 billion annually. The Sustainable Public Procurement Initiative aims to advance the shift towards a more sustainable society by prioritising socially and environmentally sustainable products. Sweden's regions adhere to a unified code of conduct for suppliers, which encompasses fields such as human rights, workers' rights, environmental concerns (including climate) and business ethics. One concrete example is the promotion of circular procurement, which includes online training for stakeholders and assists regions and municipalities in signing framework agreements for furniture upcycling and related services.

Outcome

The work and outcome of the initiative are described in yearly activity reports. The latest edition is available here: [Året som gick – resultaten i korthet](#).

Read more

Website of the Sustainable Public Procurement Initiative [Hållbar upphandling](#) (in English and Swedish).

More information on [Hållbar upphandling](#) on SKR's website.

EXAMPLE : WasteFinder

Location

Canada

Description

WasteFinder provides tactile and visual information to assist people with disabilities in recycling their waste independently in public spaces. The system is placed on the ground of waste stations and helps people with disabilities with correct waste disposal. This initiative is one concrete example of how to remove accessibility barriers that hinder social groups from taking part in the green transition.

Outcome

A successful pilot project has been conducted at Thomson Rivers University and the system will be rolled out in further locations.

Read more

[WasteFinder](#) on Thomson Rivers University's website.

EXAMPLE : BlueLA – car sharing in low-income neighbourhoods

Location

Los Angeles (USA)

Description

The city of Los Angeles promotes electric transport and seeks to increase the use of electric cars. The BlueLA initiative addresses the issue that electric vehicles are often unaffordable for low-income households and other vulnerable groups. The city of Los Angeles entered into a public-private partnership to establish a car-sharing programme for electric vehicles in low-income neighbourhoods, including a vehicle fleet, charging stations and dedicated parking spaces. Use of the electric vehicles is subsidised for lower-income households.

Outcome

Between February 2021 and September 2022, some 52,000 trips were completed using the available electric vehicles. Nearly half of all trips were made by low-income users.

Read more

Article "[LA provides access to affordable electric vehicle car sharing with BlueLA](#)" from C40.

[BlueLA](#) on City of Los Angeles Department of Transportation's website.

EXAMPLE : See, sow and taste

Location

Nordic Region

Description

The Nordic Genetic Resource Centre (NordGen) developed educational materials on food production for children and young people in 2023. The materials – including instructions and four cultivation experiments using seeds from NordGen – were distributed to pre-schools, schools and after-school clubs in Reykjavik. The experiments teach children and young people about seeds, cereals and the diverse varieties of vegetables as well as how to grow microgreens.

Outcome

Around 1,000 children participated in the project in 2023. In 2024, the project was expanded to include schools in the Faroe Islands and Lithuania.

Read more

[See, sow and taste](#) is described on NordGen's website.

EXAMPLE : Climate School programme

Location

Switzerland

Description

The programme has been designed to systematically include sustainability education in school curricula. Over a period of four years, students at participating schools learn about renewable energy, environmentally friendly mobility and sustainable food production and consumption.

Outcome

The initiative has involved 43 schools and 14,300 students.

Read more

Summary of the initiative [Climate school](#) by the TOMORROW project (in English) (PDF)

[Climate School's](#) website.

TOOL : A toolkit for a just transition with the people

Author or Publisher

Engager

Year of publication

2021

Description

This toolkit focuses on energy poverty. It discusses challenges related to energy poverty and strategies to overcome those challenges. Multiple good practices from European countries are described in the toolkit and may offer inspiration. Among other topics, the toolkit addresses the question of how vulnerable groups and tenants can be supported in undertaking energy renovations of their homes and thereby contribute to the energy transition.

Read more

The [Engager toolkit](#) "A toolkit for a just transition with the people" (PDF).

TOOL : Nordic Swan Ecolabel

Author or Publisher

Nordic Council of Ministers

Year of publication

The label was introduced in 1989.

Description

The Nordic Swan ecolabel is an environmental labelling scheme that supports consumers in choosing the most sustainable products and services. It is therefore a valuable tool in the transition to more sustainable consumption. The label certifies that a product or service adheres to ambitious environmental requirements and criteria. Those are currently defined for 59 product categories, including cleaning products, cosmetic products and office and hobby supplies. In 2023, criteria were introduced for three new product groups, namely e-commerce logistics, building operations and window replacement.

Read more

Website of the [Nordic Swan Ecolabel](#).

A [description of the recent development of requirements for three new product categories](#) in report "Sustainable Living Hub" by Nordregio.

Policy memos: Voices and views from people in the Nordics

In four policy memos, you can learn more about the attitudes, worries, and expectations of social groups at risk of being left behind in the transition – and what you can do to avoid that from happening. These memos are based on desk research, a Nordic survey and discussions with representatives of these social groups.

→ [Young people](#)

→ [Older adults](#)

→ [People with disabilities](#)

→ [Workers in carbon-heavy industries](#)



Young people and the green transition

SUMMARY

Young people are a key group for the green transition, since they—more than any other living generation—will have to bear the consequences of climate change and the impact of current climate action. According to the United Nations Convention on the Rights of the Child, children and young people have the right to be heard in all matters which concern them (United Nations, 2023). Nonetheless, young people are underrepresented in political decision-making processes, including those dealing with the green transition.

This policy memo summarises eight key insights about the views, concerns, and expectations of young people in the Nordic Region towards the green transition. It also summarises several suggestions from youth representatives to Nordic policymakers on how to make the green transition a just process, including the importance of reaching climate goals in the first place, engaging young people, and investing in sustainability education.

KEY INSIGHTS

1. 74% of young people in the Nordic Region worry about climate change.
2. Young people face challenges in adopting greener lifestyles.
3. 51% of young people expect improvements in health and well-being.
4. 35% of young people expect that the green transition will create jobs.
5. Young people are more likely to perceive climate policies as unfair than the majority population.
6. 33% of young people think that the Sami population is disproportionately affected by climate policies.
7. Young people worry that Nordic societies are becoming more polarised due to the green transition.
8. Young people want more positive communication about the green transition.

Introduction

Young people are a key group for the green transition. They will experience the impacts of climate change and the green transition first hand in their lifetime. Young people today have grown up with news and information about climate change, and reports are describing rising levels of climate anxiety among young people in the Nordics and beyond (Burenby et al., 2021; Hickman et al., 2021). Some young people have found an outlet for their anxiety by engaging in climate activism such as the 'Fridays for future' movement, demanding more ambitious climate mitigation efforts from policymakers (de Moor et al., 2020).

Despite this engagement, young people are often underrepresented in formal decision-making processes that address climate change and the green transition. In its Youth Stocktaking Report, the OECD (2018) states that young people do not have sufficient influence on policies that affect them the most, including climate change. There is also little knowledge about the impact of green transition policies on this group. The research literature in this area is limited and fragmented (Tapia et al., 2022).

This policy memo aims to contribute filling this gap by summarising key insights about the attitudes, worries, and expectations of young people towards the green transition. It is based on a literature review, a Nordic survey and a focus group discussion with youth representatives (see Box 1).

Box 1: Sources behind this policy memo

1. Literature review about the impacts of climate mitigation policies on different social groups in the Nordic Region

- Conducted: Spring 2022
- Method: A systematic search of academic papers, legal documents, and grey literature using a set of keywords

2. Nordic Survey on the green transition

- Conducted: October – November 2022
- Interview method: Computer-assisted telephone interviews
- Target group: A representative sample of the adult population (interlocked gender-age quotas) in the Nordic Region
- Number of completed interviews:

Country	Number of completed interviews
Denmark	910
Finland	901
Iceland	380
Norway	909
Sweden	908
Faroe Islands	382
Greenland	405
Åland	383
Total	5178

All figures shown in this policy brief are based on the Nordic survey.

3. Focus group discussion on the green transition with youth representatives.

- Conducted: 20 June 2023
- Method: Discussion held via digital meeting platform Microsoft Teams (plus two youth representatives from Denmark and Finland supplied input to the discussion questions in written form).
- Target group: Six participants from Finland, Iceland, Norway, and Sweden
- All direct quotes that are included in the following sections come from the focus group discussion.

Young people in the Nordic Region

In this policy memo, “young people” are defined as people between ages 15 and 25. People in this age group have been particularly vocal and engaged in climate action during recent years, for example in the international “Fridays for future” movement started by Greta Thunberg. According to recent research, youth aged 15 to 25 made up large shares among the participants, at least during the earlier demonstrations of the movement (Wahlström et al., 2019; de Moor et al., 2020).

In 2023, 3.2 million people were 15 to 25 years old in the Nordic Region, corresponding to around 12% of the total population (Nordic Statistics, 2024a). At a national level, the share of young people among the total population ranged from 9% on Åland to 13% in both Greenland and Iceland (Nordic Statistics, 2024a). Due to low fertility rates and population ageing, the number of young people is projected to slightly decline to 3.1 million people by 2040, making up around 11% of the total population in that year (Nordic Statistics, 2024b).

In the following sections, we present eight insights on young people and the green transition and share several suggestions made by youth representatives during a focus group discussion on how the green transition can be more just in the Nordic Region.

Box 2: Research limitations - Children and the green transition

It is important to acknowledge that young people are a diverse group with many different attitudes and expectations towards the green transition, and we may not have captured the entire spectrum of viewpoints through our sources (see Box 1).

Most importantly, due to data limitations, this policy memo does not capture the attitudes and concerns of children. The United Nations have defined children as a group that is particularly vulnerable to the impacts of climate change, for example extreme weather events, water scarcity, or air pollution (UNICEF, 2023). This makes it important to increase knowledge on the needs and perceptions of children in times of climate change and to include child perspectives into green transition policymaking (Pegram & Colon, 2019).

Nonetheless, as evidenced by the literature review conducted for this project (see Box 1), research on the impact of green transition policies on children is limited and fragmented (Tapia et al., 2022). Most of the available literature conveys that the impact of climate policies is largely driven by people's socioeconomic status rather than their age per se (Shea et al., 2020), implying that children living in poorer households are more vulnerable than their peers in richer households. Other than this, the available academic literature seldom elaborates on the impact of climate mitigation and adaptation policies on children or their views and expectations.

One reason for this lack of knowledge is that researchers have only in recent years turned to children as actors and respondents in their own right. Existing methods on surveying the adult population cannot be directly extrapolated to interviewing minors (Borgers et al., 2000). Importantly, study designs and interview questions need to be adapted to the cognitive and communicative skills development level of children (for an overview see UK Research and Innovation, 2024). In recent years, research attention and methodological tools to survey children have increased so that knowledge on children's perceptions of the green transition are likely to improve. In our own Nordic Survey (see Box 1), only adults aged 18 and older could be interviewed. This means that children and youth of younger ages are not represented in our dataset. At the same time, the youngest age group that we can study with our survey data encompasses the ages 18 to 29, i.e., we have to include 26-29-year-olds in our survey analyses, even though they are not in the focus of this policy memo.

Children have so far also largely been disregarded in policy discussions around the green transition (Pegram & Colon, 2019). They are often given no formal role in discussion and decision-making procedures, and their views are rarely considered when policies and initiatives around climate mitigation and adaptation are designed. In priority area 2 of this Nordic toolbox ("Engage people"), we include some information about how to include children and youth in policymaking processes related to the green transition and sustainability questions. We hope these may offer inspiration on how to streamline the inclusion of children – as well as youth – into deliberations on green transition policies in the Nordic Region. Policymakers have a responsibility and obligation to hear the views of children and young people in matters that concern them, including the green transition.

INSIGHT #1: 74% of young people in the Nordic Region worry about climate change.

In recent years, an emerging corpus of literature has documented an increase in climate anxiety among young people in the Nordic Region and beyond, with important implications for their mental health and well-being (Pihkala, 2020). In a survey conducted by Hickman et al. (2021), a majority of young people from ten countries around the world (including Finland) stated that they were moderately or extremely worried about climate change, and these feelings of distress were correlated with what they perceived as inadequate government action.

A pan-Nordic survey that was conducted in the autumn of 2022 (see Box 1) confirmed this finding for the Nordic Region. 74% of young adults stated that they consider climate change as a serious or very serious problem (Figure 1). Among all respondents to the survey (total population), 71% shared this opinion – a small but statistically significant difference. It implies that climate worries are more prevalent among the Nordic young people than among the population at large.

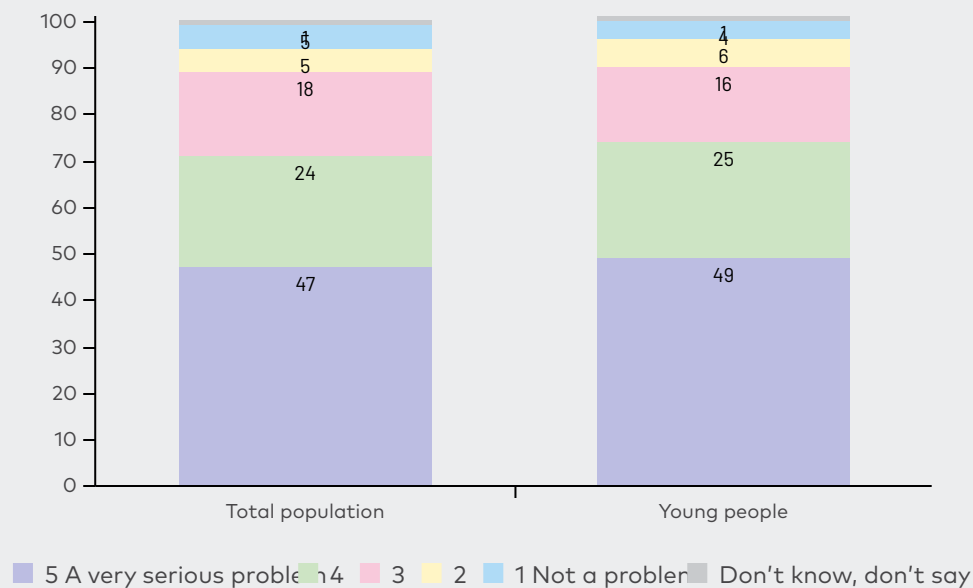
Around half of all young people in the survey (49%) also agreed that more public finances should be invested in preventing climate change, even if it means that taxes would increase. In this question, young people were in line with other age groups—49% of the total population shared this view.

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The uncertainty of the future due and the pressure to take personal responsibility for sustainability can lead to mental health issues, such as eco-anxiety and eco-guilt, affecting young people's overall well-being.

- Youth representative

Figure 1: To what extent do you think climate change is a problem?



Note: The figure shows the survey answers given by all respondents in the Nordic Region (left-hand side), and respondents in the age group 18-29 years (right-hand side). Respondents could answer the question on a scale from 1 to 5, with 1 meaning that climate change is "not a problem" and 5 meaning that climate change is "a very serious problem". The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 4 and 5. Hover over the legend to see the results.

Source: Tapia, Sánchez Gassen, & Lundgren (2023).

Given this backdrop, the green transition may have beneficial impacts on young people who suffer from climate anxiety. If green transition policies and initiatives lead to visible change and real improvements in lowering greenhouse gas emissions, young people may gain confidence. Getting engaged and participating in various forms of climate action is one coping strategy in combatting climate fears (Pihkala, 2020; Ojala, 2016). Engaging young people in the green transition should therefore also bring benefits to their well-being.

INSIGHT #2: Young people face challenges in adopting greener lifestyles.

Many young people are committed to playing their part in the green transition and embracing a more sustainable lifestyle. Nonetheless, this can be challenging. Youth representatives highlight the following obstacles:

Lack of infrastructure and public transport

In remote and rural areas in the Nordic Region, public transport options are often scarce, requiring young people to rely on cars for their mobility. Recycling facilities may also be few and far apart, making it more difficult to contribute to the circular economy.

Higher prices

Many sustainable products, from groceries and technologies to vehicles and clothing, are more expensive than their conventional counterparts. Since most young people are still in education or just starting a career, they often have less income than other population groups. This can make it challenging to switch to eco-friendly alternatives.

Inconvenience

Youth representatives argue that it needs to be easier and more convenient to adopt green lifestyles. Too often, it is time consuming, complicated, or it requires too much effort from people to adopt environmentally friendly behaviours into their daily lives. Youth worry that this may deter many people from playing their part in the green transition.

Green washing

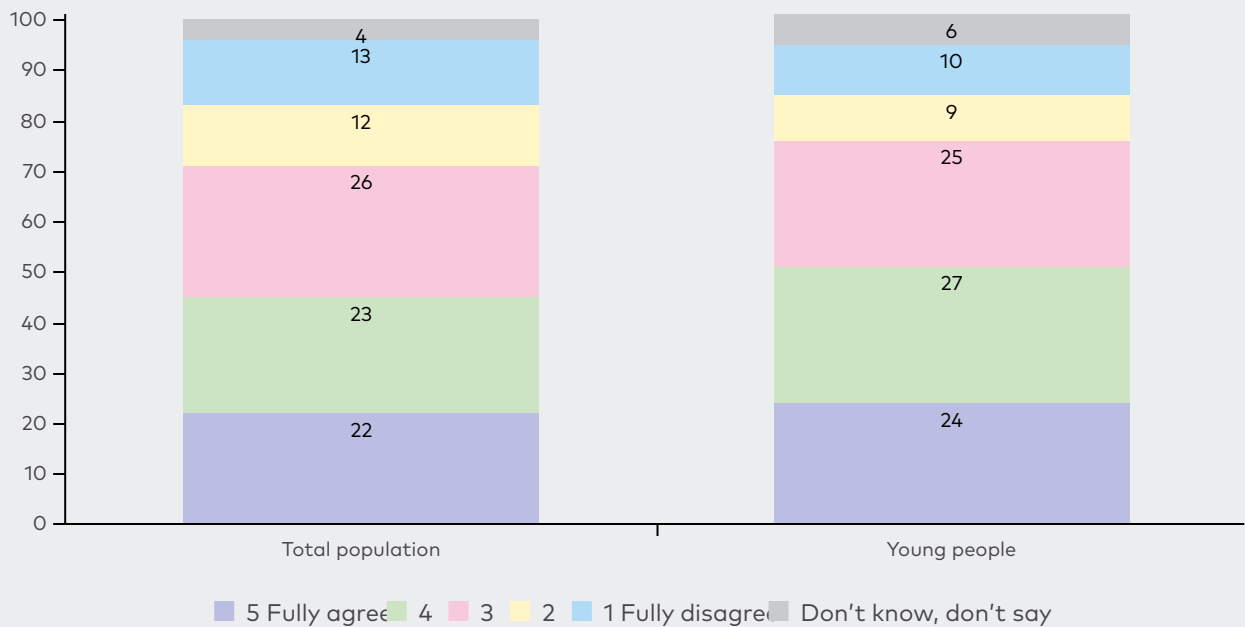
Youth representatives identify greenwashing as a key challenge. They argue that too many companies make unsubstantiated claims about the sustainability of their products or services. For the individual consumer, it can be tedious, time-consuming, and often even impossible to validate sustainability claims.

INSIGHT #3: 51% of young people expect improvements in health and well-being.

Despite these challenges, young people are optimistic about the impacts of the green transition, for example in terms of health and well-being (Figure 2). More than half of all young respondents in the Nordic survey (51%) state that they expect improvements in these areas. Only one in five (19%) explicitly disagree. These results imply that young people are more optimistic about the potential health

impacts of the green transition than other age groups. Considering all Nordic respondents that were interviewed, 45% say that they expect improvements in health and well-being, and 25% disagree. During a focus group discussion, youth representatives in particular stressed the beneficial impacts which may come from cleaner air and water.

Figure 2: To what extent do you agree or disagree with the following statement? – “Initiatives to fight climate change will improve health and well-being in the area where I live.”



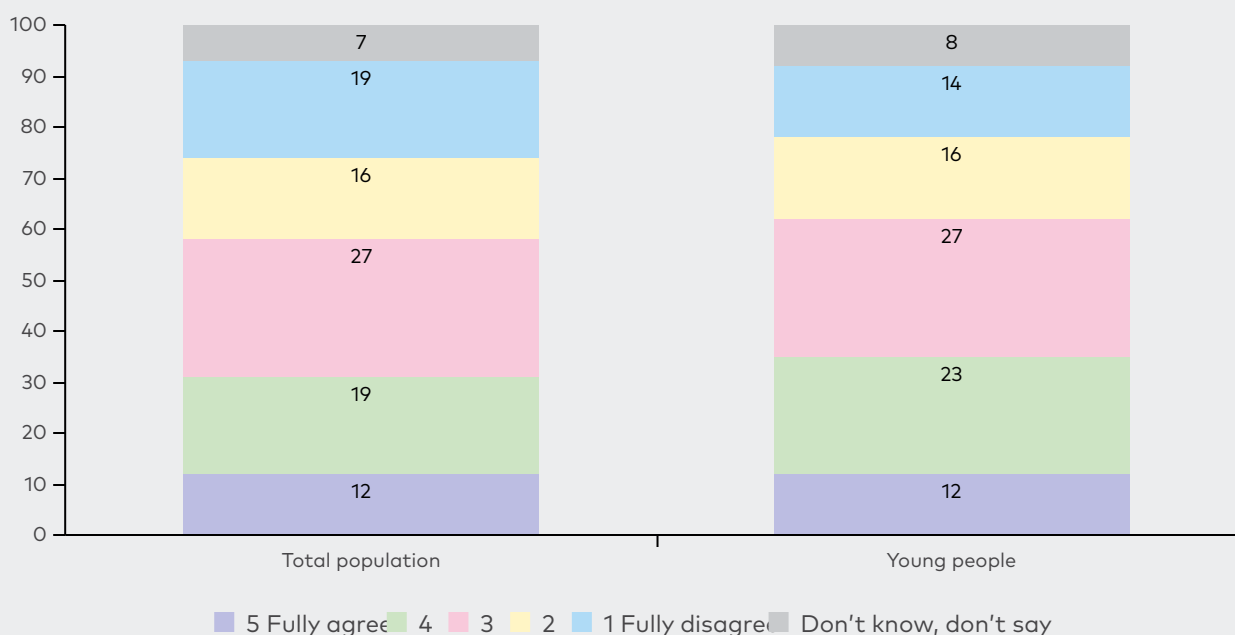
Note: The figure shows the survey answers given by all respondents in the Nordic Region (left-hand side), and respondents in the age group 18-29 years (right-hand side). Respondents could answer the question on a scale from 1 to 5, with 1 meaning that they “fully disagree” and 5 meaning that they “fully agree”. The results described in the text are calculated by adding the percentages of respondents who chose answer options 1 and 2, and 4 and 5. Hover over the legend to see the results.

Source: Tapia, Sánchez Gassen, & Lundgren (2023).

INSIGHT #4: 35% of young people expect that the green transition will create jobs.

Young people are also rather optimistic about the labour market impacts of the green transition (Figure 3). When confronted with the statement that initiatives to fight climate change will help create new jobs, more young people say that they agree (35%) than disagree (30%). When considering all respondents in the survey, the reverse is true – here, 31% say they expect job creation while 35% disagree. This suggests that young people are less worried about the labour market impacts of the green transition than other age groups.

Figure 3: To what extent do you agree or disagree with the following statement? – “Initiatives to fight climate change will help create new jobs in the area where I live.”



Note: The figure shows the survey answers given by all respondents in the Nordic Region (left-hand side), and respondents in the age group 18-29 years (right-hand side). Respondents could answer the question on a scale from 1 to 5, with 1 meaning that they “fully disagree” – i.e. they do not think that initiatives to fight climate change will lead to job creation – and 5 meaning that they “fully agree” and expect new jobs. The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 1 and 2, and 4 and 5. Hover over the legend to see the results.

Source: Tapia, Sánchez Gassen, & Lundgren (2023).

In a focus group discussion, youth representatives did not only reflect on the quantity but also the quality of the new green jobs. Their expectation is that new jobs in green sectors will be meaningful and allow young people to contribute to sustainable societal development in the Nordic Region, thereby also giving them a sense of purpose and benefiting their own well-being.

Some sectors of the Nordic economies that heavily rely on fossil fuels will have to change their production routines and/or product palette during the green transition. This may lead to changes in tasks, requirements, or even job loss. Since polluting industries are often concentrated in specific regions or municipalities, potential job losses could affect some areas more than others. When confronted with the fact that impacts could be spatially uneven, youth representatives do not question the need for a green transition per se. Instead, as evidenced by the quote, they reflect on how alternative careers and livelihoods could be offered to those affected, including considerations about financing and reskilling.

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The green transition creates more meaningful jobs than we had before. People can engage in something that they feel is important for our society, not just themselves.

- Youth representative

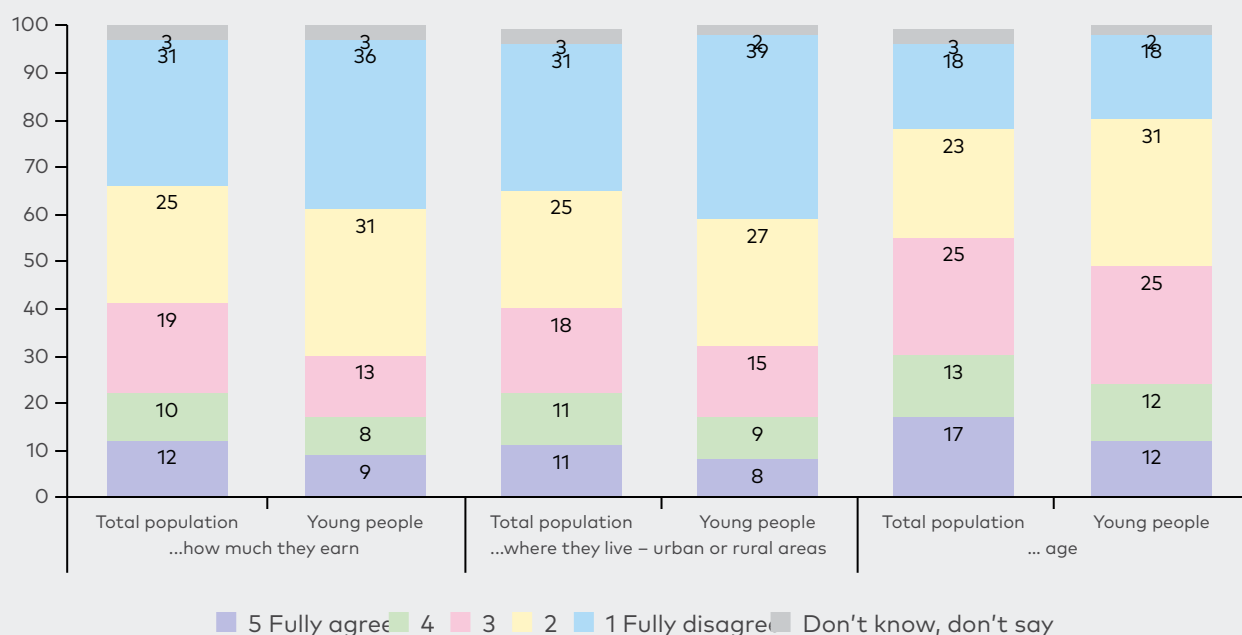
INSIGHT #5: Young people are more likely to perceive climate policies as unfair than the majority population

While many young people are rather optimistic about the impacts of the green transition on health, well-being, and job creation, they are less convinced that current climate policies are fair. In the Nordic survey, respondents were confronted with the statement that everyone in society is equally affected by climate initiatives, irrespective of how much they earn, where they live (rural or urban areas), or their age (Figure 4). Two out of three young people (67% and 66%, respectively) disagreed with the first two statements. In other words, they think that the benefits and challenges of the green transition affect people to different extents, depending on income and area of residence. 49% also think that age matters.

Young people are more doubtful about the fairness of the green transition than the rest of the population. When considering the answers of all respondents to the survey ('total population'), 56% stated that the impact of climate initiatives differs by income and place of residence, and 41% said that age matters.

One of the goals of the green transition is to leave no one behind. Based on the survey results, young people in the Nordic Region send the message that there is room for improvement in this area.

Figure 4: To what extent do you agree or disagree with the following statements? – “Everyone is equally affected by initiatives to fight climate change regardless of ...how much they earn. / ... where they live – urban or rural areas. / ... age”



Note: The figure shows the survey answers given by all respondents in the Nordic Region (left-hand side of each panel), and respondents in the age group 18-29 years (right-hand side in each panel). Respondents could answer the question on a scale from 1 to 5, with 1 meaning they “fully disagree” and 5 meaning that they “fully agree”. The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 1 and 2. Hover over the legend to see the results.

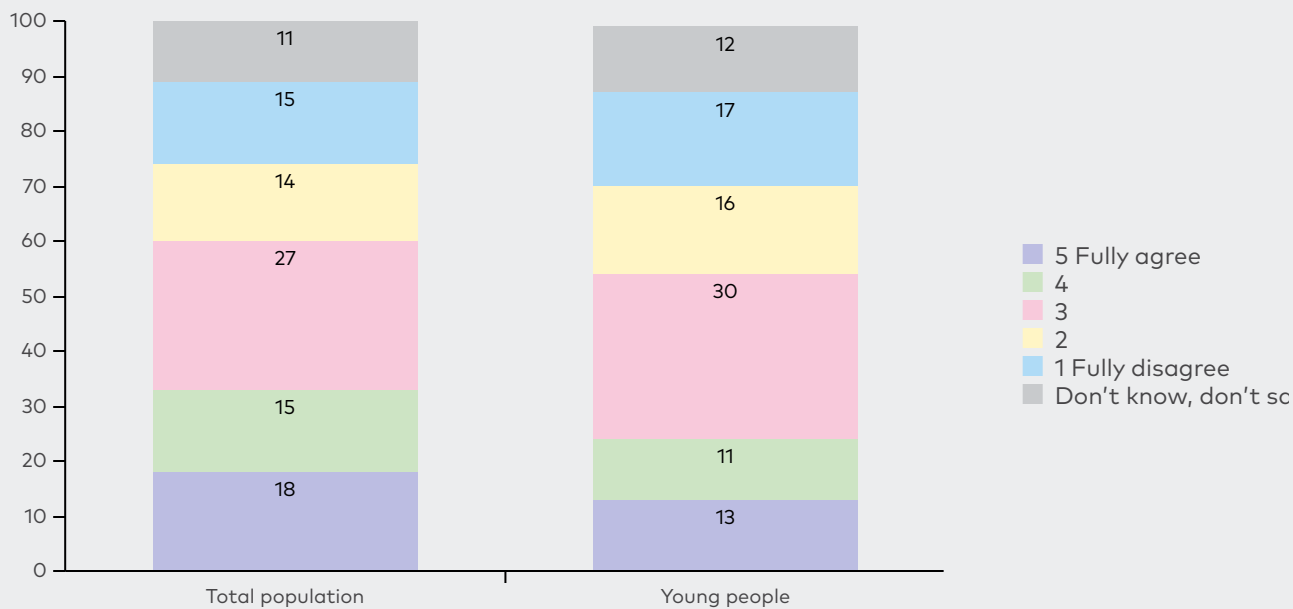
Source: Tapia, Sánchez Gassen, & Lundgren (2023).

INSIGHT #6: 33% of young people think that the Sami population is disproportionately affected by climate policies

Young people are more likely than other age groups to think that the Sami people are disproportionately affected by climate change initiatives. Survey respondents in Finland, Norway and Sweden were asked if they agree that the Sami population in their country is equally affected by climate initiatives as the rest of the population (Figure 5). Thirty-three percent of young respondents in the three countries disagree with this statement (total population: 29%). A smaller group, 24%, agree and think that the Sami are affected by climate initiatives to the same extent as others (total population: 33%). Notably, the largest group—42% of young respondents—give a neutral answer to this question (answer option 3), say that they “Don’t know” or choose not to answer. This suggests a widespread uncertainty among young people about what the green transition de facto means for the Sami people.

Youth representatives express their concern that the green transition, and specifically the transition to green energy, often comes at a cost to the Sami people and their lifestyles, which they perceive as an important injustice to address. They argue that the Sami, and especially young Sami, need to be included and empowered during the green transition so that they can maintain their traditions and culture.

Figure 5: To what extent do you agree or disagree with the following statements? – “The Sámi population in my country is affected by initiatives to fight climate change to the same extent as the rest of the population.”



Note: The survey question was only posed to respondents living in Finland, Norway and Sweden. The figure shows the survey answers given by all respondents in these three countries (left-hand side of each panel), and respondents in the age group 18-29 years (right-hand side). Respondents could answer the question on a scale from 1 to 5, with 1 meaning they “fully disagree” and 5 meaning that they “fully agree”. The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 1 and 2, 4 and 5, as well as the answer options 3 and ‘Don’t know, don’t say’. Hover over the legend to see the results.

Source: Tapia, Sánchez Gassen, & Lundgren (2023).

INSIGHT #7: Young people worry that Nordic societies are becoming more polarised due to the green transition

Many young people in the Nordic Region not only doubt the fairness of climate policies; they also worry that the green transition may lead to stronger societal polarisation. Youth representatives share their impression that young people are more and more divided when it comes to the green transition and sustainable development.

Youth representatives say that they see a counterculture forming against the green transition and see this as an obstacle to achieving climate goals. They worry that it may become more difficult to find compromises between these divided perspectives going forward. As illustrated by the quote, youth representatives stress the importance of maintaining democratic discussions about the green transition.

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The green transition and the green movement have a responsibility to think about how we communicate in order to get people with us and not against us.

- Youth representative

INSIGHT #8: Young people want more positive communication about the green transition

Youth representatives assert that one approach to counteract the polarisation among young people and society at large is to change the political communication about the green transition. In their perception, public and political discussions too often revolve around potential negative impacts of the green transition, describing it as a process that threatens people's comfortable lifestyles. Too often, key messages focus on restrictions and behavioural changes, making people feel patronised, ashamed, and exhausted.

According to youth representatives, not enough attention is paid to the many benefits that the green transition can bring to Nordic economies and societies. Youth representatives stress that policymakers should focus on creating a positive vision of the green transition and highlight the benefits. Future life in green Nordic societies should capture the population's imagination, inspiring and motivating

both young people and other groups to participate in the transition to get there. Creating such a positive vision may also have positive effects on youth struggling with climate anxiety.

Similarly, youth representatives argue that policymakers need to stress the necessity of the green transition. It may entail costs and require changes, but not doing anything will be even more expensive and have devastating effects. In other words, the green transition is not an optional pursuit; it is essential for the future of the Nordic Region.

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Suggestions from young people for a just green transition

Youth representatives who took part in the project focus group make the following suggestions to national policymakers in the Nordic countries to ensure that the green transition is just:

1: Focus on achieving the green transition

Youth representatives stress that first and foremost, greenhouse gas emissions need to be reduced. Achieving the green transition is, in itself, a just pursuit, since impacts of climate change fall disproportionately on poorer world regions, vulnerable groups and future generations. The green transition should be justly executed, but the aims of making it fair and balanced cannot be an excuse to slow down the process. Redistributing the financial resources from climate taxes is one of several approaches that could be taken to mitigate the impact of policies on the most vulnerable regions, sectors, and groups.

2: Make sustainable options affordable for all

It is important that sustainable choices become more affordable and convenient so that more people can take part in the green transition and switch to more sustainable consumption patterns. This may include improving access to public transport, providing subsidies for and/or removing taxation on vegetables and legumes, financially supporting organic farmers, installing more recycling stations in walking distance from people's homes, and making it cheaper to repair and upcycle existing products.

3: Invest in education on sustainability

Youth representatives argue that sustainability education and environmental awareness training is crucial for children and young people and should form a central part of school curricula. It can empower young generations to learn about the benefits of environmentally friendly choices and to adopt sustainable consumption patterns from an early age. It can also support young people in taking an active role in the green transition and qualify for a career in the green economy.

4: Listen to and involve young people in policymaking.

Since the current generation of children and youth will have to live with the consequences of global warming for the rest of their lives, youth representatives stress that they should have a central role in developing and adopting climate policies and initiatives. The right to be heard in matters that concern them, including environmental and climate issues, is enshrined in the United Nations Convention on the Rights of the Child. All Nordic countries have signed the convention and therefore have a duty to consult and involve children and young people during green transition policymaking, in line with their age and maturity (United Nations, 2023). Participation processes respect the diversity of children and young people by accounting for different age groups, genders, abilities, areas of residence and socio-economic backgrounds. Including young people in climate-related decision-making processes should, however, not depend on their free labour. Young people should be valued and compensated for their efforts, particularly if their engagement is time-consuming.

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Create platforms and mechanisms for young people to participate in discussions and decision-making processes related to the green transition. We are the ones who have to live of the consequences of climate changes, we should be heard.

- Youth representative

5: Assess the impact of climate policies on young people

Youth representatives stress that policymakers should more systematically conduct impact assessments of green transition policies to analyse how planned policies would affect youth but also future generations (European Commission et al. 2024). Options include to conduct a Child Rights Impact Assessment (CRIA) and a Child Rights Impact Evaluation (CRIE) (Daly and Lundy, 2022). Children's right to be heard is central to these assessments.

6: Allow for compromises

Not all countries, regions, and groups will be able to contribute to the green transition to the same extent. For example, people in Iceland are more dependent on air travel and people living in rural areas depend on their cars to move around. It is important to recognise that the green transition may look different due to the diversity of regions, population groups, and existing conditions. This means that local, place-based policies will play a major role in the transition, and national policies need to remain flexible and allow for customised applications to achieve the common transition goals.



Older adults and the green transition

SUMMARY

Despite their significant experiences, older adults' voices and concerns are frequently overlooked in climate discussions. In this policy memo, we present statistics and experiences of older adults towards climate change and the green transition. We also offer suggestions on how policymakers can better engage older adults in the green transition, for example by involving the civil society organisations that represent their interests and by providing clear information on how all can contribute to achieve more sustainable lifestyles.

Our research shows that more than two thirds of older adults worry about climate change, many are trying to make climate-friendly choices, and they generally see climate policies as fair. However, older adults report challenges like increasing costs and accessibility issues, and they worry that increasing digitalisation will lead to exclusion or isolation.

KEY INSIGHTS

1. 68% of older adults in the Nordic Region worry about climate change.
2. Many older adults care about the environment and try to make more climate-friendly choices.
3. Older adults experience obstacles to choosing a greener lifestyle.
4. 53% of older adults think that the green transition will be beneficial for the economy.
5. 44% of older adults expect benefits for health and well-being.
6. 24% of older adults say climate policies have negative effects on their household finances.
7. 51% of older adults worry that the green transition may lead to price increases.
8. Older adults are more likely to perceive climate policies as fair compared to other age groups.
9. Representatives of older adults worry that digitalisation will lead to isolation and marginalisation.
10. Organisations and representatives of older adults want to be more involved in the green transition.

Introduction

Older adults are important agents in the green transition. They are a growing demographic group in the Nordic Region, and their lived experience spans decades. In their lifetimes, they have witnessed structural change and historical shifts in our environment and climate as well as changing climate policies to address them. Nonetheless, their involvement in the green transition remains limited, and their knowledge and experiences are often not fully recognised (OHCHR, 2021; Tapia et al., 2022). There is also only limited knowledge on how green transition policies^[66] influence older adults and their attitudes towards the green transition.

This policy memo aims to address this gap and present some messages from older adults to Nordic policymakers. What are they worried about? What are their expectations? The policy memo is based on a literature review, a Nordic survey and a focus group discussion with organisations representing older adults (see Box 1).

⁶⁶. By "green transition policies" we mean economic or environmental policies designed to lower greenhouse gas emissions and enable a transition to more sustainable economies and societies.

Box 1: Sources behind this policy memo

1. Literature review about the impacts of climate mitigation policies on different social groups in the Nordic Region

- Conducted: Spring 2022
- Method: A systematic search of academic papers, legal documents, and grey literature using a set of keywords

2. Nordic survey on the green transition

- Conducted: October – November 2022
- Interview method: Computer-assisted telephone interviews
- Target group: A representative sample of the adult population (interlocked gender-age quotas) in the Nordic Region
- Number of completed interviews:

Country	Number of completed interviews
Denmark	910
Finland	901
Iceland	380
Norway	909
Sweden	908
Faroe Islands	382
Greenland	405
Åland	383
Total	5178

All figures shown in this policy brief are based on the Nordic survey.

3. Focus group discussion on the green transition with civil society associations representing older adults.

- Conducted: 2 May 2023
- Method: Discussion held via digital meeting platform Microsoft Teams (plus one civil society organisation from Sweden supplied input to the discussion questions in written form.)
- Six participants from Denmark, Finland, Iceland, Norway, and the Faroe Islands
- All direct quotes that are included in the following sections come from the focus group discussion.

Older adults in the Nordic Region

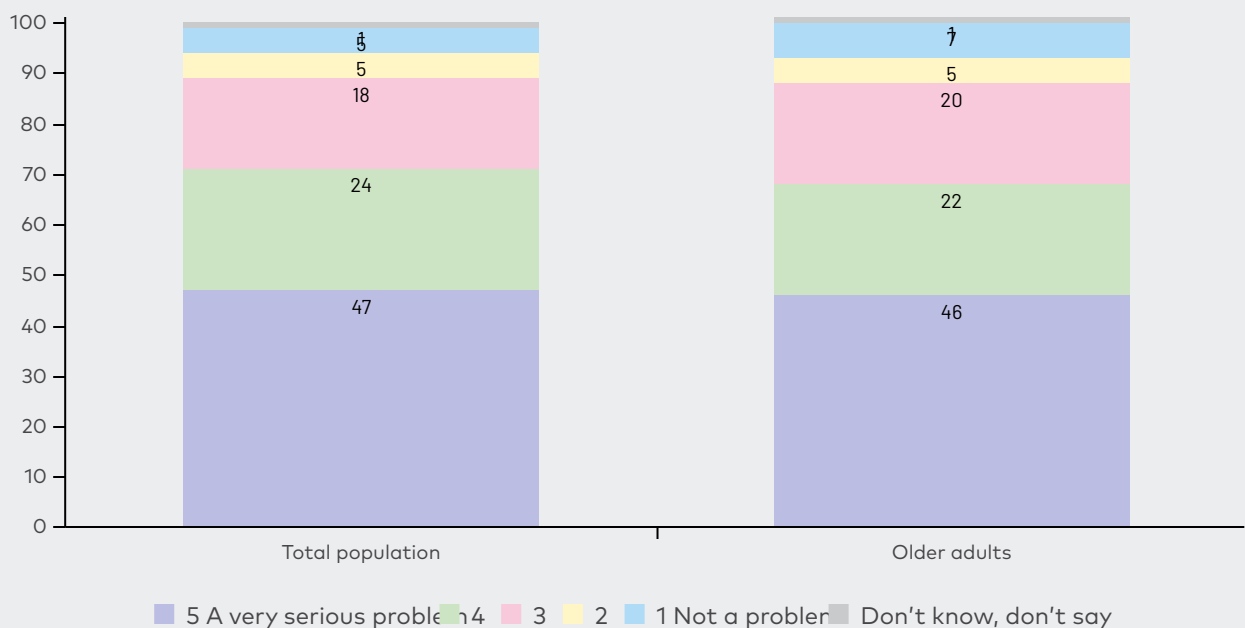
In this policy memo, "older adults" are defined as people aged 65 years and older. In the Nordic Region, 5.7 million people belonged to this age group in 2023, or 21% of the total Nordic population, with women making up 54% of the group due to their higher life expectancy (Nordic Statistics, 2024a). In the coming years, older adults will become an even larger demographic group; by 2040, the group will consist of 7.2 million people, meaning 25% of the Nordic population (Nordic Statistics, 2024b). In other words, older adults constitute an increasingly important demographic group with voting power, and green transition goals will be difficult to reach without including and mobilising them.

It is important to stress that older adults are not one homogenous population group. They differ in terms of employment status and living conditions, social networks and health, income, education, and values and political orientation – as well as in terms of their attitudes, worries, and perceptions of the green transition (Haq, 2021). This also implies that green transition policies can have different effects on older adults and their lifestyles, depending on their individual contexts. This is reflected in the survey results where older adults show the same variation in attitudes and diversity in how they answer the questions as people in other age groups.

INSIGHT #1: 68% of older adults in the Nordic Region worry about climate change

In a pan-Nordic survey that was conducted in the autumn of 2022, 68% of older adults stated that they see climate change as a serious or very serious problem. Among the total Nordic population, 71% shared this opinion (Figure 1). The difference is statistically significant and suggests that older adults are slightly less concerned about climate change than the general population. Nonetheless, older adults are somewhat more likely than the general population to agree that more ambitious climate policies are needed, even if this means that taxes increase. Fifty-one percent of older adults shared this opinion, compared to 49% among the total population.

Figure 1: To what extent do you think climate change is a problem?



Note: The figure shows the survey answers given by all respondents in the Nordic Region (left-hand side), and respondents in the age group 65+ (right-hand side). Respondents could answer the question on a scale from 1 to 5, with 1 meaning that climate change is "not a problem" and 5 meaning that climate change is "a very serious problem". The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 4 and 5. Hover over the legend to see the results.

Source: Tapia, Sánchez Gassen, & Lundgren (2023).

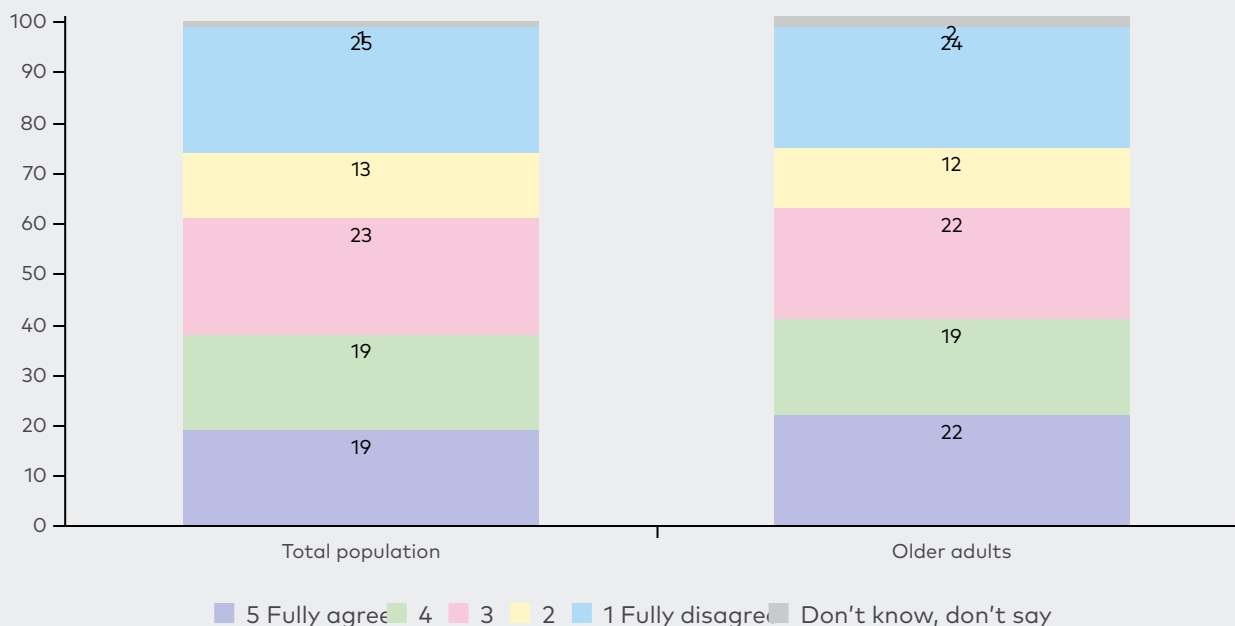
Research indicates that older adults have good reasons to be concerned about climate change. Numerous publications point out that older adults are generally more sensitive to environmental changes and climate events due to age-related health issues (see, for example, McDermott-Levy et al., 2019). If health and care services are disrupted due to climate emergencies, older adults may not get the treatment and care they need. Older adults who are in poor health, housebound, living alone, economically disadvantaged, and have few social contacts are particularly vulnerable (WHO, 2014). However, it is also important to note that many older adults today are more affluent and mobile than previous generations, giving them better resources to adapt to climate change (Hitchings & Day, 2011).

Age discrimination can worsen vulnerabilities towards climate change (United Nations General Assembly, 2021). For example, if older adults lack access to climate warnings and information on evacuation procedures, they may be slow to respond in emergencies. This issue is heightened if critical information is provided via apps and other digital tools, which some older adults are less comfortable using.

INSIGHT #2: Many older adults care about the environment and try to make more climate-friendly choices

Many older adults in the Nordic countries try to play their part in the green transition by changing their consumption behaviour and making more environmentally friendly choices. In the Nordic survey, around 40% of older adults state that they buy fewer products with a big carbon footprint, such as flight tickets or meat, due to climate concerns. This share is somewhat bigger than among the total Nordic population, where 38% say that they have changed their consumption choices (Figure 2).

Figure 2: To what extent do you agree or disagree with the following statement? – “I buy fewer products with a big climate footprint, such as meat or flight tickets, due to climate concerns.”



Note: The figure shows the survey answers given by all respondents in the Nordic Region (left-hand side), and respondents in the age group 65+ (right-hand side). Respondents could answer the question on a scale from 1 to 5, with 1 meaning that they “fully disagree” – and have not changed their consumption behaviour – and 5 meaning that they “fully agree” and buy less products with a big climate footprint. The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 4 and 5. Hover over the legend to see the results.

Source: Tapia, Sánchez Gassen, & Lundgren (2023).

In the survey, one in six older adults (16%) also state that they have recently renovated their home to make it more energy efficient with the help of financial support from the government. This share is higher than among other age groups. It may reflect the fact that older people are more likely to own their home than people in younger age groups and therefore may be more likely to invest in home improvements (Huynh et al., 2022).

INSIGHT #3: Older adults experience obstacles to choosing a greener lifestyle

While many older adults try to lead more environmentally friendly lifestyles, this can be challenging. Some of the key obstacles identified by civil society associations include:

Mobility

Buying an electric car is expensive, making it a challenging investment for older adults with a lower income. Public transport options, especially outside cities, may be limited and are not always accessible for older adults with mobility limitations. Cycling and walking can be difficult or impossible for older adults experiencing frailty or other health issues. If parking and driving opportunities in cities are reduced, this may limit older adults' participation in society.

Heating

Changing heating systems to more sustainable options implies long-term and expensive investments for households and may be unaffordable for older adults with limited income. Obtaining bank loans at a reasonable cost can also be difficult for older people, preventing many from making the necessary investments.

Recycling

Recycling stations can be difficult to reach for older adults who have mobility issues. Without help, they may not be able to dispose of their waste and recycle it according to the regulations.

As Nordic economies and societies are increasingly trying to reduce greenhouse gas emissions, and people are encouraged to adopt more environmentally friendly lifestyles, it is important to ensure that all groups in society can contribute. This includes identifying obstacles such as those mentioned above and implementing targeted solutions.

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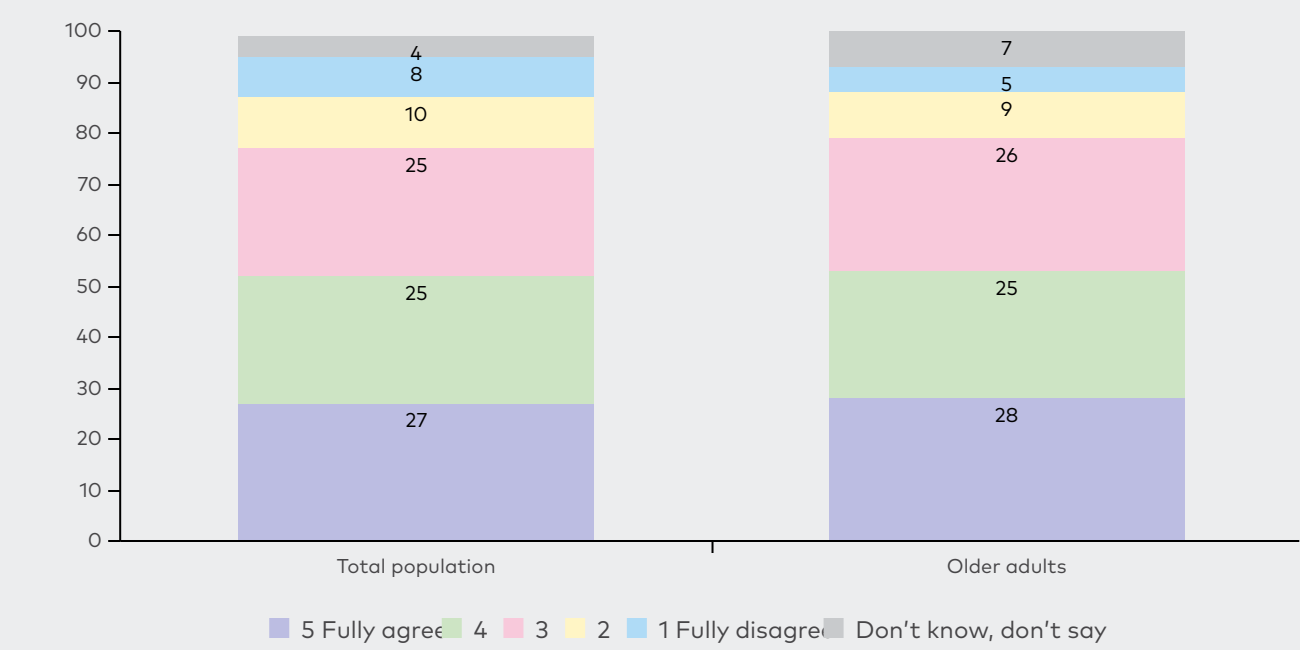
People with mobility problems cannot get rid of their waste. Our Council had to go to the municipality board to recommend that home helpers carried it 100 metres to recycle it.

- Older adult representative

INSIGHT #4: 53% of older adults think that the green transition will be beneficial for the economy

Despite these difficulties, many older adults are cautiously optimistic about the possible impacts of the green transition. For example, 53% of older adults state that action against climate change would be beneficial for their country's economy, and only 14% disagree (Figure 3). The rest of the Nordic survey respondents hold very similar views.

Figure 3: To what extent do you agree or disagree with the following statement? – “Taking action on climate change would be beneficial for the economy in my country.”



Note: The figure shows the survey answers given by all respondents in the Nordic Region (left-hand side), and respondents in the age group 65+ (right-hand side). Respondents could answer the question on a scale from 1 to 5, with 1 meaning that they “fully disagree” – i.e. they do not think that climate action is beneficial for the economy – and 5 meaning that they “fully agree” and expect positive economic impacts. The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 4 and 5 and 1 and 2. Hover over the legend to see the results.

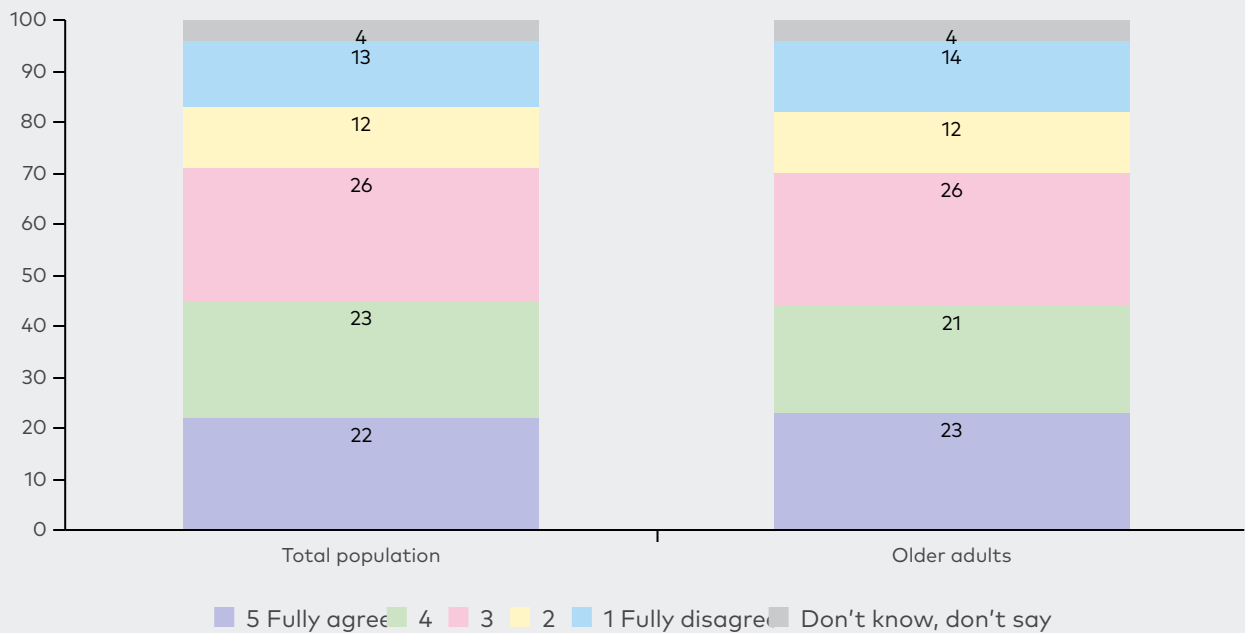
Source: Tapia, Sánchez Gassen, & Lundgren (2023).

INSIGHT #5: 44% of older adults expect benefits for health and well-being.

Almost half of all older adults (44%) responding to the Nordic survey expect that initiatives to fight climate change will improve health and well-being in the area where they live, compared to 45% among the total population.

Civil society associations and representatives of older adults argue that such health benefits can arise from, for example, a reduction of fossil-fuel car traffic in cities, which will improve air quality and reduce noise levels.

Figure 4: To what extent do you agree or disagree with the following statement? – “Initiatives to fight climate change will improve health and well-being in the area where I live.”



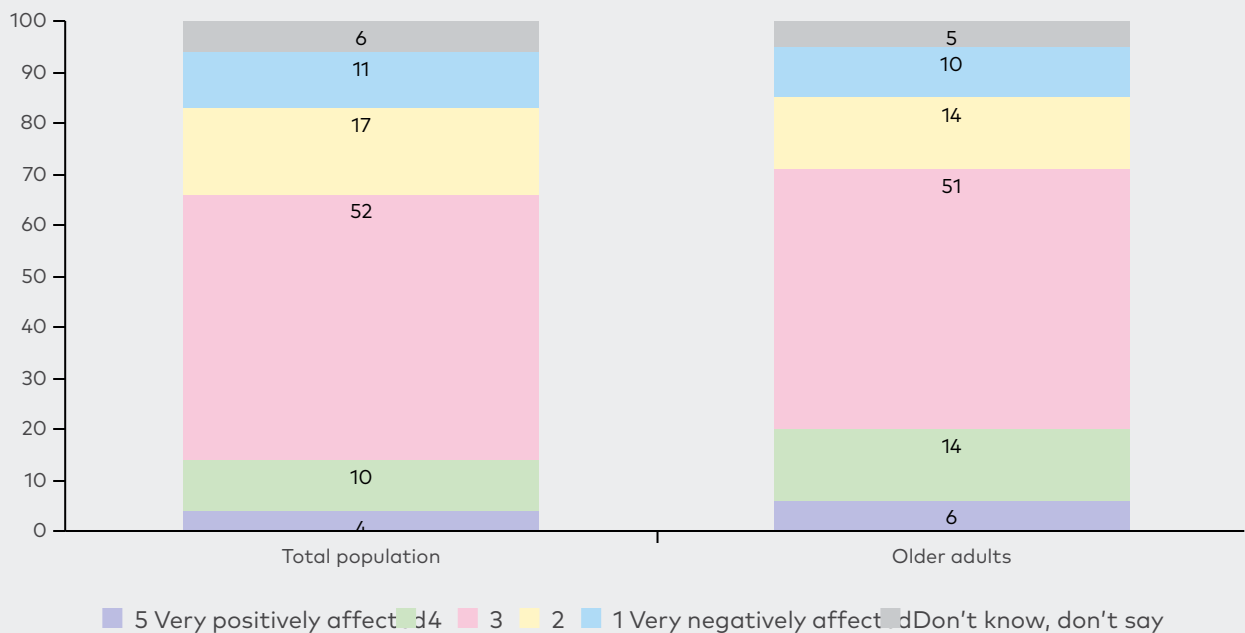
Note: The figure shows the survey answers given by all respondents in the Nordic Region (left-hand side), and respondents in the age group 65+ (right-hand side). Respondents could answer the question on a scale from 1 to 5, with 1 meaning that they “fully disagree” and 5 meaning that they “fully agree”. The results described in the text are calculated by adding the percentages of respondents who chose answer options 4 and 5. Hover over the legend to see the results.

Source: Tapia, Sánchez Gassen, & Lundgren (2023)

INSIGHT #6: 24% of older adults say climate policies have negative effects on their household finances

While older adults see many positive impacts and opportunities from the green transition, some of them also worry about more challenging consequences. When asked how climate policies affect their household finances, 24% state that they experience negative effects (Figure 5). This percentage is significantly lower than in the total Nordic population, where 28% experience such negative impacts.

Figure 5: Overall, how do you think that climate policies affect your household today in economic terms?



Note: The figure shows the survey answers given by all respondents in the Nordic Region (left-hand side), and respondents in the age group 65+ (right-hand side). Respondents could answer the question on a scale from 1 to 5, with 1 meaning their household is “very negatively affected” and 5 meaning that it is “very positively affected”. The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 1 and 2. Hover over the legend to see the results.

Source: Tapia, Sánchez Gassen, & Lundgren (2023).

Two areas are particularly relevant in this context:

Heating

If energy costs increase during the green transition, this may make it more challenging for older adults, particularly those with lower incomes, to keep their

homes warm in winter and cool during heat waves. Indeed, in the Nordic survey, 22% of older adults state that they struggle to keep their home at a comfortable temperature due to higher energy and electricity costs (total population: 23%).^[67] This is worrisome since older people are, on average, more sensitive to extreme temperatures than their younger peers. They therefore have a stronger need to maintain agreeable temperatures in their homes (Evans, 2013). On the other hand, it should be noted that older adults are a very diverse group. While some may be vulnerable to increases in energy costs, more affluent older adults may be able to afford higher costs. Some groups are even able to travel to warmer climates in the winter to avoid the cold and, in doing so, further contribute to ongoing climate change (Hitchings & Day, 2011).

Mobility and transport

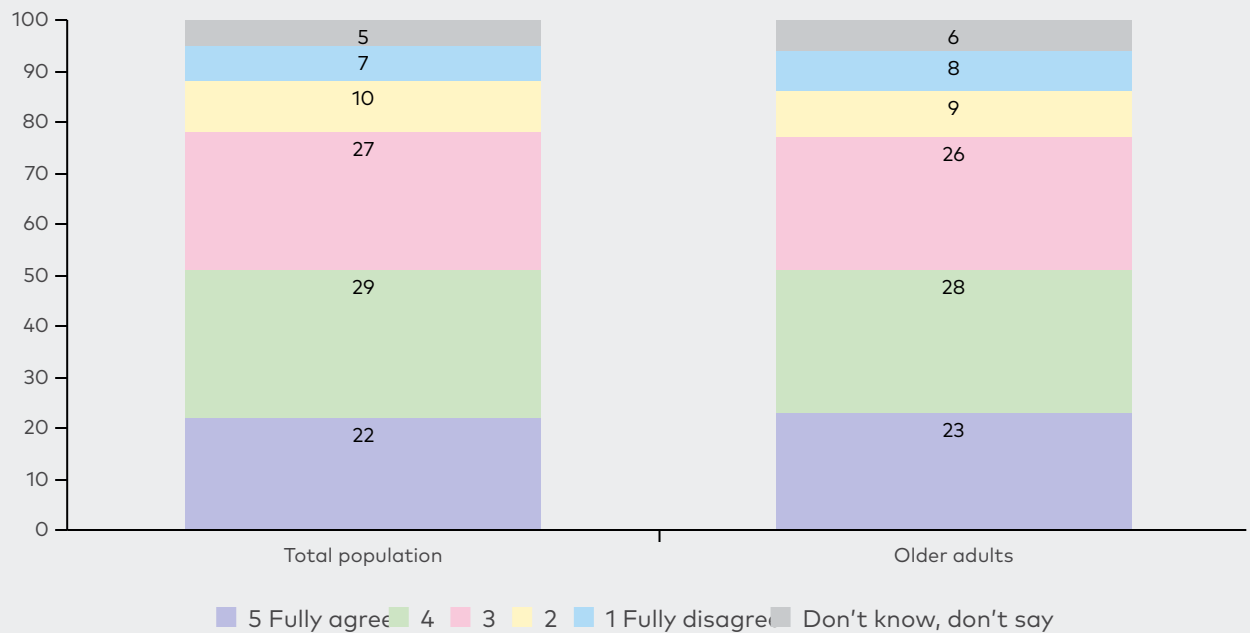
If transport costs increase during the green transition (e.g., due to rising fuel or electricity prices), this may limit the ability of some older adults to move around. In the Nordic survey, 30% of older adults (compared to 27% among the total population) say that they have already changed their transportation behaviours due to increases in fuel prices during 2021/2022. Changing transportation modes (e.g., from personal car use to public transport) is more likely to be an option for older adults living in towns or cities. For older adults living in rural and sparsely populated areas, public transport is often limited, and they may be more dependent on their cars. Increasing fuel prices may then limit their ability to move around and participate in social activities (Martiskainen et al., 2021).

INSIGHT #7: 51% of older adults worry that the green transition may lead to price increases

Looking forward, many older adults are also concerned about the impact of the green transition on cost of living (Figure 6). In the Nordic survey, 51% of all interviewed seniors expect that initiatives to fight climate change will lead to further price increases (total population: also 51%). Again, price increases would affect less affluent groups most strongly.

67. Note that the Nordic survey was conducted in the autumn of 2022, when energy prices rose steeply as a result of Russia's invasion of Ukraine.

Figure 6: To what extent do you agree or disagree with the following statement? – “Initiatives to fight climate change will increase prices and cost of living in the area where I live.”



Note: The figure shows the survey answers given by all respondents in the Nordic Region (left-hand side), and respondents in the age group 65+ (right-hand side). Respondents could answer the question on a scale from 1 to 5, with 1 meaning they “fully disagree” and 5 meaning that they “fully agree”. The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 4 and 5. Hover over the legend to see the results.

Source: Tapia, Sánchez Gassen, & Lundgren (2023).

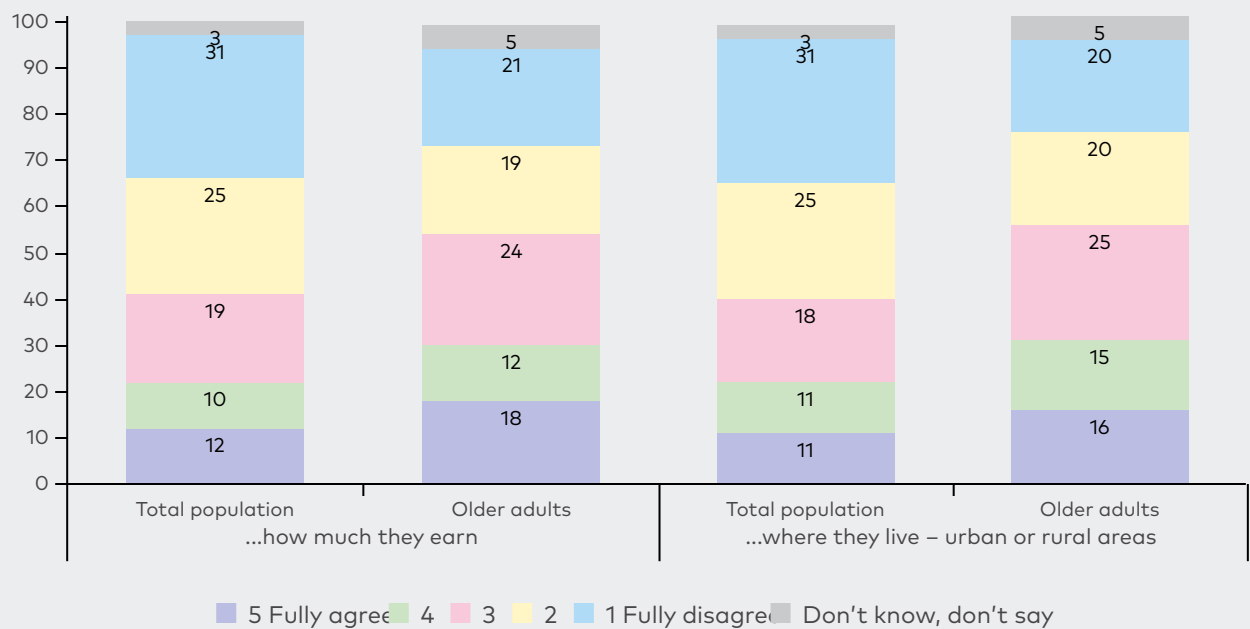
INSIGHT #8: Older adults are more likely to perceive climate policies as fair compared to other age groups.

One of the aims of the green transition is to leave no one behind and to ensure that no group will be disproportionately affected by climate and green transition policies. Older adults are more likely than other groups to perceive that these goals are met in the Nordic Region and that climate policies are fair.

In the Nordic survey, participants were asked about their views on the impact of climate policies and whether they think that all groups are equally affected by them, regardless of age, gender, income, country or origin, or place of residence. Thirty percent of older adults agree with the claim that climate policies affect everyone equally, irrespective of how much they earn, and the same share (31%) agrees with the claim that everyone is equally affected irrespective where one lives—in rural or urban areas (Figure 7). Among the total Nordic population, fewer respondents agree to these claims only 22% agree that everyone is equally affected

by climate policies, regardless of income or place of residence. This implies that older adults are more likely to perceive climate policies as fair than people in other age groups.

Figure 7: To what extent do you agree or disagree with the following statements? – “Everyone is equally affected by initiatives to fight climate change regardless of ...how much they earn. / ... where they live – urban or rural areas.”



Note: The figure shows the survey answers given by all respondents in the Nordic Region (left-hand side of each panel), and respondents in the age group 65+ (right-hand side). Respondents could answer the question on a scale from 1 to 5, with 1 meaning they “fully disagree” and 5 meaning that they “fully agree”. The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 1 and 2. Hover over the legend to see the results.

Source: Tapia, Sánchez Gassen, & Lundgren (2023).

INSIGHT #9: Representatives of older adults worry that digitalisation will lead to isolation and marginalisation

In parallel to the green transition, a digital transition (or digitalisation process) is taking place in the Nordic Region, where digital technology is increasingly integrated into all areas of our professional and social lives. This process is intertwined with the green transition. For example, in an effort to reduce the use of paper, more and more information is only available online. Similarly, it is becoming increasingly common to hold meetings, appointments, medical consultations, etc. through digital meeting tools to save travel time and costs.

While these transformations have many good effects—allowing people to save time and resources—they are challenging for older adults who do not feel comfortable using digital tools. Representatives of older adults express concerns that these groups are at risk of being left behind, with less access to information and an increased risk of experiencing isolation and loneliness. For example, for some older adults, appointments at their doctor's office are one opportunity to leave the house and meet people. For others, meeting a healthcare worker or nurse during check-ups at home can be a valuable human contact in everyday life. If such meetings are increasingly held on digital platforms, there is a risk that it reduces the already limited human contact that some isolated older adults have. Older adults who are less familiar with digital tools also risk marginalisation, since they may no longer have the same access to information and services as other social groups.

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A large part of older people don't communicate digitally and are not even capable of doing so.

- Older adult representative

INSIGHT #10: Organisations and representatives of older adults want to be more involved in the green transition

Many older adults play important roles in their communities through volunteering and local engagement. Many are also driven by thinking about their legacy and feel an obligation to leave the world as intact as possible for future generations (Frumkin et al., 2012). This potential can be mobilised for the green transition. Indeed, some groups of older adults have already become active and support ambitious climate goals, for example in Norway through the "Grandparents' Climate Campaign" or the Swedish "Grandparents for Future" who support Greta Thunberg's "Fridays for future" movement (Benediktsdóttir & Gíslason, 2023).

To be successful, ambitious climate goals and the transition towards greener societies and economies should be based on broad public support and engagement. Since older adults are a growing demographic group, they hold considerable electoral power, and their contribution is important. Researchers, interest groups, and international organisations alike stress the need to better include older adults and their interest organisations in policymaking processes to ensure that climate policies consider their diverse needs, capacities, and resources (see, for example, Pillemer et al., 2021; Haq, et al., 2008). Increasing the involvement of older adults in

discussions about the green transition can also help to avoid unintended consequences and to find approaches that limit negative impacts.

Councils for older adults (as they exist at the municipal level in many countries) and civil society organisations representing the interests of older adults can be first contact points for more closely engaging with this group. To empower older adults in the green transition and increase their involvement, it is important to fight ageism and abandon outdated stereotypes that describe them as passive, disinterested, or incapable of playing a key role (Hitchings & Day, 2011; OHCHR, 2021).

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When you get older, you get more concerned. Even if you are not going to live in this world so long, you are more concerned because you think of people coming after you.

- Older adult representative

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Suggestions from older adults for a just green transition

The representatives of older adults who took part in the project focus group make the following suggestions to national policymakers in the Nordic countries to ensure the green transition is just:

1: Systematically assess the impact of green transition policies on various age groups, including older adults

An easy approach to obtain information on likely impacts would be to collaborate with organisations who represent this group. Other suggestions would be to conduct regular surveys to understand how different groups experience and contribute to the green transition, to establish a permanent council of older adults at the national level, or to create a national ombudsman position who could represent the interests of older adults during discussions and policymaking processes related to the green transition.

2: Acknowledge the nuances within the group of older adults, and target solutions accordingly

Older adults are a diverse group with people differing, for example, in terms of their health status, educational and professional background, social networks, socio-economic condition and area of residence. This diversity needs to be respected when considering the interests and requirements of older adults during the green transition. For example, targeted loan schemes may help older adults with lower incomes to make green investments. Making exceptions for older adults with disabilities so that they can still drive and park in city centres may help them to maintain their mobility and social contacts.

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To maintain social justice I think it's important to distinguish between older people who are working and not, and between socio-economic groups.

- Older adult representative

3: Provide older adults with accessible information on the green transition and climate change

This should include information on how older adults can contribute to the green transition and protect themselves from the impacts of extreme weather events and emergencies. Information could be provided, e.g., via short, instructive videos on YouTube or other digital channels but also through non-digital channels such as radio, TV, or newspapers. It is equally important that information on public funds and subsidies to implement green solutions or investments (e.g., improvements of housing insulation, subsidies to buy electric cars, etc.) are accessible to older people so they do not miss out on these opportunities.

4: Consider providing support for a Nordic Network of Senior Councils

Such a network could link the councils of older adults that exist in the Nordic countries at the local level. It could provide a platform for exchange and learning for the council members but could also be a dialogue partner for Nordic policymakers who want to engage older adults in the green transition. It is important to draw on the wealth of experience and knowledge unique to older adults; their experience can help identify impacts and develop targeted solutions to move the green transition forward.

5: Create a green compensation fund at the national or Nordic level

The idea of green compensation funds is to compensate negative impacts of the green transition on particular industries or social groups through government subsidies. Resources from the funds could be allocated at local and regional levels.



People with disabilities and the green transition

SUMMARY

The green transition potentially offers many opportunities for people with disabilities if policies are implemented with the goal to leave no one behind. Possible benefits include improvements in health and well-being and new job opportunities in green industries. Nonetheless, there is also a risk that green transition policies may lead to new inequalities if the requirements and concerns of people with disabilities are not sufficiently considered.

This policy memo highlights some of the benefits and challenges that the green transition poses for people with disabilities. We also present several suggestions to policymakers on how to make the green transition disability-inclusive, for example by systematically employing universal design principles and an inclusiveness check.

KEY INSIGHTS

1. People with disabilities are vulnerable to the impacts of climate change.
2. People with disabilities see many opportunities with the green transition.
3. The green transition may perpetuate existing injustices if it is not achieved in a disability-inclusive way.
4. People with disabilities can face obstacles in choosing a greener lifestyle.
5. Organisations representing people with disabilities need to be actively engaged in the green transition.

Introduction

The United Nations has identified people with disabilities as one of the social groups who are particularly vulnerable to the impacts of climate change, such as heatwaves or flooding (Kosanovic et al., 2022). Such natural disasters can impair their access to health care services and medicine, safe housing, and sanitation (United Nations, 2020). This vulnerability is exacerbated by the exclusion of persons with disabilities from climate-related planning and decision-making processes (Jodoin et al., 2020). People with disabilities and their organisations are often not heard during the development and implementation of green transition initiatives or climate adaptation programmes. Such policies and plans may then not reflect the requirements and needs of people with disabilities and may even have unintended negative consequences for this group.

This policy memo aims to contribute to raising awareness of the role of persons with disabilities during the green transition. It highlights some of their concerns and expectations and presents some key messages to policymakers in the Nordic Region. The policy memo is based on a literature review and a focus group discussion with organisations representing people with disabilities (see Box 1).

Box 1: Sources behind this policy memo

1. Literature review about the impacts of climate mitigation policies on different social groups in the Nordic Region

- Conducted: Spring 2022
- Method: A systematic search of academic papers, legal documents and grey literature using a set of keywords

2. Focus group discussion on the green transition with civil society associations representing people with disabilities.

- Conducted: 30 May 2023
- Method: Discussion held in Reykjavik, Iceland (plus one representative from Denmark supplied input via an interview conducted on the digital meeting platform Microsoft Teams).
- Seven participants from Finland, Iceland, Norway, Sweden, Åland, the Faroe Islands, and Greenland

All direct quotes that are included in the following sections come from the focus group discussion.

People with disabilities in the Nordic Region

The UN Convention on the Rights of Persons with Disabilities (Article 1) defines people with disabilities as those “who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others” (United Nations, 2006). Rich data on the number of people who have some type of disability as well as their living conditions are available in the Nordic Region, but the estimates vary depending on how disability is defined (Jokinen et al., 2021; Grönvik, 2007; European Disability Expertise, n.d.). Depending on the source, it is estimated that between 10% and 30% of the Nordic population have some form of disability (Myndigheten för Delaktighet, 2022; Fundación Once et al., 2023).

People with disabilities are a very diverse group. They differ in terms of their values, experiences, living conditions, networks, education, and interests just as any other population group. Their disability-related capacities and needs span a wide spectrum, ranging from impairments of hearing, vision, speech, or mobility to intellectual impairments, mental health, and autism spectrum conditions. Some people experience multiple disabilities and may simultaneously belong to other marginalised or vulnerable groups, such as the elderly, the poor, or ethnic minorities. Due to this diversity, green transition policies may affect people with disabilities in very different ways, and their role and engagement in the green transition may also differ.

The prevalence of disability increases with age, mostly due to biological processes related to ageing, such as eye degeneration and declining bone and muscle density.

Almost everyone will experience some kind of temporary or permanent disability during their lifetime (Schur et al., 2013). Since populations in Europe are ageing and older adults will form a larger part of our populations, it is expected that the number of people living with a disability will increase in the years to come (Fundación Once et al., 2023). If the green transition shall be based on broad societal support and empower everyone to contribute, people with disabilities must be included in green transition planning and implementation. Otherwise, there is a risk of leaving out a large and increasing share of the population.

Despite this, there is limited research and knowledge on how the green transition can be designed and implemented in a way that engages people with disabilities and respects their interests, needs, and rights. This policy memo aims to contribute by offering five insights about people with disabilities and the green transition in the Nordic Region.

INSIGHT #1: People with disabilities are vulnerable to the impacts of climate change

According to the United Nations (2023) climate change can have particularly severe effects on people with disabilities. For example, persons who experience challenges with mobility or impaired judgement due to intellectual disabilities may face bigger difficulties to evacuate in the event of sudden natural disasters such as floods, storms, or fires. Natural emergencies may also disrupt access to medication or medical services which may be vital for people with disabilities. If damage is done to infrastructure, it may be more difficult for people with disabilities to get access to transportation, emergency shelter, and housing suitable for their needs. People with disabilities may also be more vulnerable to slow onset effects of climate change such as the increase in average temperature. For example, people experiencing multiple sclerosis or cerebral palsy can have impaired thermoregulation and experience greater sensitivity to heat (Gaskin et al., 2017).

These different risks can be aggravated if public communication and information about natural hazards, evacuation procedures, and disaster response plans are not disability inclusive. It is therefore crucial that people with disabilities and their representing organisations are consulted in the planning of climate mitigation and adaptation approaches to ensure that they meet the needs of people with different types of disability.

INSIGHT #2: People with disabilities see many opportunities with the green transition

The green transition can have many benefits for people with disabilities, provided that policies and initiatives are disability inclusive. Several potential positive impacts stand out:

Improved health and well-being

The transition towards carbon-neutral economies and societies can create health benefits for people with disabilities as well as for other population groups (McCollum et al., 2013). For example, policies that aim at reducing fossil-fuel car traffic in cities can lead to cleaner air and less noise. A change towards more sustainable agricultural practices can contribute to cleaner water and more sustainable food production. An increase in green areas in cities can improve well-being and quality of life. These developments can benefit people with disabilities as well as other population groups.

New employment opportunities

People with disabilities are among the most disadvantaged groups in the Nordic labour markets, facing high levels of unemployment, low pay and low prospects for promotion, and other types of discrimination (Lindberg, 2021). The green transition offers various opportunities to improve the situation and enhance decent work options for people with disabilities. Research on the labour market impacts of the green transition overall conclude that some workers will be displaced during the green transition, in particular in so-called “brown sectors”, but new jobs will be created in green industries, for instance, in relation to green energy, sustainable transportation, or the circular economy. The green transition will also create opportunities for upskilling and reskilling. All of this creates new opportunities for employment, also for people with disabilities (Fundación Once et al., 2023).

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The labour market will look completely different, so we need to re-evaluate: what is a job, what is employment? And how can everyone be involved?

- Civil society representative

Better inclusion of people with disabilities in the Nordic labour markets would directly benefit this group, reduce their risk of poverty, and prevent social exclusion. In addition, it would yield important benefits for society at large by helping to address labour shortages in green industries and reverse the macroeconomic losses that are caused by the exclusion of people with disabilities. Improving their labour market inclusion can also help to undo misconceptions and prejudices about their capacities, which may contribute to better inclusion in other areas of public life.

Inclusive innovation

The green transition offers many opportunities for innovation and the design of new sustainable products, services, and infrastructure. This may include, for example, the development of electric vehicles and electric infrastructure, green city planning, or new digital apps and tools. Integrating universal design principles into the green transition (see Box 2) can contribute to making these new designs and innovations accessible and inclusive.

Box 2: Universal design

The Centre for Excellence in Universal Design (n.d.) defines universal design as a “fundamental condition of good design”. The concept refers to “the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability.” Working with universal design principles implies that buildings, products, or services are designed in such a way that they meet the needs and requirements of various population groups, including people with different types of disability.

INSIGHT #3: The green transition may perpetuate existing injustices if it is not achieved in a disability-inclusive way

Many of the potential benefits described above will not materialise on their own. Deliberate efforts are needed to ensure that people with disabilities can benefit on equal terms from the opportunities offered by the green transition. If not done in an inclusive way, there is a risk that people with disabilities will be left behind. Some of the potential negative impacts of the green transition for people with disabilities include the following:

Inaccessible innovations

Innovations and new products or services often reach people with disabilities last. They may require adjustments so that people with disabilities can use them, and such adjustments may only become available with delay and/or at a higher cost. For example, electric vehicles can be made accessible for people with disabilities, but it generally requires expensive adjustments, and not all adaptations are technically feasible. Similarly, charging stations for electric vehicles may not be accessible for people with disabilities depending on their placement and how they have to be handled (BraunAbility, n.d.).

By consulting interest organisations who represent persons with disabilities during planning and development processes, the needs of all people can be considered from the beginning. Employing a universal design perspective during the development phase can also help to ensure that all groups in society can participate and make use of innovations.

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People with disabilities are entitled to subsidies to buy cars if they can't use public transport. Those grants are barely enough to buy a car, let alone electric cars.

- Civil society representative

Increasing prices

People with disabilities and their households, on average, have lower incomes than people without disabilities (Ivanova & Middlemiss, 2021). At the same time, living with a disability can entail higher costs. For example, some persons with disabilities need to keep their home at a specific temperature or use more electricity to power life-supporting medical equipment or store medication. Others may require a specific type of diet. If prices for energy, food, or other key commodities increase during the green transition, people with disabilities may face difficulties in meeting these extra costs, thereby increasing their risk of poverty.

Increasing taxes on less sustainable products or services, intended to nudge people to reduce their consumption, can have the same effect. If people with disabilities are dependent on such products or services due to their special needs, they may not have the same options to change their consumption behaviours. The green transition may also have indirect price effects that disproportionately affect people with disabilities. For example, if prices for medication increase as a reaction to higher energy or transport costs, people with disabilities may have little choice but to shoulder the higher costs.

Digitalisation

In parallel to the green transition, a digitalisation process is changing our economies and societies. Digital tools play an increasingly larger role in our social and professional lives. An array of activities is now happening online, including doctor's appointments, meetings, and entertainment, and more and more information about services is no longer available in print but only in digital format.

For people with disabilities who can use digital tools, these developments offer great opportunities for inclusion and participation. Nonetheless, some persons with disabilities face challenges using digital tools or may even be unable to do so. For example, digital meetings with many participants who show up in small side-by-side screens on the computer monitor are very difficult to follow for people who lip-read. People with cognitive disabilities or those who experience impairments of vision can also face difficulties in joining digital meetings on popular platforms such as Teams or Zoom. Similarly, not all people with disabilities can use electronic ID solutions which may be important to obtain health care or bank information. It is important that alternative options are developed and offered to these groups so that they do not miss out on important information and opportunities.



You cannot abolish all staff members in services, some people need direct support. Digital tools cannot replace everything.

- Civil society representative

Unintended consequences of green transition laws

Policies to reduce carbon emissions can have unintended negative consequences for people with disabilities if their needs and requirements are not considered during the design phase. For example, new rules in the European Union have banned the sale of single-use plastics such as cups, straws, or plastic plates from European markets (European Commission, n.d.). This new regulation has positive impacts in terms of reducing plastic waste. Nonetheless, it creates challenges for some people with disabilities who require plastic straws on a daily basis. People who experience limb paralysis and cannot use their hands and cutlery during meals need straws to eat independently. Straws made out of alternative materials are not always a viable alternative since they may be too costly, may not be flexible enough or may entail sanitation or injury risks (Jenks & Obringer, 2020). It is important to consider how new environmental regulations may affect the lives of people with disabilities and offer exceptions or viable alternatives to ensure that they are not put at a disadvantage.

INSIGHT #4: People with disabilities can face obstacles in choosing a greener lifestyle

During the last years, the Nordic Council of Ministers has worked towards 10 focus areas which form part of the goal to become the most sustainable and integrated region of the world by 2030. One of these focus areas has been to involve everyone in the Nordic Region in the green transition (Nordic Council of Ministers, n.d.). To achieve this goal, it is important to identify obstacles that hinder different groups from adopting a more sustainable lifestyle. People with disabilities encounter many such obstacles in their day-to-day lives which make it difficult to play an active role in the green transition:

Mobility

An important element of the green transition is to make transport systems and mobility patterns more sustainable. To reduce fuel consumption and greenhouse gas emissions, the Nordic countries promote public transport, cycling, and electric vehicles, amongst others (Mellin et al., 2021). Nonetheless, people with disabilities may face challenges in changing their mobility behaviours. For example, public transport may not be accessible for people with disabilities, or they may require extra support to use it. People in wheelchairs may need help to access a train or bus, and people with cognitive disabilities or vision impairments may need support to navigate train stations or bus stops. If such support is not available and personal assistants cannot join without extra costs, some groups of people may not be able to use public transport. During icy and snowy conditions, bus stops and other public transport stations may even be inaccessible for people in wheelchairs (Jodoin et al., 2020). Similarly, as described above, adapting electric vehicles to the needs of people with disabilities is costly and may be unaffordable to some. It can also be time consuming and riddled with technical challenges. Cycling is also not a viable alternative for people with some types of disability or requires customised cycling designs that are more expensive compared to standard bicycles. People with disabilities may therefore depend on fossil-fuel cars to move around and participate in society to a stronger extent than other groups.

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You want people to use more public transport but not everyone is able to use it. We are already struggling with assistants on commuter trains in Sweden. They are removing the assistants - train attendants.

- Civil society representative

City planners are increasingly trying to limit the access of fossil-fuel cars to city centres and are reclaiming parking spaces for pedestrians and cyclists. Such transformations are positive in that they reduce car traffic, leading to cleaner air, less noise, and more people-centred public spaces. Nonetheless, these initiatives may reduce the mobility options of people with disabilities who depend on their cars. It is important to consider the needs of different population groups and provide exceptions or viable alternatives for people with disabilities to ensure that they can continue to participate in society on equal terms (Mellin et al., 2021). Solutions that help people with disabilities can often also benefit other population groups. For example, improving access to public transport increases opportunities for parents with strollers or older adults who have difficulties walking.

Recycling

The Nordic countries have ambitious goals to increase the rate of recycling and reuse of materials. Nonetheless, many people with disabilities find it difficult to take active part in this (Fagerholm et al., 2023). For example, recycling of household waste is challenging for people with visual impairments, and recycling stations are not always accessible for people in wheelchairs. If recycling stations are few and far apart, they may need to be accessed by car, creating challenges for people with disabilities who cannot drive or do not own a car.

Green products

Green products and services are often more expensive than conventional options and may require personal investments or bank loans. For example, electric vehicles tend to be more expensive than fossil-fuel cars and the installation of solar cells or heat pumps are costly. For people with disabilities, it may be difficult to choose such products since, on average, they have lower incomes than the rest of the population and are at a higher risk of experiencing poverty (Ivanova & Middlemiss, 2021). These groups may need financial support to be able to switch to greener solutions on equal terms.

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**I think the biggest challenges are related to affordability.
Poverty is always a barrier and good solutions cost money.**

- Civil society representative

INSIGHT #5: Organisations representing people with disabilities need to be actively engaged in the green transition

To ensure that people with disabilities can take part in the green transition and do not face unintended negative consequences, it is important to include their perspectives from the start (Fenney Salkeld, 2016). Civil society organisations representing people with disabilities stress the necessity of their active engagement in the planning, design, and implementation of green transition

policies and initiatives. This is also required under the UN Convention on the Rights of Persons with Disabilities, which all Nordic countries have ratified (United Nations, 2018). Their involvement can contribute to identifying possible negative impacts of green transition policies and to developing solutions that are disability inclusive. The civil society representatives argue that they are too often excluded or heard too late, limiting their opportunities to contribute to the green transition with their ideas and expertise.



Organisations representing people with disabilities should be involved in decision-making. This is something we often remind politicians about.

- Civil society representative

The involvement of people with disabilities and their organisations can take various forms such as workshops, discussions, citizen panels, or expert hearings. Importantly, the impact of such participatory approaches needs to be clarified so that participants know how their input will contribute to the green transition. Participation needs to happen at an early stage of policy development, so that the input can still make a difference. Equally important is the accessibility of such meetings and gatherings, both in terms of time and location. Some participants may require the presence of a personal assistant to participate in meetings, while others need support with transport to meeting venues. Reasonable adjustments should be made to accommodate such needs and make meetings fully inclusive (European Commission, 2021).

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Suggestions from people with disabilities for a just green transition

Civil society organisations representing people with disabilities make the following suggestions to policymakers at national levels of governance to ensure the green transition is just:

1: Consider creating citizen panels to provide advice and feedback

The perspectives of people with disabilities need to be accounted for during the green transition already during the development phase of policies and initiatives. One idea to achieve this is to create a permanent citizen panel at national or Nordic level consisting of people with different types of disabilities who could provide input and advice on policy initiatives, infrastructure projects, and more. Consultations with the panel should happen at an early stage so that their input can still make a difference. A dedicated contact person should maintain contact with the panel. Panel members should be financially compensated for their time and efforts, especially if processes are time consuming.



Bring together a group of people with different types of disabilities - sensory, mobility, mental. Let them test and advise on innovations.

- Civil society representative

2: Implement an “inclusiveness check” for new policies and initiatives

At European level, the European Commission (2024) has made a commitment to conduct a “youth check” when designing new policies. It implies that the impact of a new policy on young people is systematically considered during the design phase. This includes youth consultations for initiatives flagged as particularly relevant for young people as well as impact assessments and policy dialogues between youth and commissioners. Policymakers should consider establishing similar routines in the form of an “inclusiveness check” to analyse how green transition policies affect people with different types of abilities. The guiding question should be whether there is a risk that they will be excluded or negatively affected, and what could be done to prevent this.

3: Promote a universal design perspective during the green transition

Universal design implies that developers ask whether places, products, or services can be utilised by all to the greatest extent possible (see Box 2). It entails identifying obstacles which may stand in the way when using or accessing a new product or environment. A universal design perspective can increase the opportunities for people with disabilities, but also other groups, to fully participate and benefit from the green transition. In urban planning, a universal design perspective can inform the development of housing, transport, public space, water and sanitation, as well as many other areas.

4: Offer financial support to people with disabilities to make sustainable investments

As argued in this memo, many green innovations are expensive and require access to personal savings or bank loans. People with disabilities, who on average receive lower incomes than other groups and are at higher risk of poverty, may not be able to afford such investments. Subsidies or targeted, affordable loan schemes could help people with disabilities to make green investments. This would promote the green transition in the Nordic societies and enable people with disabilities to participate and benefit on equal terms.

5: Invest in upskilling and reskilling for people with disabilities

A range of green jobs are likely to be created during the green transition. This offers new opportunities for people with disabilities. To ensure that they can take advantage of these new jobs, it is important to include them in training and reskilling programmes. Such programmes must be disability inclusive and should specifically target vulnerable groups in the Nordic labour markets, including people with disabilities, to reach out to their untapped potential (Fundación Once et al., 2023).



Workers in carbon-heavy industries and the green transition

SUMMARY

The green transition will lead to the creation of new green jobs in the Nordic Region. Nonetheless, some jobs—particularly those in carbon-heavy industries—may disappear or undergo profound changes in terms of job requirements and tasks. Our research shows that 37% of employees in carbon-heavy industries worry about job loss due to the green transition, while only 24% of people working in other sectors share this sentiment. Employees in carbon-heavy sectors are also less optimistic about potential economic gains from the green transition than the rest of the population and worry more about price increases.

In this policy memo, we present new statistics and insights on people who work in carbon-heavy sectors in the Nordic Region. We also offer suggestions on how to support this group—for example, by expanding adult education programmes for re-skilling and up-skilling and by maintaining a close dialogue between the government, industry organisations and trade unions.

KEY INSIGHTS

1. People working in carbon-heavy industries are less worried about climate change than employees in other sectors.
2. 35% of people in carbon-heavy sectors say we should spend more public resources on fighting climate change – compared to 53% of employees in other sectors.
3. Employees in carbon-heavy sectors are less optimistic that the green transition will bring economic benefits.
4. 37% of people in carbon-heavy sectors worry about job loss due to the green transition.
5. 38% of employees in carbon-heavy sectors say the green transition has a negative impact on their household economy.
6. Employees in carbon-heavy sectors are more worried than others about future price increases from the green transition.
7. More research is needed about the skills requirements in a greener economy.
8. Trust in the Nordic welfare systems is essential to maintain support for the green transition.
9. The involvement of social partners in the green transition is necessary for ensuring fairness.

Introduction

The green transition will have profound impacts on the Nordic economies and labour markets. The International Labour Organisation (ILO) argues that the green transition will impact jobs in at least three ways (see Tapia et al., 2022): First, some jobs are likely to disappear during the green transition, especially in carbon-heavy sectors. Second, new jobs will be created, especially in green sectors. Most studies conclude that the net effect of these trends will be small but positive (Fragkiadakis et al., 2023; Malerba & Wiebe, 2021; Olsen, 2009). In other words, the number of new jobs will likely be higher than the number of jobs that will disappear. Third, many existing jobs are likely to undergo a transformation and see changes of tasks and routines, potentially requiring new skills and education. Some of these impacts will emerge in the short run, while other effects may only appear in the longer term as value chains adjust to new demands and requirements (Fankhauser et al., 2008). Some jobs may also be relocated during the green transition, for example towards regions with good access to renewable energy or mineral resources (Martinez-Fernandez et al., 2010).

The United Nations and the European Union have declared the goal that the green transition shall “leave no one behind”. To achieve this goal, it is important to understand the impacts of the green transition on diverse sectors. Even if the aggregated labour market impacts of the green transition are likely to be positive, climate policies may still have a negative effect on employment for specific sectors and regions, or among some groups of employees (Malerba & Wiebe, 2021; Marin & Vona, 2019).

What are the worries and expectations of employees – in particular those working in carbon-heavy sectors - and how can policymakers best support them during the green transition? This policy memo sheds light on these questions. It is based on a literature review, a Nordic survey and a focus group discussion with labour unions for the Nordic countries. (see Box 1).

Box 1: Sources behind this policy memo

1. Literature review about the impacts of climate mitigation policies on different social groups in the Nordic Region

- Conducted: Spring 2022
- Method: A systematic search of academic papers, legal documents, and grey literature using a set of keywords

2. Nordic survey on the green transition

- Conducted: October – November 2022
- Interview method: Computer-assisted telephone interviews
- Target group: A representative sample of the adult population (interlocked gender-age quotas) in the Nordic Region
- Number of completed interviews:

Country	Number of completed interviews
Denmark	910
Finland	901
Iceland	380

Norway	909
Sweden	908
Faroe Islands	382
Greenland	405
Åland	383
Total	5178

All figures shown in this policy brief are based on the Nordic survey.

3. Focus group discussion on the green transition with Nordic labour unions.

- Conducted: 9 March 2023. Follow-up discussion conducted on 3 June 2024.
- Method: Discussions held in Copenhagen and Stockholm.
- Eight participants from Denmark, Finland, Iceland, Norway, and Sweden
- All direct quotes that are included in the following sections come from the focus group discussion.

Labour market impacts of the green transition

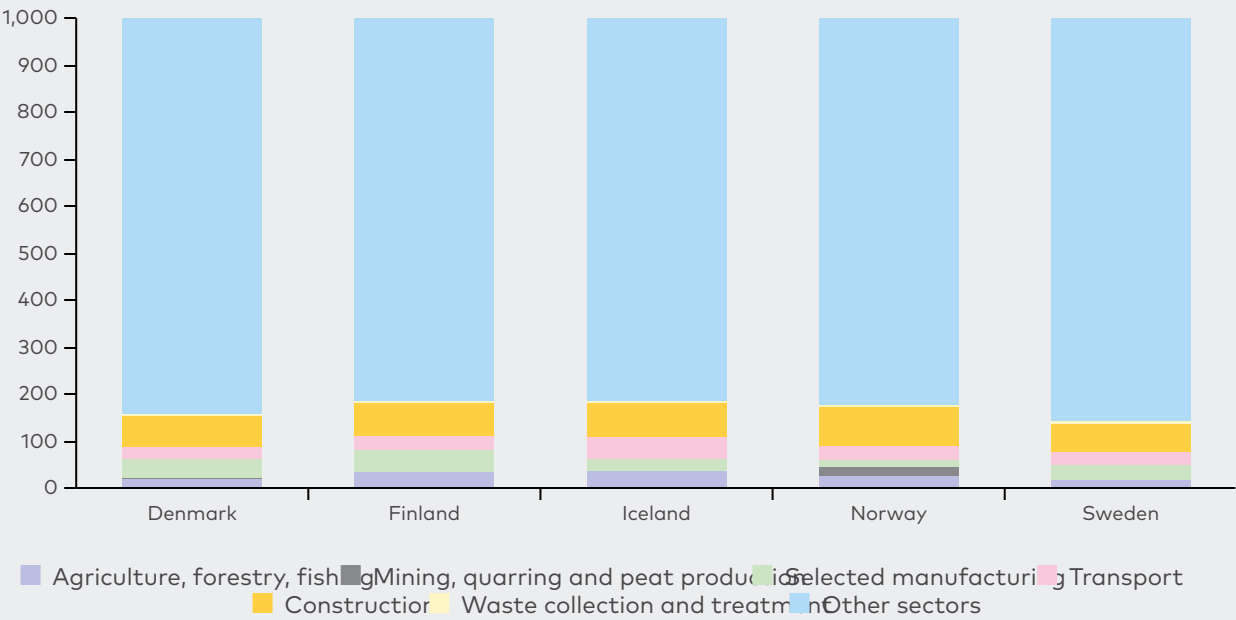
This policy memo discusses concerns and perspectives of workers during the green transition, focusing in particular on people employed in carbon-heavy industries. People who work in such industries will likely experience greater transformations of their work tasks and may even face unemployment during the green transition (Tapia et al., 2022). Survey results that we present in the following sections allow us to distinguish between the attitudes and views of people in carbon-heavy industries and people who work in other sectors of the economy. A focus group discussion with labour union representatives from all Nordic countries provided additional insights on how workers in different sectors of the Nordic economies experience the green transition and which issues are most pressing. Finally, a literature review provided information on key labour market impacts (see Box 1).

According to the National Communications to the United Nations Framework on Climate Change (UNFCCC), the industries that account for the largest share of

greenhouse gas emissions in the Nordic countries include agriculture, forestry, and fishing; mining, quarrying, and peat production; oil and chemical industry, pulp paper and cardboard production, cement and ceramics, steel and metal industries, and power plants; transportation of people and goods; building and construction; as well as waste collection and treatment (Tapia et al., 2023). In these industries, major efforts will be required in the coming years to lower emissions.

Data from the European Labour Force Survey (Eurostat, 2024) suggest that between 15% and 20% of all employees in the Nordic countries worked in these carbon-intensive sectors in 2023 (Figure 1). In the following sections, we present nine insights on workers and employees who work in carbon-heavy sectors and share several suggestions from labour union representatives on how national governments in the Nordic countries can support a just green transition on the labour markets.

Figure 1: Employees by country and sector of employment, 2023



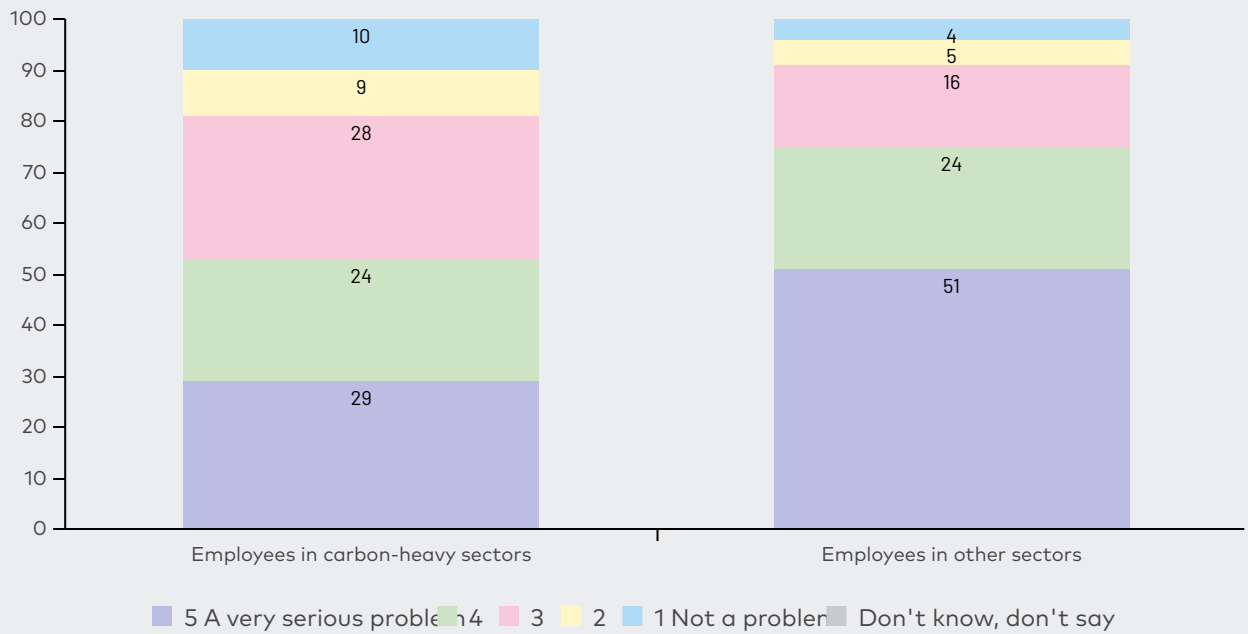
Note: Hover over the legend to see the results.
Source: European Labour Force Survey (Eurostat, 2024).

INSIGHT #1: People working in carbon-heavy industries are less worried about climate change than employees in other sectors

In a pan-Nordic survey conducted in the autumn of 2022 (see Box 1), 53% percent of all respondents who work in carbon-heavy sectors stated that they consider climate change a serious or very serious problem (Figure 2). One in five employees

(19%) in these sectors answered that climate change is not a problem or only a minor problem. Among employees in other sectors, many more are concerned about climate change—75% consider it a serious or very serious challenge.

Figure 2: To what extent do you think climate change is a problem?



Note: The figure shows the survey answers given by respondents who work in carbon-heavy sectors and employees in other sectors. For a list of carbon-heavy sectors, see section on 'Labour market impacts of the green transition'. above. Respondents could answer the question on a scale from 1 to 5, with 1 meaning that climate change is "not a problem" and 5 meaning that climate change is "a very serious problem". The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 4 and 5, and 1 and 2, respectively. Hover over the legend to see the results.

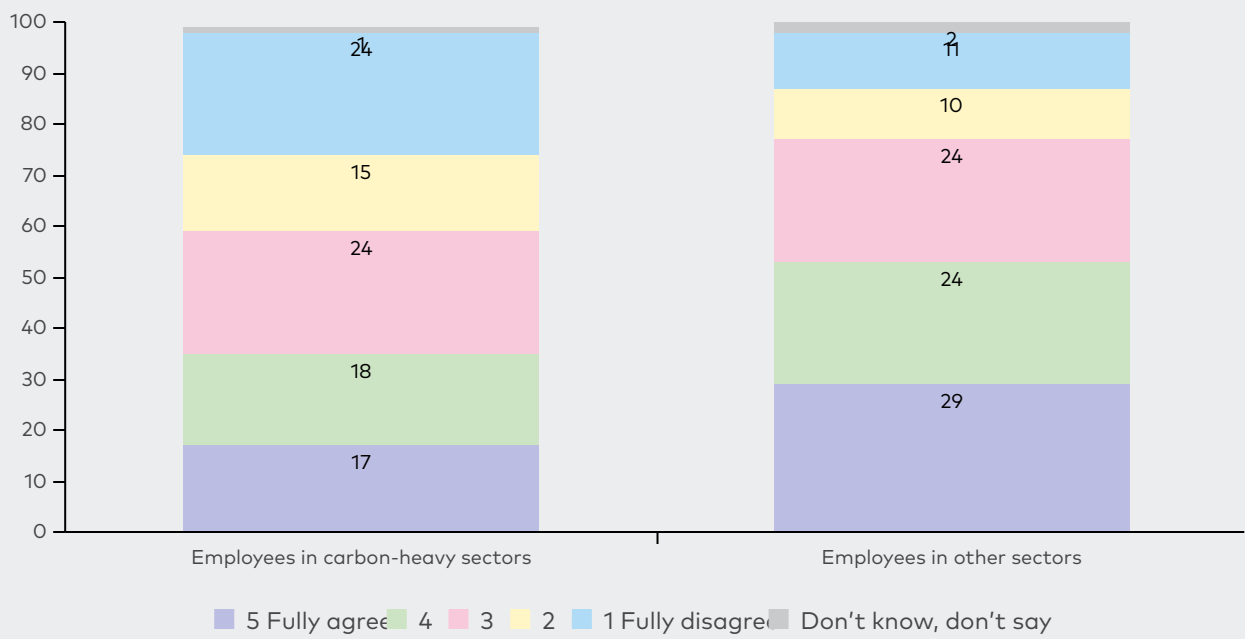
Source: Tapia, Sánchez Gassen, & Lundgren (2023).

INSIGHT #2: 35% of people in carbon-heavy sectors say that we should spend more public resources on fighting climate change – compared to 53% of employees in other sectors

In the same Nordic survey, respondents were asked whether more public financial resources should be invested to protect the climate, even if this would imply that taxes must increase. While half of employees working in less carbon-heavy ("other") sectors (53%) were positive to this suggestion, people working in carbon-heavy sectors (35%) were markedly less likely to support such a proposal (Figure 3). Taken together, employees who work in carbon-heavy sectors are distinct by being less

likely to worry about climate change than their counterparts working in other sectors, and also by feeling less of a need for more ambitious climate policies.

Figure 3: To what extent do you agree or disagree with the following statement? – “More public financial resources should be invested in preventing climate change, even if it means that taxes are increased.”



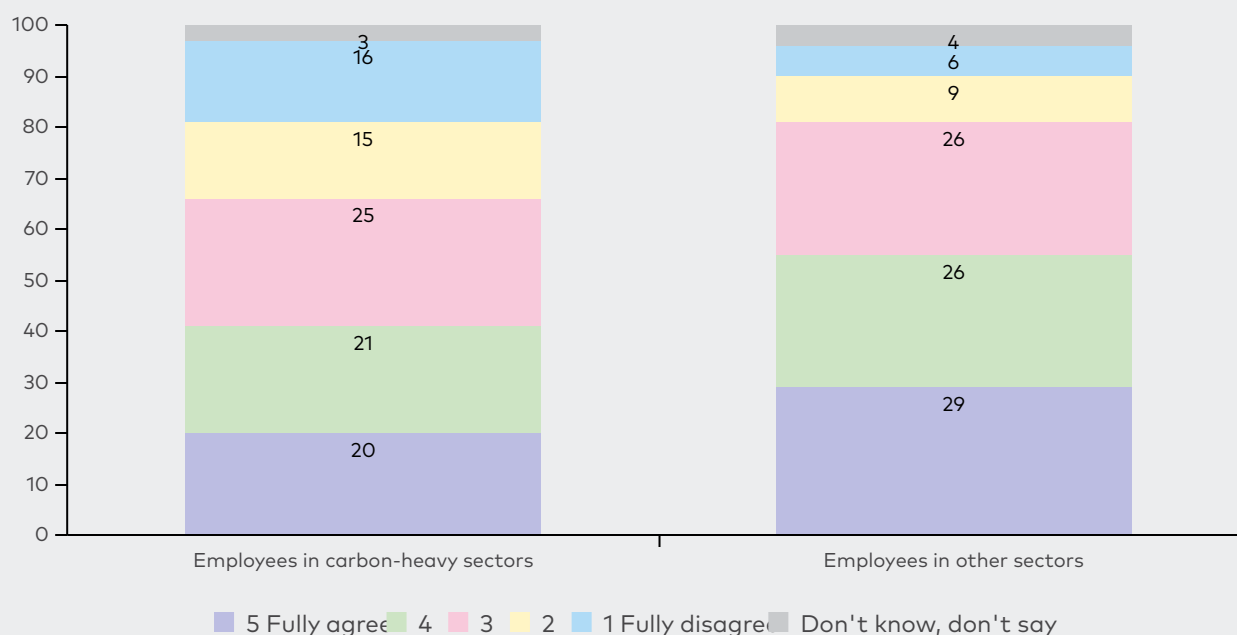
Note: The figure shows the survey answers given by respondents who work in carbon-heavy sectors and employees in other sectors. For a list of carbon-heavy sectors, see section on 'Labour market impacts of the green transition' above. Respondents could answer the question on a scale from 1 to 5, with 1 meaning that they “fully disagree” and 5 meaning that they “fully agree”. The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 4 and 5. Hover over the legend to see the results.

Source: Tapia, Sánchez Gassen, & Lundgren (2023).

INSIGHT #3: Employees in carbon-heavy sectors are less optimistic that the green transition will bring economic benefits

People who work in carbon-heavy sectors are also comparatively pessimistic with respect to the economic impact of the green transition. When asked whether they think that climate action would be beneficial for the economy in their country, 41% among this group fully or partly agree (Figure 4). Among employees working in other sectors, more than half (55%) expect positive impacts.

Figure 4: To what extent do you agree or disagree with the following statement? – “Taking action on climate change would be beneficial for the economy in my country.”



Note: The figure shows the survey answers given by respondents who work in carbon-heavy sectors and employees in other sectors. For a list of carbon-heavy sectors, see section on 'Labour market impacts of the green transition' above. Respondents could answer the question on a scale from 1 to 5, with 1 meaning that they “fully disagree” – i.e. they do not think that climate action is beneficial for the economy – and 5 meaning that they “fully agree” and expect positive economic impacts. The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 4 and 5. Hover over the legend to see the results.

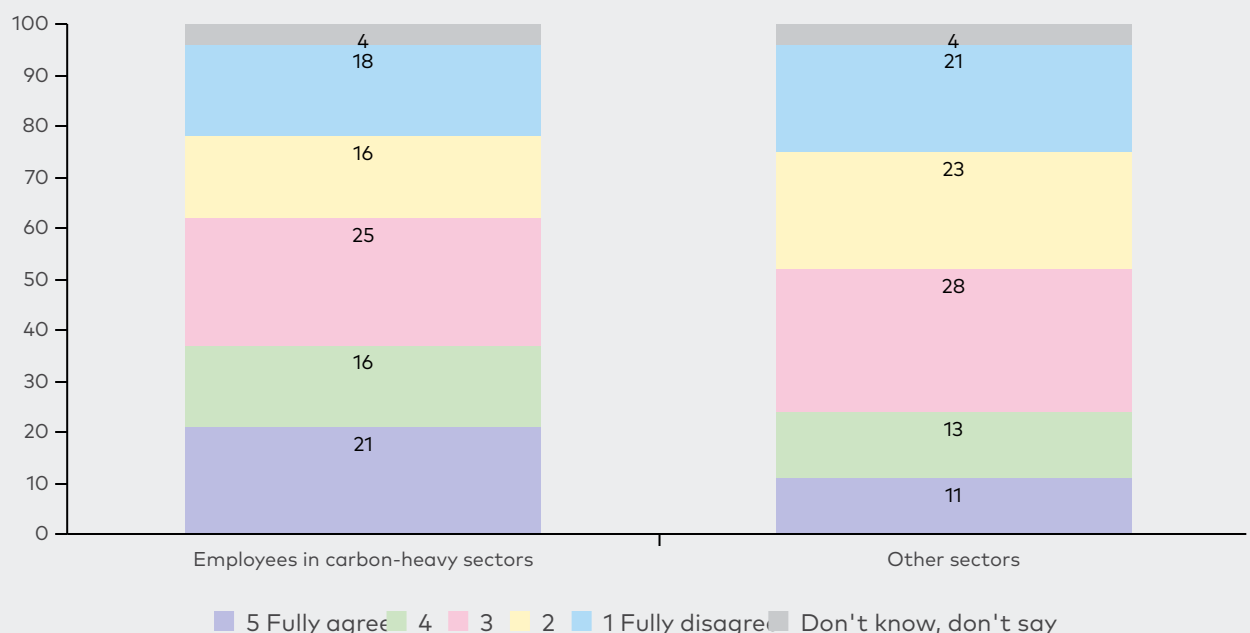
Source: Tapia, Sánchez Gassen, & Lundgren (2023).

In a focus group discussion (see Box 1), labour union representatives from the Nordic countries pointed out that employees' expectations about the economic benefits of the green transition may differ across industries and between the Nordic countries, and they may also change over time depending on government policies and green transition policies. New initiatives and investments that benefit their sector can rapidly change employees' expectations toward the green transition to the positive and vice versa. In a survey from 2023 administered by the Central Organisation of Finnish Trade Unions (SAK), a majority of employees stated that climate policies had, thus far, not had any impact on employment (SAK, 2023). Similarly, in a survey conducted by the Danish Trade Union Confederation (Fagbevægelsens Hovedorganisation, 2022), 74% of workers were generally positive about the green transition, even though some worries were expressed concerning price increases and potential job losses. In this sense, the answers shown in Figure 4 and elsewhere in this memo should be considered as snapshots of attitudes expressed in a specific time and policy context.

INSIGHT #4: 37% of people in carbon-heavy sectors worry about job loss due to the green transition

People who are occupied in carbon-intensive industries are more concerned about job loss than other groups (Figure 5). In the Nordic survey, 37% expressed worries that jobs could be at risk during the green transition. Among employees working in less carbon-heavy ("other") sectors, only 24% shared these concerns.

Figure 5: To what extent do you agree or disagree with the following statement? – "I am worried that some jobs in my country may be at risk due to the transition to a low-carbon economy."



Note: The figure shows the survey answers given by respondents who work in carbon-heavy sectors and employees in other sectors. For a list of carbon-heavy sectors, see section on 'Labour market impacts of the green transition' above. Respondents could answer the question on a scale from 1 to 5, with 1 meaning that they "fully disagree" – i.e. they are not worried about job loss – and 5 meaning that they "fully agree" and are worried. The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 4 and 5. Hover over the legend to see the results.

Source: Tapia, Sánchez Gassen, & Lundgren (2023).

Researchers expect that almost all sectors and workplaces will be affected by the green transition in one way or another (OECD, 2023; Vandeplas et al., 2022). Nonetheless, information about labour market impacts by sector, profession, or region is scarce. Labour union representatives argue that more research is needed about the concrete, place- and sector-specific changes that the green transition will imply.

Since carbon-heavy sectors are often concentrated in specific regions, job loss

during the green transition is likely to occur to a stronger degree in some areas than in others (Alsos & Dølvik, 2021). Similarly, green investments and green job creation can be concentrated in specific regions with access to green energy or natural resources. This may contribute to greater spatial inequalities in economic growth and employment opportunities in the Nordic countries.

At the same time, such developments at detailed spatial level are difficult to predict. Macroeconomic fluctuations, international conflicts and crises, natural disasters as well as megatrends such as automation and the increasing use of artificial intelligence and Big Data can all influence the Nordic labour markets. The simultaneous occurrence of such trends and transformations can have large impacts on the Nordic labour markets that go beyond the effects of the green transition per se, yet these are difficult to predict (Robins & Rydge 2019).

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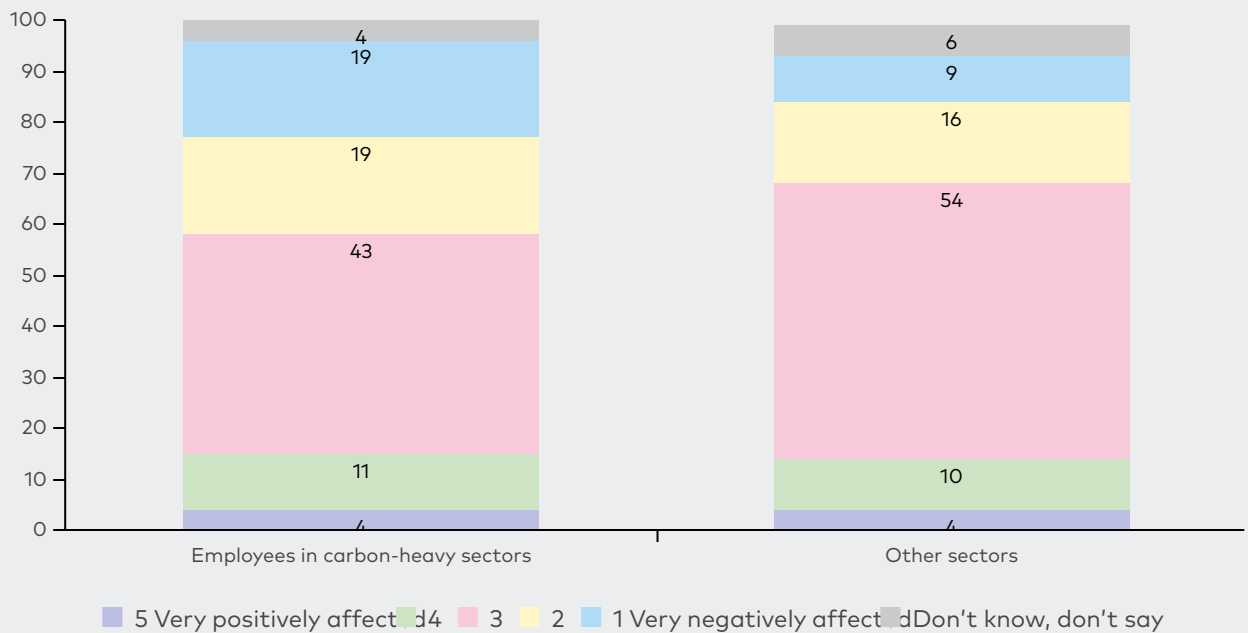
We expect that there will be new jobs and there will be job losses. But we don't know for sure, and it creates a lot of fear and insecurity.

- Labour union representative

INSIGHT #5: 38% of employees in carbon-heavy sectors say the green transition has a negative impact on their household economy

People who work in carbon-heavy sectors are not just comparatively sceptical about the economic impact of the green transition. They are also more likely to report negative impacts of the green transition on their own household (Figure 6). When asked how climate policies affect their household economy, 38% of all respondents who work in carbon-heavy sectors answer that they experience negative or very negative effects. Among employees working in less carbon-heavy ("other") sectors, only 25% state that their household is negatively affected.

Figure 6: Overall, how do you think that climate policies affect your household today in economic terms?



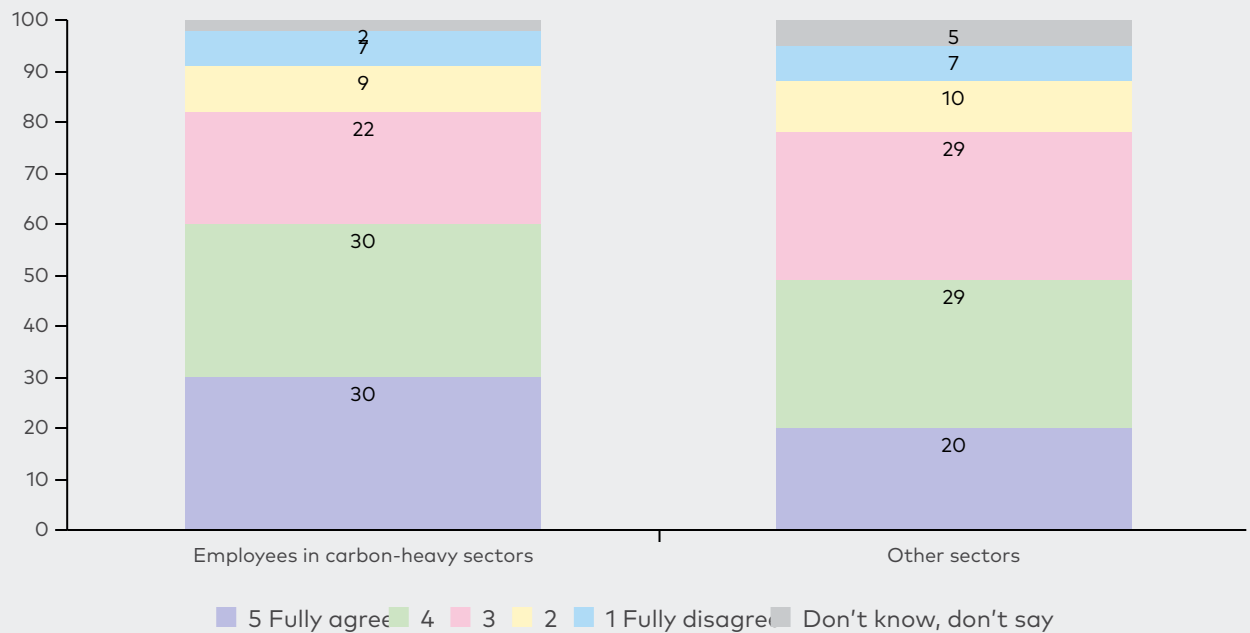
Note: The figure shows the survey answers given by respondents who work in carbon-heavy sectors and employees in other sectors. For a list of carbon-heavy sectors, see section on 'Labour market impacts of the green transition' above. Respondents could answer the question on a scale from 1 to 5, with 1 meaning that their household economy is "very negatively affected" by climate policies and 5 meaning that their household is "very positively affected". The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 1 and 2. Hover over the legend to see the results.

Source: Tapia, Sánchez Gassen, & Lundgren (2023).

INSIGHT #6: Employees in carbon-heavy sectors are more worried than others about future price increases from the green transition

People who work in carbon-heavy sectors are more likely than others to expect negative impacts from the green transition going forward. More concretely, in the Nordic survey, respondents were asked whether they expect prices and cost of living to increase due to the green transition (Figure 7). Three in five respondents who work in carbon-intensive industries (60%) express such concerns while only 16% disagree. Among employees working in other sectors, around half (49%) express concerns about price increases.

Figure 7: To what extent do you agree or disagree with the following statement? - "Initiatives to fight climate change will increase prices and the cost of living in the area where I live".



Note: The figure shows the survey answers given by respondents who work in carbon-heavy sectors and employees in other sectors. For a list of carbon-heavy sectors, see section on 'Labour market impacts of the green transition' above. Respondents could answer the question on a scale from 1 to 5, with 1 meaning that they "fully disagree" and 5 meaning that they "fully agree". The numbers given in the text are calculated by adding the percentages of respondents who chose answer options 1 and 2, and 4 and 5, respectively. Hover over the legend to see the results.

Source: Tapia, Sánchez Gassen, & Lundgren (2023).

INSIGHT #7: More research is needed about the skills requirements in a greener economy

Employees working in sectors that are more directly affected by the green transition may need support in either changing their occupation or in updating their skills to match new professional requirements. Active labour market policies, training, and reskilling initiatives are important to avoid the potentials of unemployment or inactivity for employees in transitioning sectors (Høst et al., 2020; Alsos & Dølvik, 2021).

Upskilling and reskilling activities will be especially important for employees with lower levels of education. Academic studies suggest that manual workers may be disadvantaged during the green transition (Marin & Vona, 2019). Many of the emerging jobs in the green economy will require higher levels of skills, making it more challenging for people with lower educational attainments to qualify (NFS et al., 2021). By investing in reskilling and upskilling programmes, Nordic governments can support these groups of employees to become employable in new green sectors, thereby avoiding new labour market inequalities.

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There is no research, no strategic studies done regarding how working life really changes, and what work projections look like. We need this kind of research!

- Labour union representative

While the academic literature stresses the importance of upskilling and reskilling programmes to support structural change and the reallocation of labour during the green transition, there is less agreement on how such programmes should be designed and which types of skills they should convey (OECD, 2023). Labour union representatives who participated in a focus group discussion (see Box 1) argue that there is currently too little knowledge about which skills will be required by different industries in a greener economy, making it difficult to prepare and plan. Investments are needed both to gain new information on future skills needs and to set up reskilling programmes that can convey such skills.

INSIGHT #8: Trust in the Nordic welfare systems is essential to maintain support for the green transition.

Labour unions from the Nordic countries stress that employees need to have confidence that public welfare systems will support them if they lose their job during the green transition, including via financial support, reskilling opportunities, and active labour market policies. This type of trust is necessary to maintain public support for ambitious green policies (see also Robins & Rydge, 2019). Nonetheless, labour union representatives say that they see the opposing trend among their members—a declining level of trust. They argue that the Nordic welfare systems have been hollowed out during the last few decades and that this is one reason for this trend. To ensure support for the green transition, labour union representatives argue that trust in the welfare systems needs to be strengthened again. Importantly, cuts in welfare support and services should be avoided during the green transition.

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I think it's a very important element of the green transition to have a strong welfare system that takes care of you if you are impacted negatively.

- Labour union representative

INSIGHT #9: The involvement of social partners in the green transition is necessary for ensuring fairness

Social dialogue and collective bargaining between Nordic governments, industry organisations and trade unions (i.e. the social partners) are key characteristics of the Nordic model and one of the reasons why the Nordic countries tend to top international economic and labour market rankings (Tapia et al., 2022). It is necessary that tripartite cooperation and close dialogue between the social partners are maintained during the green transition.

A just transition engages workers, employees, and labour unions in the development and implementation of industrial strategies, so that those who are affected can be part of shaping how processes will take place (NFS, n.d.). By doing so, Nordic countries can also identify the best strategies for the green transition in different sectors of the economy, develop solutions that support those at risk of unemployment or in need of upskilling, and establish upskilling programmes that convey the right type of competences (Lundgren et al., 2023).

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Suggestions from workers in carbon-heavy industries for a just green transition

Representatives of Nordic labour unions make the following suggestions to policymakers at national levels of governance to ensure that the green transition is just:

1: Support further research on the employment effects and skills needs of the green transition

There is currently not enough information on how the green transition will affect employment at sectoral and regional levels in the Nordic countries. There is also a lack of knowledge about which skills and expertise will be required in a greener economy. In order to prepare for employment effects and support employees who are most affected, more research is needed to study these questions.

2: Collaborate with social partners to develop sectoral roadmaps

Roadmaps can estimate greenhouse gas emissions for each given sector and describe how to reduce emissions to meet climate goals. Such roadmaps have already been developed in several Nordic countries (Ohrling, 2020). Nonetheless, they often do not assess employment impacts or skills needs. This step is important to support future skills supply and develop educational programmes that train workers to use new technologies and take on new tasks.

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The labour force will need to get the right education and skills to take green jobs. So, there are two challenges: the regional question: where will the jobs grow? And what skills will or won't be needed in the future?

- Labour union representative

3: Develop and invest in reskilling programmes

Measures and investments are needed to upskill and reskill workers and employees to make them employable in a greener economy. Low-skilled employees and people with weak labour market attachment need support to obtain qualifications specific to green sector jobs. Nordic governments should acknowledge their important role in this process, develop and invest in adult education programmes that allow for continuous skills development, and work in collaboration with the social partners, employers, and the educational sector. Investing in a skilled labour force will not only facilitate the transition itself, but it will also be a key component to ensure fairness and allow workers and employees to benefit from new job opportunities.

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There will be losers and winners in the green transition. But no one sees it because we don't have information by sector. Politicians don't get prepared, or allocate resources to reskill people.

- Labour union representative

4: Embrace a more positive (but realistic) narrative of the green transition

The green transition will bring many benefits and likely improve the quality of life for people in the Nordic Region. The advantages of the green transition should be better communicated to the public. What is a green and sustainable society about? How will people experience life in the Nordic Region after a successful green transition? People should also be given the chance to co-create such a narrative and become part of the process.

5: Focus on the distributional impacts of taxes and subsidies

Government subsidies and funding mechanisms can play a big role in promoting the green transition – for example by supporting green innovation, accelerating the development of green products or investing in green infrastructure. Government funding can also help to stimulate household demand for sustainable products such as electric vehicles and solar panels. Similarly, different types of environmental taxes can discourage the consumption of specific products and make production more expensive.

The use of government subsidies and taxes should be carefully targeted. A key goal should be to move away from subsidising fossil fuel and instead supporting sustainable and green choices. In addition, a focus should be placed on supporting vulnerable groups and households as well as regions which risk to suffer adverse consequences during the green transition.



Climate goals and emissions in the Nordics

What are the key climate goals in the Nordic countries?

There is currently not enough information on how the green transition will affect employment at sectoral and regional levels in the Nordic countries. There is also a lack of knowledge about which skills and expertise will be required in a greener economy. In order to prepare for employment effects and support employees who are most affected, more research is needed to study these questions.

At the heart of the green transition is the ambition to move towards a sustainable and climate-neutral future. While the bulk of this toolbox focusses on how to embed principles of justice into the processes and outcomes of the transition, the information below provides an overview of where the Nordic countries stand in their pursuit to achieve climate goals and targets.

In line with the Paris Agreement, the 2030 Agenda, and the European Green Deal, the Nordic Council of Ministers adopted its own Nordic Vision 2030 to guide the region towards economic, social, and environmental sustainability. However, when the indicators of this vision were established in 2019, becoming a “green Nordic Region” was the least developed of the three key vision areas, showing that the Nordic countries were still some way off from achieving their common goal.^[68] Since then, most of the Nordic countries have adopted more intensive policies, especially when it comes to reducing GHG emissions at the national level. The European Climate Law (2021), EU Fit for 55 (2021), and the EU Effort Sharing

68. Nordic Council of Ministers. (2021). *The Nordics—A sustainable and integrated region? Baseline report for Our Vision 2030*. <http://doi.org/10.6027/politiknord2021-727>

Regulation updates from 2023 have all intensified GHG reduction efforts, at least from an institutional perspective.

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Together we will promote a green transition of our societies and work towards carbon neutrality and a sustainable circular and bio-based economy.

- Nordic Vision 2030

Overview of climate goals in the Nordic countries and at the EU level

	Key climate goals	Reference policy
EU	Reach climate neutrality in the EU by 2050. Reduce net domestic emissions by at least 55% by 2030 (compared to 1990).	European Green Deal + European Climate Law
	Attain EU GHG emission reduction target of 55% by 2030 (compared to 1990). Increase share of renewable energy in the EU's gross final energy consumption to 40%. Increase the target for improvement in energy efficiency to 36% for final energy consumption, and 39% for primary energy consumption.	EU Fit for 55
	Cut GHG emissions by at least 50% to 55% for 2030 from 1990 levels, rather than at least 40% currently, including an amendment to the recently proposed European Climate Law.	2030 Climate Target Plan
Nordic Region	By 2030, the Nordic Region has the most competitive, sustainable, integrated, innovative, and user-friendly electricity market in the world. Knowledge will be developed for effective measures to reduce the climate impact of emissions from the energy sector by 90%. Step up efforts to ensure a sustainable and competitive construction and housing sector in order to reduce its impact on health, the environment, and the climate. Undertake major efforts in accelerating the green transition of the transport sector, including efforts relating to fossil-free transport. Work to make the Nordic Region a leader in circular, climate-neutral, and sustainable business models for the business sector. Pursue efforts relating to rural growth and the green transition in rural areas. The emphasis will be on the ability to manage acute crises linked to climate change. Help to facilitate and accelerate the normalisation of sustainable lifestyles in the Nordic Region.	Nordic Vision action plan 2021-2024

Denmark	Reduce total territorial emissions by 70% by 2030 (compared to 1990). Achieve climate neutrality by 2050.	Climate Act (<i>Klimaloven</i>)
	Domestic transport, housing, agriculture, small industries, and waste management (effort-sharing sectors) to reduce emissions by 50% by 2030 (compared to 2005 levels).	EU Effort Sharing Regulation (2023 ratification with more ambitious national targets)
Finland	Reduce emissions by 60% by 2030 (compared to 1990). Reduce emissions by 90-95% by 2050 (compared to 1990). Reach carbon neutrality by 2035, and be carbon negative thereafter.	Climate Change Act (<i>Ilmastolaki</i>)
	Domestic transport, housing, agriculture, small industries, and waste management (effort-sharing sectors) to reduce emissions by 50% by 2030 (compared to 2005 levels).	EU Effort Sharing Regulation (2023 ratification with more ambitious national targets)
Iceland	Reduce GHG emissions by 40% by 2030 (compared to 1990 levels). Reach carbon neutrality by 2040.	Climate Change Act
	Domestic transport, housing, agriculture, small industries, and waste management (effort-sharing sectors) to reduce emissions by 40% by 2030 (compared to 2005 levels).	EU Effort Sharing Regulation ; Iceland's Climate Action Plan 2020
Norway	Reduce emissions by 55% by 2030 (compared to 1990 levels). Reduce emissions by 90-95% by 2050 (compared to 1990 levels).	Climate Law (<i>Lov om Klimamål</i>)
	Domestic transport, housing, agriculture, small industries, and waste management (effort-sharing sectors) to reduce emissions by 40% by 2030 (compared to 2005 levels).	EU Effort Sharing Regulation

Sweden	Reduce emissions by 63% by 2030 (compared to 1990 levels). Achieve carbon neutrality by 2045 and negative net emissions thereafter.	Climate Act (Klimatlag) + Climate Policy Framework (Klimatpolitiskt ramverk)
	Domestic transport, housing, agriculture, small industries, and waste management (effort-sharing sectors) to reduce emissions by 50% by 2030 (compared to 2005 levels).	EU Effort Sharing Regulation (2023 ratification with more ambitious national targets)
Greenland*	<i>To be determined</i>	
Åland	Achieve climate neutrality by 2035.	Åland Development and Sustainability Agenda
Faroe Islands	Reduce emissions by 30% by 2030 (compared to 2010 levels). Achieve net-zero emissions by 2050.	Energy and Climate Policy (Orku- og veðurlagspolitikk)

*Greenland signed the Paris Agreement in 2023. Now that the territory has taken this step, it will establish a national climate strategy and nationally determined contributions

Where do the Nordic countries stand in their goals of lowering greenhouse gas emissions?

Global GHG emissions have been steadily increasing since 1970, with a brief exception in 2020 when they fell by 3.7%.^[69] As of 2022, China, the United States, and India were the highest emitting countries, but when calculated by emissions per capita, the United States, Russia, and China make up the top three emitting nations. Within the EU, GHG emissions (CO₂, CH₄, and N₂O specifically) have all decreased by at least 20% since 1990, suggesting that some of the climate frameworks enacted over the past three decades have made an impact. The decrease in CO₂ emissions is partially due to a decrease in energy-related emissions from coal and oil. Since 1991, the EU has experienced a decrease in coal-related emissions by 54.6% and oil-related emissions by 59.9%, suggesting that, as a whole, the EU has been in a state of transition for some time now. Continued discussions around making a green transition are therefore part of a longer history of progress in decreasing emissions.

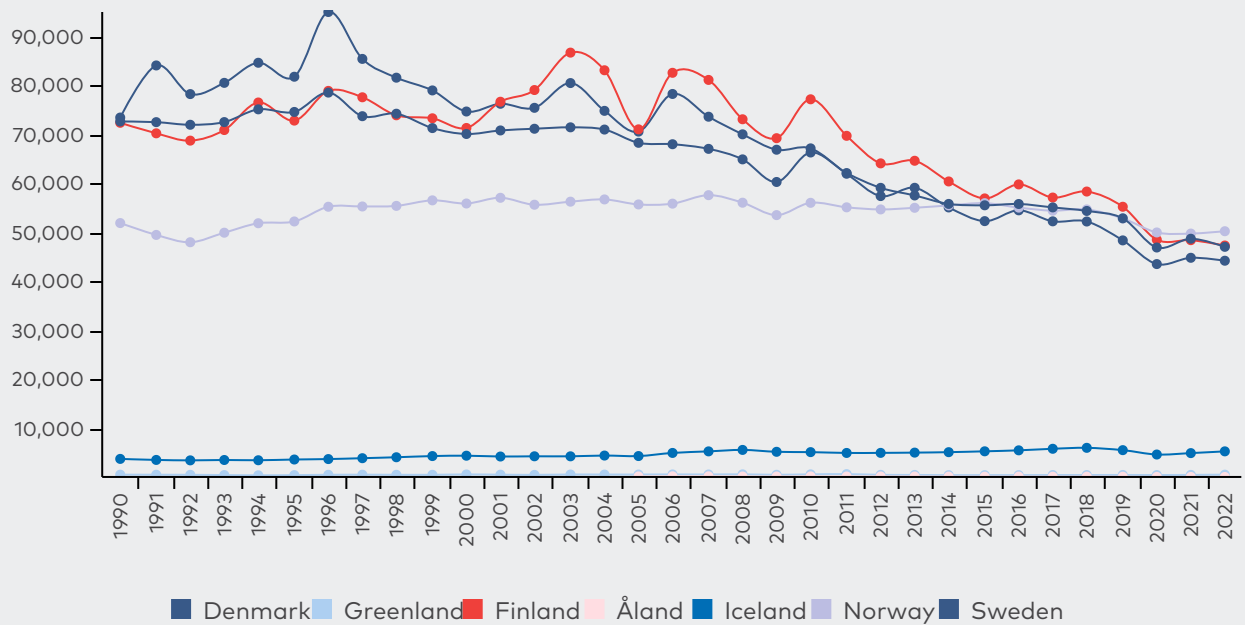
When it comes to the Nordic countries, there has been a general negative trend in GHG emissions since around 2002 (see Figure 1). The Nordics were the initiators of adopting a carbon tax, with Finland taking the lead in 1990.^[70] Along with their efforts in developing renewable energy sources for electricity (e.g., hydropower in Norway; wind power – especially in Denmark; geothermal energy in Iceland), the Nordic Region has shown that it is adamant to make a green transition.

69. Crippa, M., Guizzardi, D., Pagani, F., Banja, M., Muntean, M., Schaaf E., Becker, W., Monforti-Ferrario, F., Quadrelli, R., Risquez Martin, A., Taghavi-Moharamli, P., Köykkä, J., Grassi, G., Rossi, S., Brandao De Melo, J., Oom, D., Branco, A., San-Miguel, J., and Vignati, E. (2023). *GHG emissions of all world*

70. Statista. (2024). Climate change in the Nordics – statistics and facts.

<https://www.statista.com/topics/11146/climate-change-in-the-nordics/#topicOverview>

Figure 1: GHG emissions in the Nordic countries, all sectors, 1990-2022 (in thousand metric tonnes of CO₂ equivalents)



Note: GHG emissions data for the Faroe Island are not included in the dataset. Emissions data for Åland are only included for the period 2005-2022. Hover over the legend to see the results.

Source: Nordic Statistics, 2024. ^[71]

However, there is still more to be done. Despite improvements in renewable energy, the Nordic countries still rely on coal, oil, and gas in their overall energy consumption structures (especially oil in Denmark, Finland, and Sweden).^[72] Some research has revealed the dissonance in the discourse by pointing to discrepancies between the perceptions of Nordic sustainable lifestyles and actual consumption-based carbon footprints.^[73]

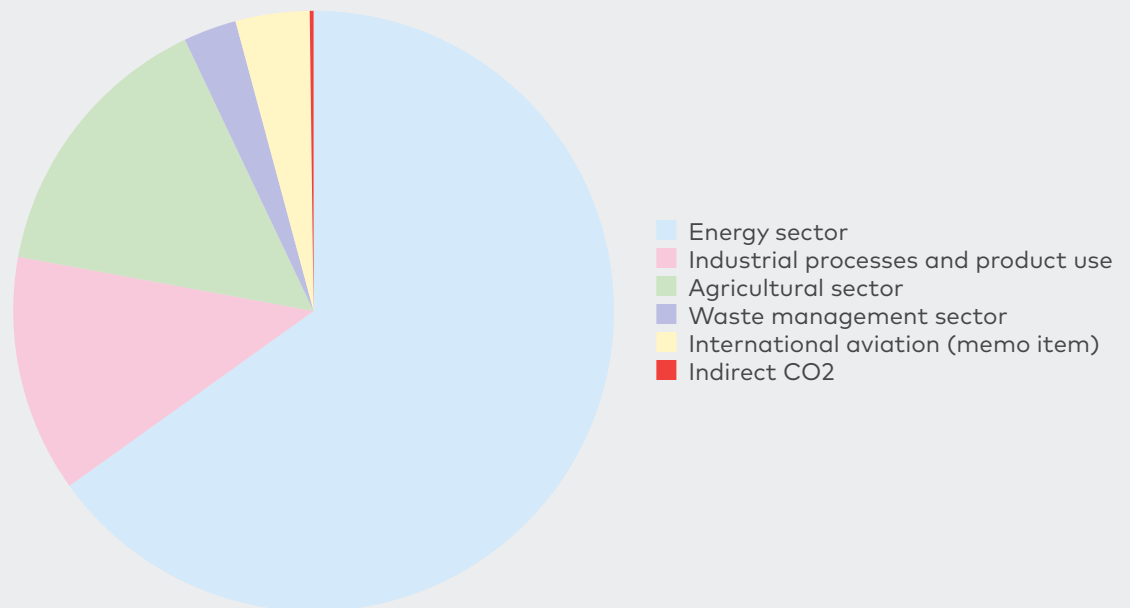
72. Dixon, et al. (2023)

73. Maczionssek, M.I., Dillman, K.J., and Heinonen, J. (2023). Linking perception and reality: Climate-sustainability perception and carbon footprints in the Nordic countries. *Journal of Cleaner Production*, 430, 139750. <https://doi.org/10.1016/j.jclepro.2023.139750>

Which sectors are responsible for the most carbon emissions?

In line with global trends, the energy sector remains the largest GHG emitting sector in the Nordic Region. It accounts for 65% of emissions (Figure 2).^[74] It includes emissions from all stationary and mobile energy activities such as public electricity and heat production, oil and gas activities, manufacturing industries, transport and aviation.^[75] Figure 3 shows how sectors in the Nordic countries contribute to the climate crisis, compared to one another (A) and to the EU (B).

Figure 2. GHG emissions in the Nordic Region by sector (2022)



Source: Nordic Statistics, 2024.^[76]

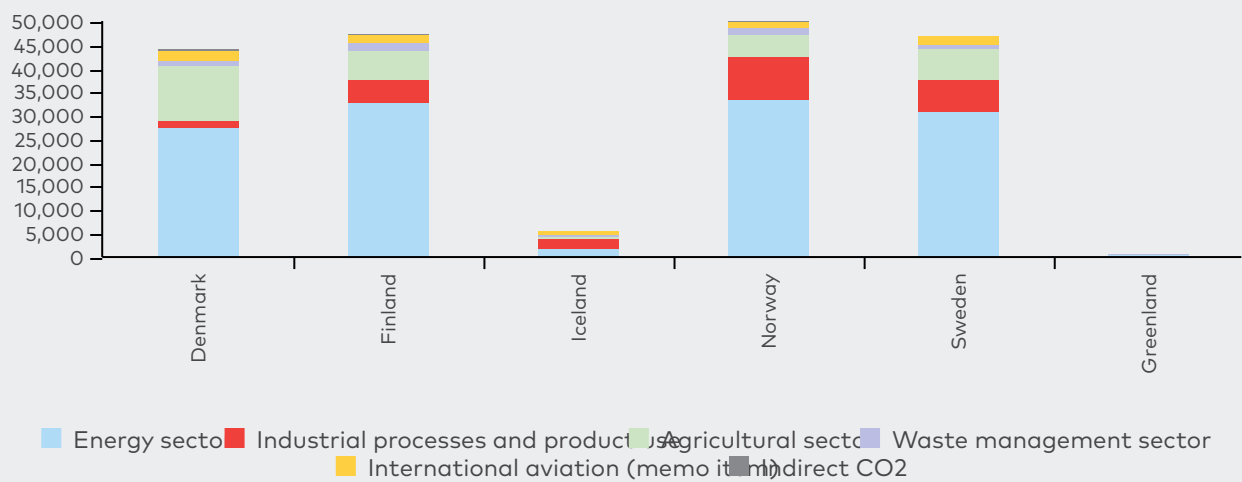
Note: The dataset reports the emissions of greenhouse gases and air pollutants broken down by industries (classified by NACE Rev. 2) plus households. The greenhouse gases are weighted according to their global warming potential and are expressed in CO₂ equivalents. Hover over the legend to see the results.

74. Statista (2023)

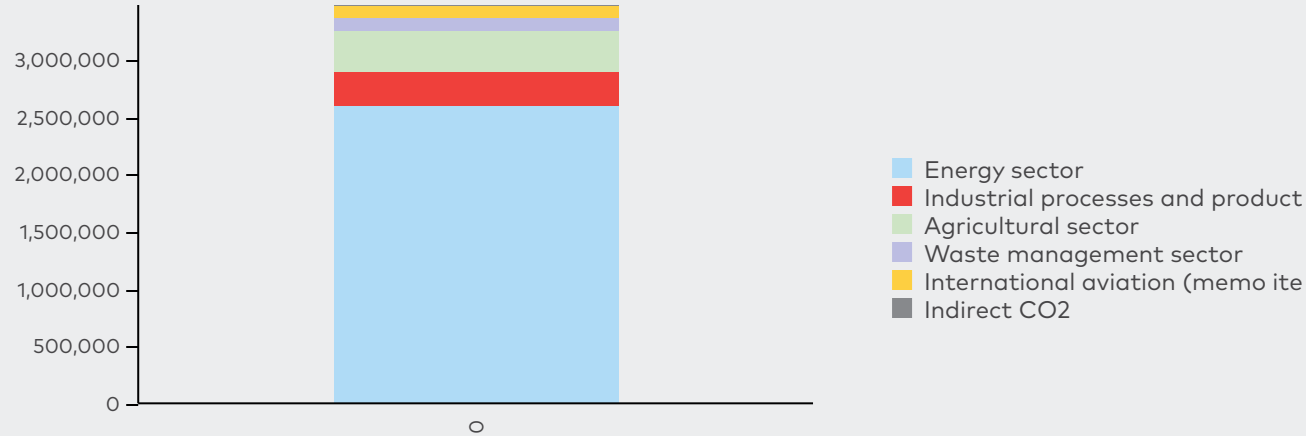
75. For more information on the activities included in each of the sectors, see the IPCC guidelines for national greenhouse inventories, available here: [ch1ri.pdf](#).

Figure 3. Emissions by sector in the Nordic countries and the EU, 2022

A: The Nordic countries



B: EU



Source: Nordic Statistics, 2024.^[77]

Note: The dataset reports the emissions of greenhouse gases and air pollutants broken down by industries (classified by NACE Rev. 2) plus households. The greenhouse gases are weighted according to their global warming potential and are expressed in CO₂ equivalents. Data from the Faroe Islands and Åland are not included in the dataset for 2022. Hover over the legend to see the results.

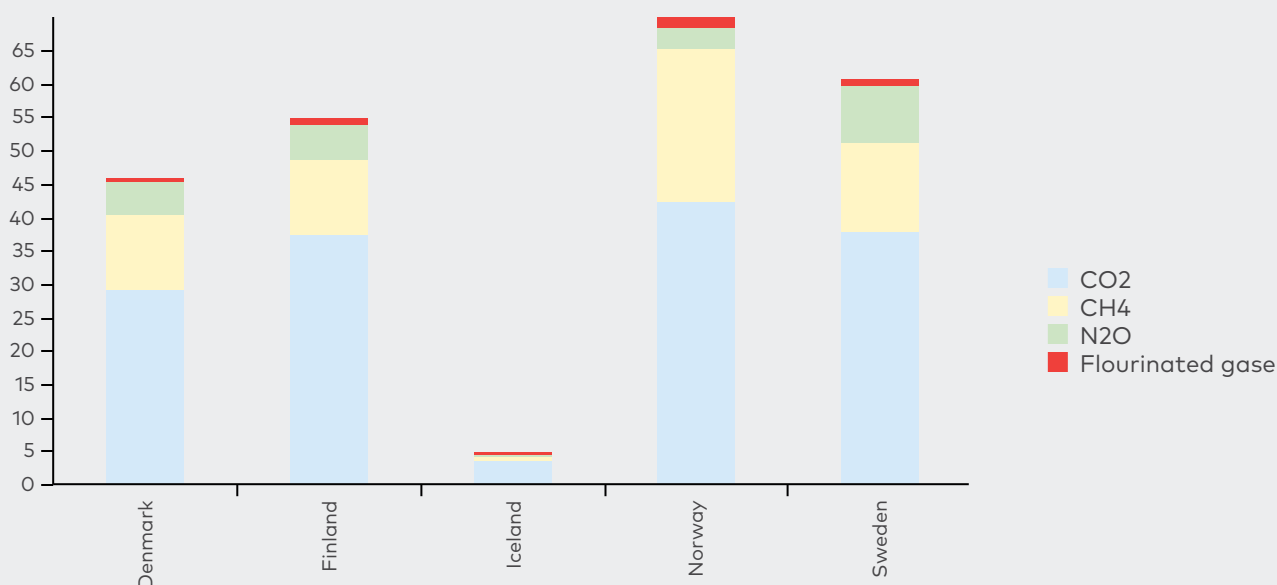
77. Nordic Statistics Database. (2024). EMIS14: Air emissions accounts by air pollutant, activity, unit, time and reporting country. [Nordic Statistics database](#)

Which sectors are responsible for the most carbon emissions?

Within the Nordic Region, Denmark's main sectors of concern are transport, fuel combustion, and agriculture. Finland has similar emission concerns from these sectors. The forestry sector provides major carbon sink opportunities that has helped to offset some of the negative emissions impacts in the past. Nonetheless, in recent years, the role of Finnish forests as a carbon sink has weakened. Iceland's metal industry is a major contributor to total GHG emissions in the country, but road transport and international aviation also produce large shares of emissions. Norway is credited with the largest emissions in the region coming from fuel combustion, heavily due to oil and gas extraction among other energy industries. Finally, in the Swedish context, emissions are highest from road transport, international navigation, and agriculture.^[78]

The greatest proportion of GHG emissions in the Nordic countries comes from carbon dioxide (CO₂), but other greenhouse gases play a key role in the climate crisis (Figure 4). The Nordic countries have some differences when it comes to which gases play a greater role, linked to which sectors are credited with the highest emissions.

Figure 4. GHG emissions by gas in the Nordic countries



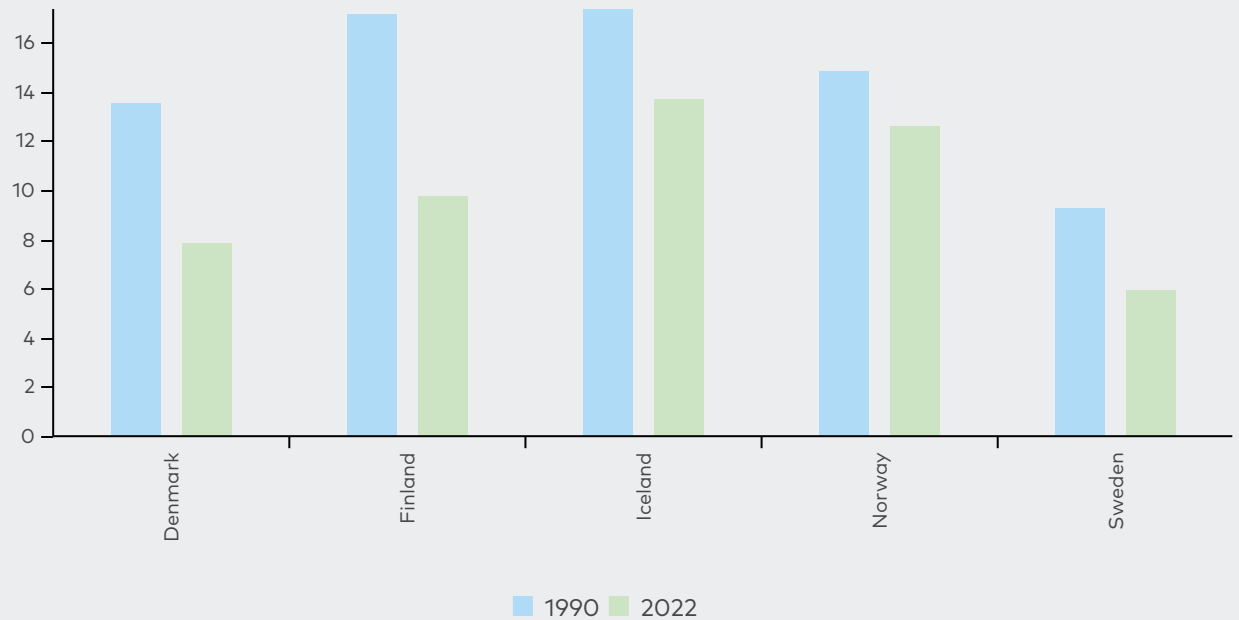
Source: Crippa et al., 2023

Note: Hover over the legend to see the results.

78. Flam, H. and Sánchez Gassen, N. (forthcoming). Regional economic effects of the green transition in the Nordic Region. Stockholm: Nordregio.

When it comes to GHG emissions per capita, Iceland (13.70 tonnes CO₂ equivalents per capita per year) and Norway (12.60 tonnes CO₂ equivalents per capita per year) are at the highest (Figure 5). In fact, Norway has seen the least reductions of carbon emissions per capita since 1990, (dropping from 14.81 tonnes of CO₂ equivalents to 12.60). Meanwhile, Finland has experienced the greatest reductions per capita. In 1990, their per capita carbon emissions were at 17.16 tonnes, whereas in 2022, it had reduced to 9.76 tonnes.

Figure 5. GHG emissions per capita in the Nordic countries, 1990 v. 2022



Source: Crippa et al., 2023

Note: Hover over the legend to see the results.

In order to achieve their climate goals, the Nordic countries need to implement ambitious climate policies during the coming years. This Nordic Toolbox for a Just Green Transition provides information and inspiration on how to make such a process as socially fair and just as possible.

Recommended further reading

Dixon, P., Rimmer, M., Wittwer, G., Honkatukia, J., Tapia, C. & Sánchez Gassen, N. (2024). *What impact do climate change policies have on Nordic economies, industries and households?* Nordregio Report 2023:10. Stockholm: Nordregio. Available at: <https://pub.nordregio.org/r-2023-10-EnIGG-first-report/>.

Flam, H. & Sánchez Gassen, N. (forthcoming). *Regional economic effects of the green transition in the Nordic countries*. Stockholm: Nordregio.

Tapia, C., de Jesus, A., Cedergren, E., Sánchez Gassen, N. & Lundgren, A. (2022). *The social impacts of climate mitigation policies on vulnerable groups in the Nordic Region*. Nordregio Discussion Paper 2022:3. Stockholm: Nordregio. Available at: <http://pub.nordregio.org/wp-2022-3-the-social-impacts-of-climate-mitigation-policies-on-vulnerable-groups/>



Checklist for policymakers

1. Familiarise yourself with the just transition concept

2. Get an overview of climate goals in the Nordic countries and the EU

3. Develop a vision for the green transition

Establish clear goals and common ground.

Co-create an inspiring vision.

Use the vision to inspire action.

4. Engage people in the green transition

Map stakeholders who should be involved.

Make meetings accessible and inclusive.

Engage experts and facilitators.

Ensure engagement processes have a concrete impact.

Make citizen engagement practices a regular routine.

5. Assess and mitigate social and regional impacts of the green transition

Conduct impact assessments.

Mitigate adverse impacts.

Promote a universal design perspective.

Monitor impacts.

6. Adopt a place-based approach for your policies

Develop place-based action plans.

Ensure local quality-of-life benefits.

Ensure broad commitment.

Foster good-quality green jobs.

7. Invest in inclusive reskilling and upskilling

Increase knowledge about labour market impacts and skills needs in a green economy.

Invest in inclusive education, reskilling and upskilling.

Involve labour market stakeholders.

Strengthen the welfare safety net.

8. Support green choices

Take the lead and make green choices available.

Make green choices more affordable, accessible and appealing.

Educate and spread information.

9. Listen to those affected

Learn what the vulnerable groups in the Nordic Region want.

About this publication

Nordic Toolbox for a Just Green Transition

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Older adults and the green transition: Unsplash; Daniel Overbeck/visitdenmark

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People with disabilities and the green transition: Scandinav/imagebank.sweden;
Niclas Jessen/visitdenmark

Suggestions from people with disabilities for a just green transition: Maija
Astikainen/visitfinland; Benjamin Suomela/norden.org

Workers in carbon-heavy industries and the green transition: Sofia Sabel and Lars
Thulin/imagebank.sweden.se

Suggestions from workers in carbon-heavy industries for a just green transition:
Getty Images/unsplash; Martin Thaulow/norden.org

Climate goals and emissions in the Nordics: Martin Thauland/norden.org; Jann
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