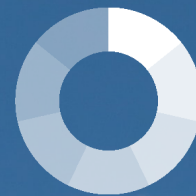


# Skift

Business  
Climate  
Leaders

# ZERO

A tall, cylindrical brick chimney stands on the left side of the image, extending from the bottom towards the top. The sky is a clear, vibrant blue with scattered white clouds. The chimney has a metal ladder or access structure on its side.

## Nordic Perspectives: Navigating the Voluntary Carbon Removal Market



Haga Initiative  
Business Climate Leaders



Climate scenarios aligned with the temperature goals of the Paris Agreement are vastly dependent on the large-scale implementation of carbon dioxide removal (CDR) solutions to remove CO<sub>2</sub> already emitted into the atmosphere ([IPCC, 2022](#)). While some of the volumes will be realized through public procurement and policy mechanisms, a good share of this deployment is expected to be triggered through sales of carbon dioxide removal (CDR) credits in the Voluntary Carbon Market (VCM) ([BCG, 2023](#)).

### **Growing demand for voluntary carbon removal credits**

The Voluntary Carbon Market (VCM), where mitigation outcomes are traded, has existed since the 1990s. Here, companies, governments or individuals can buy climate credits to meet their climate targets or simply because they want to contribute to the finance of climate projects. The most common types of credits are those that reduce or avoid CO<sub>2</sub> emissions, typically renewable or avoided deforestation projects. However, an increasing number of institutions eg. Oxford Net-Zero Principles and Science-based Target initiative (SBTi) are advising companies to divert to using so-called permanent CDR credits to offset their residual emissions. According to SBTi residual emissions are a maximum of 10% of the total emissions ([SBTi, 2021](#)).

Despite the global recession since the COVID-19 pandemic, the demand for voluntary carbon credits has grown steadily over the last couple of years, and the demand for CDR credits has grown manyfold ([CDR.FYI, 2024](#)). The rapid growth is due to a few large deals. Permanent CDR in the VCM is still in its infancy. However, demand for CDR credits is expected to increase dramatically over the next decades due to more governments and companies setting and acting on climate targets ([BCG, 2023](#)).

### **Nordic policy incentives**

The Nordic countries have a unique opportunity to be at the forefront of building full-scale value chains for CDR activities and to deliver CDR credits to the international market. Sweden, Denmark and Finland have a large potential to create negative emissions by implementing carbon capture at their many biogenic emission point sources. Sweden and Denmark are already forming policy incentives for projects.

In Norway and Denmark, there are geological carbon storage projects being built offshore, en route to start operating in 2024 and 2026 respectively. Additionally, at the end of 2023, Denmark opened the first applications for licenses to store CO<sub>2</sub> onshore at several locations.

Despite the fast development of projects and national policies, there is yet little international guidance on the governance of CDR activities. A pressing question in the Nordic discourse around CDR is whether a country and a private entity can report the same CDR activity without losing additionality. The absence of international guidance has concurrently led to different interpretations and guidelines amongst the Nordic countries.

This paper gives an overview of the potential for CDR, the status of regulations and announced projects in the respective Nordic Countries, and discusses possibilities for further cooperation on CDR. This paper is based on the insights and discussion from the Webinar “Nordic Perspectives: Navigating the Voluntary Carbon Removal Market” (arranged by ZERO and Skift at the Klimpo Bio-CCUS [Conference 4th october](#)).



## Denmark

The Danish Government's climate target is to reach 110% emission reductions by 2050, compared to 1990 emissions levels, necessitating CDR. In 2023, the government launched that it will hold yearly auctions to support national CDR initiatives to reach the target. It is estimated that the yearly Danish potential for bioenergy with CCS (BECCS) in 2040 is 3.5–6 million tonnes of CO<sub>2</sub> ([The Danish Energy Agency](#)). The first project awarded a 20-year contract with the government is Carbon Capture and Storage (CCS) on two of Ørsted's bioenergy plants. Planning to capture 430,000 tonnes of biogenic CO<sub>2</sub> by early 2025 and store it in the Northern Lights transportation and storage infrastructure.

The government is leveraging market forces and private sector engagement to realize the projects by allowing credits to be sold in the VCM. In March, it was announced that Microsoft is buying 2.67 million tonnes of CDR credits from Ørsted over 11 years.

Even though Northern Lights is handling the CO<sub>2</sub> from Ørsted's projects, Denmark is developing both onshore and offshore geological CO<sub>2</sub> storages. The Ministry of Climate, Energy and Utilities issued three licenses for exploration and full-scale CO<sub>2</sub> storage in the Danish part of the North Sea earlier this year. Moreover, in December 2023 the same ministry opened a round for applications of licenses for onshore exploration and storage of CO<sub>2</sub>, with the application deadline at the end of January 2024 ([Danish Energy Agency, 2023](#)).

## Sweden

According to the Swedish climate law, the country shall reach climate neutrality in 2045 compared to 1990 emissions levels. 85% must be emission reductions and 15% can come from supplementary measures such as CDR. Sweden has Europe's greatest potential to deliver BECCS due to many point sources with biogenic emissions (Rosa, Sanchez, Mazzotti, 2021). The large forestry sector provides biomass to the pulp and paper industries, and wood residues to combined heat and power plants. The potential for BECCS in Sweden amounts to at least 10 million tonnes of CO<sub>2</sub> in 2045 ([SOU2020:4](#)).

The government has planned to make use of the potential by providing state aid to realise projects through reversed auctions.

The first auctioning round was initially planned to be announced in 2022. However, it has been postponed by the Swedish Energy Agency due to regulations and conditions for implementation not being ready ([Swedish Energy Agency, 2022](#)).

Regarding the voluntary market, the Swedes have taken a different approach than Denmark. The Swedish Energy Agency recommended that projects be allowed to sell credits in the voluntary market, but state aid should be reduced accordingly. Additionally, it is proposed that the buyer of a credit state that they have contributed to Sweden reaching its climate targets instead of offsetting the same amount from its emission accounting. This is an example of a wider debate about whether carbon removal credits should be used for offsetting residual corporate emissions or rather be stated as beyond value chain mitigation.

## Finland

Finland's climate goal is to reach net zero by 2035. The Finnish Climate Change Act set out that emissions should be reduced -60% by 2030, -80% by 2040 and -90% but aiming at -95% by 2050 compared to 1990 emissions levels (Carbon Gap, 2023). Hence, to reach net zero, it is likely that Finland will be dependent on substantial amounts of CDR.

Finland, like Sweden, has a large potential for BECCS because of the industries rooted in the forestry sector. The potential for BECCS in Finland is around 6.5–6.9 Mt CO<sub>2</sub> in 2035, ([Carbon dioxide use and removal: Prospects and policies](#)). Despite the potential and having the most ambitious climate target amongst the Nordic countries, Finland has yet to implement a policy scheme for realising BECCS. However, a government analysis published in March 2023 identifies CDR as an important technology to reach the climate target and suggests possible policy options that Finland could use to accelerate the deployment ([Finish Government, 2023](#)).

The Finish industries are expecting a ramp of technologies to remove carbon from the atmosphere in Finland.

UPM, the Finnish forest and paper company, has published a white paper on CDR. They identify public-private partnerships as important and ask for guidelines, incentives, and a long-term regulatory perspective. UPM also recommends that it be allowed to sell credits in the voluntary market in addition to getting state subsidies.

### Norway

Norway's long-term climate target is to reduce emissions by 90–95% by 2050 compared to 1990 emissions levels. Norway has for several decades supported RD&D activities connected to CCS, which is relevant for CDR. In 2021, the government launched “Longship”, a full-scale value chain for CO<sub>2</sub>-management. The Longship project includes the implementation of carbon capture at two facilities, a waste incineration plant, Hafslund Oslo Celsio and a cement plant, Norcem Breivik. Lastly, Northern Lights will transport and store the CO<sub>2</sub>. Apart from Longship, Norway neither has a dedicated CDR strategy nor a policy tool.

In March the Norwegian environmental agency delivered a report to the Minister of Climate and Environment “Industrial CDR, potential, costs and policy options” ([Miljødirektoratet, 2022](#)). According to the report, the potential in Norway in 2030 is between 2–6 million tonnes of CO<sub>2</sub>, where the biggest potential lies within Direct Air Capture with Carbon Storage (DACCS). The Environmental Agency's interpretation of the issue of private-public co-financing is that private companies' accounting systems are independent of national accounting. Thus, if one company and one state report the same removal it is not viewed as double counting.

The Agency suggests that reversed auctions or a reversed tax are suited policy measures to trigger deployment. The government has asked for an external evaluation of which of the policy options is most socio-economic cost-efficient, and whether co-financing should be allowed. The output is supposed to be ready by the end of March 2024.

In April 2023 it was announced that the CCS project at the waste incineration plant, Hafslund Oslo Celsio, is undergoing a cost-reduction phase in response to project cost overruns.

It will be announced before the summer of 2024 how the project will move forward. Concurrently, the CCS project at Norcem Brevik is expected to be operational by 2024.



### Co-financing or double counting?

There is an ongoing debate on how to account carbon removal and carbon credits in corporate climate accounting. Many buy carbon credits to compensate for emissions in their climate accounting. However, some scientific communities and institutions are arguing that companies should communicate that they are financing climate projects rather than using it to offset ongoing emissions.

Due to this debate, and the international CDR governance vacuum, the Nordic countries are developing accounting guidelines that aren't aligned. Denmark allows public-private co-financing, and the same has been recommended by the environmental agency in Norway. In Sweden, accounting rules are still pending but the energy agency has recommended that if a project receiving state aid sells credits in the VCM, the aid would be reduced by the same amount to avoid double counting. They also recommend that the buyer of a CDR credit should communicate that they have contributed to finance climate projects and helped Sweden reach its climate targets, instead of offsetting emissions in its emissions accounting. Finland has yet to take a stance.

## Concluding remarks

The Nordic countries are strategically positioning the region as a leader in carbon management, as reflected in recent policy developments and announced projects. However, there is an unused potential for the Nordic countries to cooperate closer on realising negative emissions and establish shared value chains in the region more effectively. Harmonized positions on the governance of carbon removal reporting rules amongst Nordic governments would contribute to building credibility around carbon removal in general and make cross-border cooperation smoother.

**This report has been produced by Skift - Business Climate Leaders and ZERO within the vision project Climate Neutral Nordics. Climate Neutral Nordics consist of the Haga Initiative (SWE), Skift Business Climate Leaders (NOR), and Climate Leadership Coalition (FIN) and is financed by the Nordic Council of Ministers.**

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