

Optimising the impact of Nordic climate policies

POLICY BRIEF 2020:7

The challenge of reducing greenhouse gas emissions to halt climate change is global. It doesn't matter where emissions reductions take place, what matters the most is to reduce the overall global emissions as much as possible at the least possible cost. The Nordic countries' climate policies are relatively ambitious in an international perspective, and the countries have progressively raised their climate targets in recent years. However, when designing national climate policies, it is important to assess not only their effects on territorial emissions but also the degree to which they will affect emissions in other countries.

This policy brief provides recommendations on how the Nordic countries can optimise the overall impact of their climate policies. The recommendations are based on the analyses and main conclusions from *Climate Policies in the Nordics – Nordic Economic Policy Review 2019*. The report evaluates the cost-effectiveness and global impact of Nordic climate policy in the context of the Paris Agreement and the available mechanisms for international emissions trading.

EMISSIONS ARE AN EXTERNALITY

The main argument used by economists to motivate policy intervention against climate change is that emissions of greenhouse gases are an externality. This means that whereas the benefits of using fossil fuels are enjoyed by the user, the negative side effects are incurred by individuals all across the globe and by future generations. This also implies that the benefits of mitigating climate change largely accrue outside the country that imposes the climate policy. Therefore, international cooperation is required to achieve sufficiently ambitious policies – uncoordinated national self-interest will yield much too little mitigation.

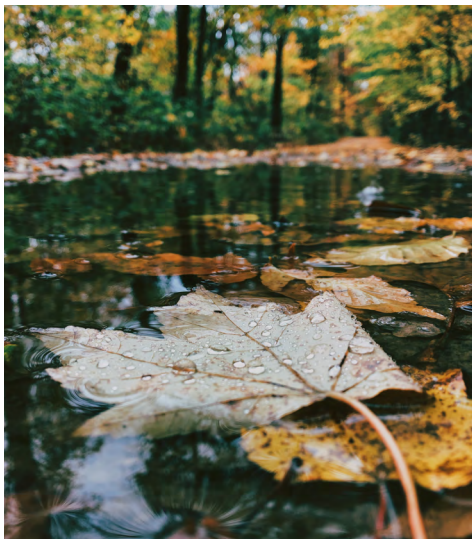
International coordination is also vital since national climate measures are likely

to affect emissions in other countries, and, in some cases, ambitious national strategies in one country will create incentives for less action elsewhere. These transboundary effects, whether positive or negative, are called spillover effects. As an example, national policies to reduce demand for oil will lower its world market price, which is likely to increase oil consumption elsewhere. This is called carbon leakage, which is when policy measures to reduce emissions in one country lead to an increase in others. On the other hand, technological advances in energy production in one country can, if diffused, have a positive impact on emission of greenhouse gasses elsewhere. This is an example of a positive spillover effect.

SHIFT TO A MORE GLOBAL PERSPECTIVE

The authors of Climate Policies in the Nordics – Nordic Economic Policy Review 2019 recommend a shift in focus in order to increase the cost-effectiveness of climate policies in the Nordic countries and optimise their global impact.

Rather than focusing mainly on national emissions reductions, the countries should further engage in international emissions trading and join forces to establish sufficiently strong international norms to achieve the objectives of the Paris Agreement. One of the key recommendations is to emphasize technology development of low-carbon technologies that lower the cost of reducing emissions, also for other countries. Lastly, the economists recommend Norway to shift focus from policies aimed at reducing domestic demand for fossil fuels to reductions on the supply-side.



ACCELERATE INTERNATIONAL CLIMATE ACTION

In the 2015 Paris Agreement, the global community set itself an objective to significantly reduce the risks and impacts of climate change by keeping the global average temperature rise 'well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C.'

The Paris Agreement is based on the so-called Nationally Determined Contributions (NDCs), which are voluntary commitments by countries all around the world to reduce emissions. The NDCs are to be reviewed every five years and are expected to become increasingly ambitious as time goes.

The current commitments, however, are far from sufficient for meeting the objectives of the agreement. Based on the current pledges, the predicted temperature rise is closer to 3°C or more. The Paris Agreement should therefore be viewed as merely the start of a long process for the world to address climate change. According to the authors of NEPR 2019, Nordic countries should aim to play a larger role in accelerating international climate action.

The Nordic countries should work closer together and team up with other ambitious states in the quest to establish sufficiently strong international norms to fulfil the Paris Agreement, requiring governments and other actors to do more to halt climate change.

NORDIC POLICIES ARE PART OF EUROPEAN CLIMATE TARGETS

It is important to keep in mind that Nordic climate policies are an integrated part of the EU's climate policies and emissions reduction targets. All Nordic countries, including non-EU members Norway and Iceland, have committed to the EU goals of reducing emissions by 40 per cent by 2030 from a 1990 baseline, and become climate neutral by 2050.

To achieve these goals, the sectors covered by the EU Emissions Trading Systems (EU ETS), which include power production, energy intensive industry and commercial aviation within the European Economic Area (EEA), must reduce emissions by 43 per cent by 2030, compared to 2005. The EU ETS is designed to ensure that this target will be met.

NORDIC CLIMATE POLICIES AND THE EU ETS

The EU ETS is a market based cap-and-trade system, which sets a limit on total emissions from the sectors covered by the system. Each year, emission allowances are auctioned or allocated to companies in the ETS sector, and these allowances can be traded on the market. These annual emission permits are issued at a declining rate, thus gradually reducing total emissions.

In fact, Nordic policy makers could rely entirely on the EU ETS to achieve the required reductions in the ETS sector, which accounts for about 45 per cent of CO₂ emissions in the EU. Despite this, all Nordic countries have policies to further reduce national emissions from the ETS sector, such as by offering extensive government support for renewable energy. Previously, such overlapping policies

increased climate policy cost without necessarily leading to a reduction in total European emission.

Within the EU ETS, a large surplus of unused allowances has been generated. This led to allowance prices below the level needed to accelerate the transition toward carbon neutrality. As a response to these imbalances, the system was reformed in 2018. The reforms implied that the allowance cap will be reduced at a faster annual rate than before, and an automatic annulment mechanism was introduced. Effectively, the latter implies that the more emission allowances are saved, the fewer new allowances will enter the market.

With the recent reform of the EU ETS, national policy measures that reduce the demand for emission allowances, such as subsidies for renewables, can, as opposed to before, contribute to a permanent reduction in total European emissions.

Another way of using national climate policy to reduce emissions has been the annulment of emission allowances. Countries in the EU ETS can implement such policies either by abstaining from auctioning some of the emissions allowances that have been allocated to them or by purchasing allowances in the market and withdrawing them from circulation.

The effectiveness of this policy is, however, severely reduced by the 2018 reforms of the EU ETS. According to NEPR 2019, annulment by an individual

European state in 2020 will only reduce the accumulated emissions in 2060 by 6 per cent of the initial annulment. The reason is that the impact of the annulment will be largely offset by the automatic annulment mechanism. Annulment leads to fewer allowances saved and therefore more new allowances entering the market.

For Nordic countries and individual EU member states that wish to take the lead in climate policy, immediate annulment of emission allowances is considered a highly ineffective policy and is therefore not recommended.

EMISSIONS TRADING BETWEEN NATIONS

Emissions from most other sectors, such as domestic transport, buildings and agriculture, are regulated by the European Effort Sharing Regulation (ESR). To reach the EU target of a 40 per cent reduction by 2030, these sectors must cut emissions by 30 per cent, relative to 2005. According to NEPR 2019, the main task for the Nordic governments is to control the emissions from their non-ETS sectors.

The ESR sets binding national emission reduction targets based on each country's GDP per capita. This means that rich countries must reduce emissions proportionally more than the less wealthy to ensure that the Euro-

pean climate targets are met. As an example, while Nordic countries are obligated to reduce non-ETS emissions by 39 per cent or more, Bulgaria's obligation is zero per cent relative to 2005.

One of the key points made in NEPR 2019 is that marginal abatement costs in the Nordics are high in an international comparison. The countries have already implemented a wide range of measures to reduce emissions, which means that the cost of reducing an additional tonne of CO₂ is higher than in countries that have done less. Hence, bilateral emissions trading between the Nordics and other European states would increase the cost-effectiveness of Nordic climate policy.

The ESR is constructed to offer a range of flexibility mechanisms to even out the marginal cost of emissions and increase the cost-effectiveness of European climate policies. For instance, countries may borrow emission permits from the next allocation period or save unused permits for the future. They can also transfer EU ETS emissions to the ESR sector, or sell emission allowances to other states.

To increase the cost-effectiveness of Nordic climate policies, Nordic countries should make further use of the existing EU climate policy frameworks, notably by engaging in voluntary bilateral emissions trading in the ESR sector with other European countries.



TECHNOLOGY DEVELOPMENT TO MAXIMISE GLOBAL IMPACT

The goals of the Paris Agreement manifest themselves in ambitious climate policies all across the Nordic Region. To name a few examples, Nordic countries' emission reduction targets exceed those of other comparable industrialized countries, fossil fuels are heavily taxed, and all five countries have implemented a number of sector-specific policy measures addressing ESR emissions.

However, the Nordic Region accounts for less than 0.5 per cent of global emissions, indicating that even if all Nordic countries would achieve carbon-neutrality, it would have very limited direct impact on global emissions. The question therefore remains if there is any rational reason for the Nordic countries to maintain such ambitious national climate policies.

One reason is that by leading from the front, Nordic countries can inspire other countries to introduce more ambitious climate measures, and then there is the argument that the Nordics have a moral obligation to reduce emissions, being among the world's wealthiest nations.

But how do the Nordic countries achieve the greatest possible impact? According to the economists, the key to maximising the global impact of Nordic climate policy is to emphasize development of technologies that would help also other countries in the transition to a low-carbon society.

To optimise the global impact of Nordic climate policy, the countries should focus on developing clean technologies that lower the cost of reducing emissions, also in other countries. In doing so, Nordic countries should concentrate on areas in which they have expertise, emphasizing clean technologies with a global market potential.

Examples of such technologies are Danish offshore wind energy technology, Norwegian offshore oil and gas technology, maritime electric propulsion and technologies for carbon capture and storage. To speed up development, the economists recommend better coordination of Nordic R&D policies.

REDUCED OIL EXTRACTION RECOMMENDED IN NORWAY

Norway represents a special case when it comes to climate change. The country has implemented highly ambitious policy measures to reduce domestic demand for fossil energy, thus reducing emissions, such as carbon pricing and electric vehicle policies. At the same time, Norway's exports of oil and gas contribute significantly to global emissions.

To determine the optimal combination of supply- and demand side climate policies, the cost of reducing emissions on either side must be taken into account, together with the effect on global emissions. Here, it is important to keep in mind that policy instruments on both sides can lead to carbon leakage. Policies to reduce domestic demand for fossil energy will lead to lower global prices, which might increase demand and consumption elsewhere. Reductions in oil extraction, on the other hand, reduce global supply. This will lead to higher

prices that reduce demand, but may also encourage increased supply in other countries. Another aspect is that higher oil prices are likely to encourage a more rapid development in energy efficiency and energy-saving technology.

The NEPR 2019 analysis suggests that the optimal combination of supply- and demand-side policy measures in Norway should include reduced extraction as an important component.

It is recommended that Norway shifts its focus from climate policy instruments aimed at reducing domestic demand for fossil energy to reductions on the supply-side, such as by abstaining from extracting oil from certain areas. This would increase the cost-effectiveness of Norwegian climate policy.



This policy brief is based on the analyses and recommendations from *Nordic Economic Policy Review 2019*.

The report consists of the following articles:

Climate Policies in the Nordics

Lars Calmfors and John Hassler

International Climate Policy in the Post-Paris Era

Naghmeh Nasiritousi and Karin Bäckstrand

National Climate Policies and the European Emissions Trading System

Frederik Silbye and Peter Birch Sørensen

Are Climate Policies in the Nordic Countries Cost-Effective?

Björn Carlén and Bengt Kriström

Global Impact of National Climate Policy in the Nordic Countries

Mads Greaker, Rolf Golombek and Michael Hoel

Supply-Side Climate Policy in Norway

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