

# Status Outlook 2023

Denmark's national climate targets and  
international obligations

English Policy Brief



## Introducing the Danish Council on Climate Change

The Danish Council on Climate Change is an independent body of experts who advise the Danish government on how to transition to a climate-neutral society, thereby ensuring that, in the future, we can live in a country with very low emissions of greenhouse gases while retaining our level of welfare and development. Each year, the Danish Council on Climate Change assesses whether the government's climate efforts have demonstrated that Danish climate targets are likely to be met. The Council also contributes to the public debate and regularly prepares analyses and recommendations for climate efforts.

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Published 28 February 2023

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## Abstract

The newly elected Danish government faces the major task of fulfilling the objectives of the Danish Climate Act and ensuring that Denmark can be a climate frontrunner that can inspire the rest of the world. In its annual status report, the Danish Council on Climate Change (DCCC) takes stock of Danish climate policy, assessing whether current policy efforts demonstrate that Denmark will meet its national climate targets and its EU obligations, e.g. the obligations under the newly agreed burden sharing agreement and the Regulation on land use, land use change and forestry (LULUCF). Finally, the report includes recommendations for policies and measures that the government should prioritise in the coming year.

Denmark's current national climate targets include a target of a 50-54 percent reduction in greenhouse gas emissions by 2025 compared to 1990, a reduction of 70 percent by 2030 and climate neutrality no later than 2050.

The DCCC commends the government for outlining a strategy for how to meet the 70 percent target, but, overall, the Council assesses that the government has not yet demonstrated that the targets are likely to be met. This is mainly due to a significant risk that several of the elements in the government's strategy will not deliver the expected reductions in greenhouse gas emissions. The Council also finds that even if national targets are met, this will not necessarily mean that Denmark also fulfils its new EU obligations. Most likely, Denmark needs to do more in the transport, agricultural and household sectors to also meet these obligations. Finally, the DCCC recommends that the coming year's climate policy should focus on implementation of already agreed policies and measures and on addressing emissions from the agricultural sector.

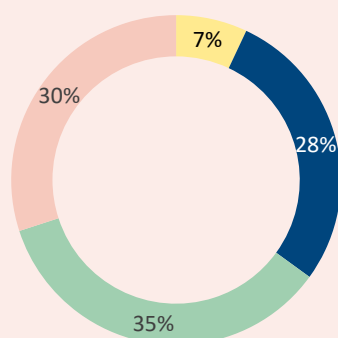
This Policy Brief provides a short English summary of the main findings, conclusions and recommendations of the DCCC's annual status report. The full report can be found (in Danish) here:

<https://klimaraadet.dk/da/rapport/statusrapport-2023>

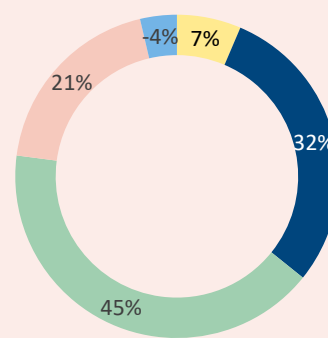
### Box: Danish greenhouse gas emissions by sector in 2020 and 2030

Today greenhouse gas emissions are more or less equally divided between agriculture and land use, transport and energy including industry and households. By 2030, the agricultural and land use sector is expected to account for as much as 45 percent of total emissions unless additional policies and measures are implemented to reduce emissions from this sector. This is shown in the figure below. Negative emissions from bioenergy with CCS (carbon capture and storage) is expected in 2030.

CO<sub>2</sub>e emissions in 2020 (44.9 million tonnes CO<sub>2</sub>e in total)



CO<sub>2</sub>e emissions in 2030 (33.6 million tonnes CO<sub>2</sub>e in total)



■ Waste ■ Transport ■ Agriculture and land use ■ Energy, Industry and heat ■ CCS

## Conclusions regarding the likelihood of reaching Denmark's 2030 target

According to the Danish Climate Act, the DCCC must assess whether the government's climate efforts demonstrate how to meet the target of reducing emissions of greenhouse gases by 70 percent in 2030 compared to 1990. Therefore, the annual status report primarily focuses on the 2030 target, but also reports on the status of progress in reaching the 2025 target of reducing emissions between 50 and 54 percent compared to 1990.

### Meeting the 70 percent target in 2030 remains a significant challenge

The 70 percent target implies that Denmark must halve its emissions from 2020 to 2030, which is a significant challenge, as shown in Figure 1. The figure shows the path from 2020, which is the latest year with full statistics for the actual Danish emissions, to the target in 2030. The pathway is divided into the reductions that the Danish Energy Agency expects based on previous years' climate policy and the general market development, and on reductions as a result of new political agreements and declared policy during 2022. Overall, the reductions bring Denmark just within the 70 percent target.

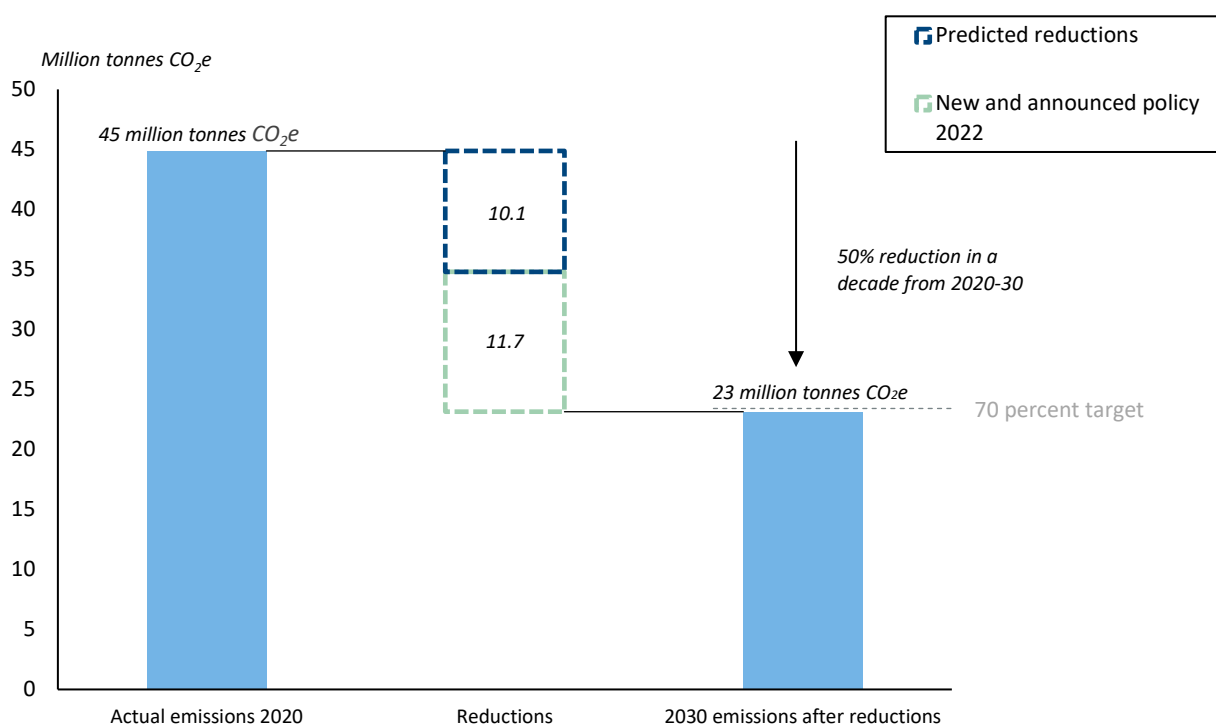


Figure 1 The pathway to 70 percent reduction in 2030

Note: 'Predicted reductions' correspond to previous years' climate policies in combination with the general market development. 'New and announced policies 2022' correspond to the policies and measures that were agreed in 2022 and those that are at the stage of a proposal or a strategy.

### The pathway to 2030 is uncertain

Despite the pathway to reductions indicated in Figure 1, the DCCC does not consider it to have been demonstrated that the government's climate actions will meet the 70 percent target. While Denmark's climate actions are moving us towards the reduction targets, there is currently too high a risk that the government's outlined pathway will not bring Denmark to its destination.

The DCCC's assessment of the government's climate efforts towards 2030 is summarised in Figure 2. Two dimensions are particularly important: The degree of concretisation and the level of risk.

## 1. Degree of concretisation

When assessing whether or not the government has sketched a strategy for meeting the 2030 target or not, the DCCC's first step is to examine the sum of government policies and measures. These policies and measures include both those that have already been agreed and approved by the Danish Parliament and those that have been announced either as proposals, strategies, analyses or technical potentials. The different policies and measures are categorised according to their degree of concretisation from A-E in Figure 2.

In 2020, when the Climate Act was adopted, the Danish Energy Agency estimated that, without new policies and measures, Denmark would emit approximately 43 million tonnes of CO<sub>2</sub>e in 2030. This corresponded to a reduction of 44.8 percent compared to 1990 and left a reduction gap of 20 million tonnes to the 70 percent target for 2030. In its 2022 outlook, the Danish Energy Agency projects that this reduction gap will be reduced by 8.3 million tonnes due to policies approved since 2020. Even though the projected 2030 emissions have decreased considerably, there is still a reduction gap of around 11.4 million tonnes CO<sub>2</sub>e after adjustments by the DCCC. New policies and measures agreed in 2022 reduce the gap by 5.9 million tonnes, leaving a remaining gap to 70 percent of 5.5 million tonnes. This gap is closed through the government's suggested climate policy for the agricultural sector from December 2022, so in terms of concrete climate policy, the government has outlined policy to reach the 70 percent target. However, this conclusion does not consider the combined risks of the suggested climate policy.

## 2 Level of risk

The DCCC's second step is to examine the level of risk associated with the initiatives. As Figure 2 shows, a majority of last year's policies and measures are associated with moderate or high risk according to DCCC's assessment. The DCCC annual status report highlights three initiatives that are particularly risky:

- **Tax on agricultural emissions.** The government has proposed a tax on agricultural greenhouse gas emissions and supporting measures. These measures should lead to a reduction of 5 million tonnes by 2030 according to the government. But, at the same time, the tax must not affect the competitiveness of the agricultural industry. In a separate report <https://klimaraadet.dk/da/analyse/landbrugets-omstilling-ved-en-drivhusgasafgift>, the DCCC finds that a tax of €100 per tonne of agricultural emissions will not be sufficient to reach the target with existing technologies and under the existing production structure. There will be a need for implementing new and not yet proven technologies and for changing the structure of the agricultural production to reach the target. The specific proposal for the tax level and supporting measures from the government remain to be announced.
- **CO<sub>2</sub> tax on industrial emissions.** The DCCC also finds that the legislation for a CO<sub>2</sub> tax on primarily industrial emissions is associated with considerable risk because the structural effects of the tax could be much lower than expected by the government. This has also been pointed out by the Danish Economic Councils (an independent economic advisory body).
- **Carbon capture and storage (CCS).** The government also relies heavily on CCS to meet its 70 percent target. However, large-scale CCS is still not a proven technology in Denmark and there are many unsolved practical and regulatory issues.

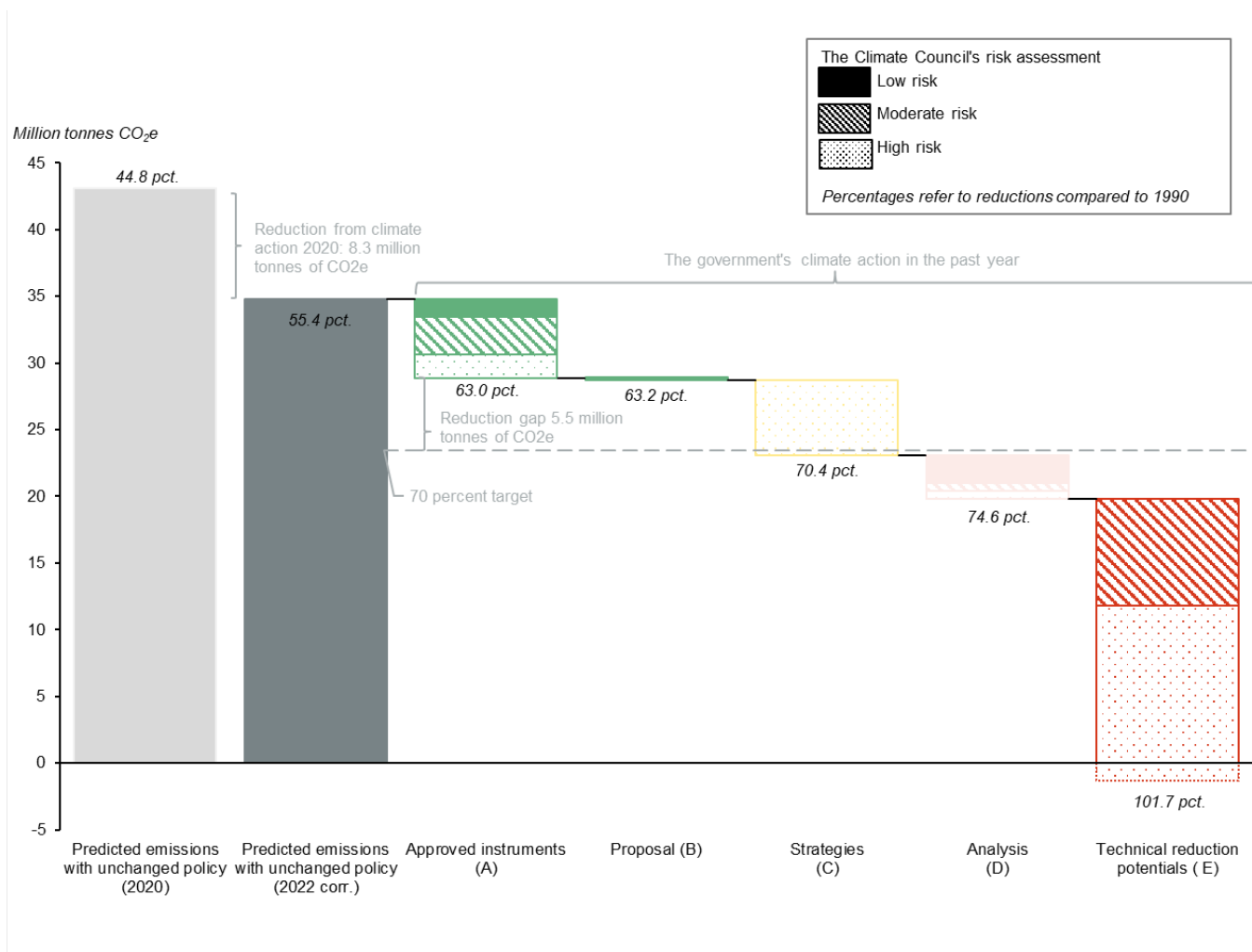


Figure 2 Assessment of the government's initiatives with respect to reduction effect, concreteness and risk in 2030

### It is uncertain whether Denmark will meet its 2025 target

The deadline for Denmark's 2025 emissions reduction target is of course imminent. This restricts the time left to adopt and implement new policies and measures, making it more difficult to close the gap. The DCCC estimates that the reductions needed to reach the lower limit of the 50-54 percent target are approximately 0.9 million tonnes of CO<sub>2</sub>e, while the distance to the target's upper limit is 4.0 million tonnes. However, the energy crisis and large increases in energy prices have given rise to significant uncertainty about these estimates, an uncertainty that can go both ways, as higher prices induce energy savings, but higher gas prices lead to increasing consumption of oil and coal.

### The Climate Act also contains Danish objectives for the long term

The new Danish government has proposed making the long-term Danish climate targets more ambitious, advancing climate neutrality to 2045 and setting a goal of 10 percent net negative emissions in 2050. The new goals have not yet been adopted in the Climate Act but; the Act is expected to be revised during 2023.

While the more ambitious long-term goals will increase the Danish contribution to combatting global climate change, they also imply an increasing need to capture and store CO<sub>2</sub> either from biogenic sources or directly from the air. The DCCC concludes that it is difficult, at present, to see how large-scale negative emissions can be realised, as it has not yet been demonstrated that capturing CO<sub>2</sub> directly from the air will become technically and

economically feasible in the future, and because a continued high consumption of biomass is not sustainable at a global level.

## Conclusions regarding Denmark's EU obligations

The climate policy of the EU is developing rapidly, and many directives are being tightened following the EU Climate Law and the *Fit for 55*-package from 2021. The new directives show how the EU will meet its overall greenhouse gas emissions reduction target of 55 percent below 1990 level. EU's climate legislation also sets the framework for Danish climate policy.

### EU gives Denmark new climate obligations

Denmark was early to set ambitious climate targets for greenhouse gas reduction, and this has left an impression that Denmark is far ahead of most other countries. But the reality is that the EU's climate policy goes further than Danish policies in several areas. It gives Denmark new obligations and pushes Danish climate action.

Most importantly, in December 2022 agreements were reached between the European Parliament, the Council of Ministers, and the European Commission amending the EU Emissions Trading System Directive, the burden sharing agreement and the LULUCF Regulation. Together these framework agreements cover all emitting sectors in Denmark, as shown in Figure 3.

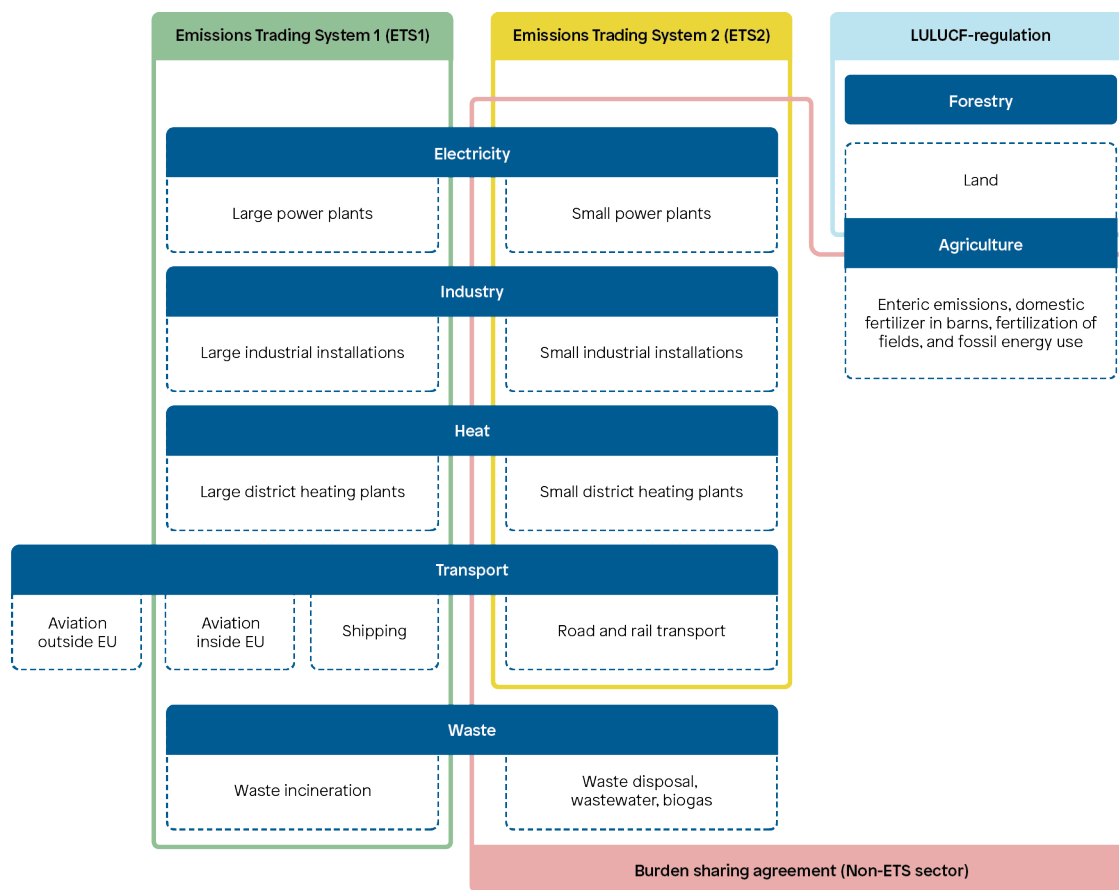


Figure 3 Overview of emissions sources covered by the different EU framework regulations

Note: In Denmark and Sweden waste incineration is included in ETS1, while this is not the case for other Member States

### The EU obligations will be even harder to meet than Denmark's national targets

The EU burden sharing agreement implies that Denmark must reduce emissions in agriculture, transport, households and small industries by 50 percent in 2030 compared to 2005 and that emissions in the LULUCF sector also have to be reduced considerably. EU's climate targets are budget targets for the entire period and not one-year targets as the Danish targets. There is a certain flexibility in how a Member State can meet its EU targets. If there is a higher uptake of CO<sub>2</sub> than emissions of CO<sub>2</sub> in the LULUCF sector in one period, a country can generate LULUCF credits which, to a certain extent, can be used to compensate for emissions in the non-ETS sector in the same period. It is also possible for a country to cancel a certain number of emission allowances from the emissions trading system (ETS) and use these to comply with the obligations in sectors outside the emissions trading system (non-ETS sectors). The DCCC has estimated that Denmark can use 2.9 million LULUCF credits to meet the obligation in the non-ETS sector during the period 2021-2025. Furthermore, the government has decided to cancel 4 million CO<sub>2</sub> allowances. Taking these flexibilities into account, the DCCC has estimated an accumulated reduction gap of approximately 18 million tonnes over the period 2021-2030. Hence, Denmark is not expected to meet the stricter reduction obligations coming from the EU without further policies and measures. This is shown in Figure 4.

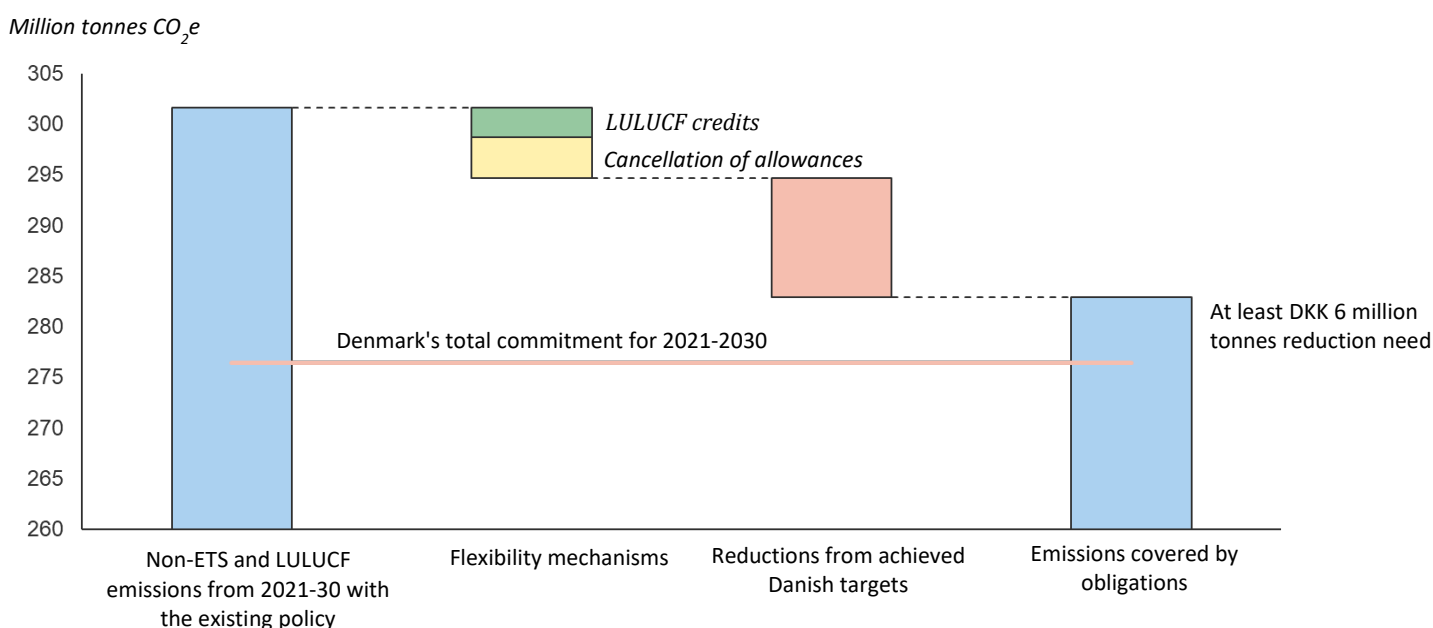


Figure 4 Denmark's reduction obligations in the non-ETS and LULUCF sectors

Note: Denmark is expected to over-comply with the LULUCF obligations in the period 2021-2025. The surplus of 2.9 million tonnes can be used to comply with obligations in the non-ETS sector. Denmark has access to cancelling 8 million ETS allowances that can be used to comply with non-ETS obligations. It has so far been decided to use 4 million allowances. The government has not yet decided whether it will also use the remaining 4 million allowances.

Figure 4 also shows that meeting Denmark's own climate targets for 2025 and 2030 will fall below what is needed to comply with Denmark's EU obligations. There will probably still be a reduction gap of at least 6 million tonnes of CO<sub>2</sub>e. Although Denmark's own climate goals require significant action, it is far from guaranteed that the national effort will automatically ensure that the EU obligations are met.

The requirements from the EU must be considered when designing Danish climate policy in the future. Measures that could help close the gap include advancing reductions in agriculture, higher taxes on diesel or cancellation of additional EU allowances. However, it must be noted that using allowances comes at a cost, as the government foregoes the revenue it could have obtained by auctioning the allowances. In addition, cancelling EU allowances does not contribute to Denmark's long-term transformation towards climate neutrality.



### **Future EU obligations within renewable energy and energy efficiency also require special attention**

In this year's status report, the DCCC also focuses on two other pieces of EU legislation, namely the energy efficiency and renewable energy directives. Although amendments to these directives have still not been finally agreed by the EU parties, the DCCC has assessed the implications that the different proposals may have for Danish climate policy. The main conclusions are:

- **Overall renewable energy target.** Denmark is expected to meet its share of the overall EU target for the share of renewable energy in 2030.
- **Renewable energy in transport.** It is currently uncertain whether Denmark will be able to fulfil the EU obligations regarding the use of renewable energy in the transport sector through already adopted Danish policies and measures. The obligations require enhanced use of hydrogen and advanced biofuels.
- **Energy efficiency.** The European Commission's proposal for a new energy efficiency directive and amended building directive will require increased focus on energy savings in Denmark, if adopted.
- **Biomass.** The European Parliament has proposed an amendment on biomass to the revised renewable energy directive. The proposal could have consequences for Denmark if it is adopted. The proposal may limit Denmark's possibilities to support bioenergy, which accounted for 73 percent of Denmark's consumption of renewable energy in 2021. However, the proposal may also assist Denmark in its transition to an energy system that is less dependent on biomass, which is a scarce resource, nationally and globally.

## **Recommendations**

The DCCC's annual status report provides recommendations for new climate policy initiatives that can contribute to meeting the Danish national targets, complying with Denmark's EU obligations, and addressing emissions of greenhouse gases outside Danish borders.

Climate policy can be divided into two main elements that must ensure that the climate targets are met. First, already approved policies and measures need to be implemented before they will influence actual, measurable reductions of greenhouse gas emissions. Second, new policies and measures must be approved to further reduce emissions in 2025 and 2030 compared to the currently projected levels for 2025 and 2030 that are likely to be obtained by current policies (the frozen-policy scenario).

### **Implementation is key**

Many new climate policy measures have been adopted since the approval of the Danish Climate Act in 2020. This means that major changes must take place in a very short time. For many of the measures, the implementation will require a great deal of effort from the authorities. Examples of this are:

- **Rewetting of peatlands.** Even though considerable funds have been set aside to compensate farmers for rewetting their peatlands, practical barriers prevent or prolong actual rewetting. Such barriers can be flooding of neighbouring farmland, problems with phosphor leakage when rewetting or the fact that many owners need to agree to stop the drainage of their land.
- **Wind and solar capacity.** An agreement by the Danish Parliament from June 2022 aimed to quadruple electricity production from onshore wind and solar generation by 2030. At the same time, offshore wind capacity is to be increased by at least 4 GW before 2030. The ambitions are high, but expansion of wind and solar capacity is being delayed because of administrative burdens and local resistance.
- **CCS.** With the policies and measures that have already been approved, it is expected that carbon capture and storage will reduce greenhouse gas emissions by 3.2 million tonnes in 2030. But, to date there are no CCS facilities in Denmark, and establishment of facilities for both capturing and storing CO<sub>2</sub> underground

requires significant involvement of the authorities for planning, co-ordination and regulation before CCS can have effect in practice.

### New policies and measures must address several targets

New policies and measures have to address both short- and long-term targets and they should address both national, EU and global emissions. The DCCC has identified a total of seven important focus areas for Danish climate policy in the coming year, as shown in Figure 5.

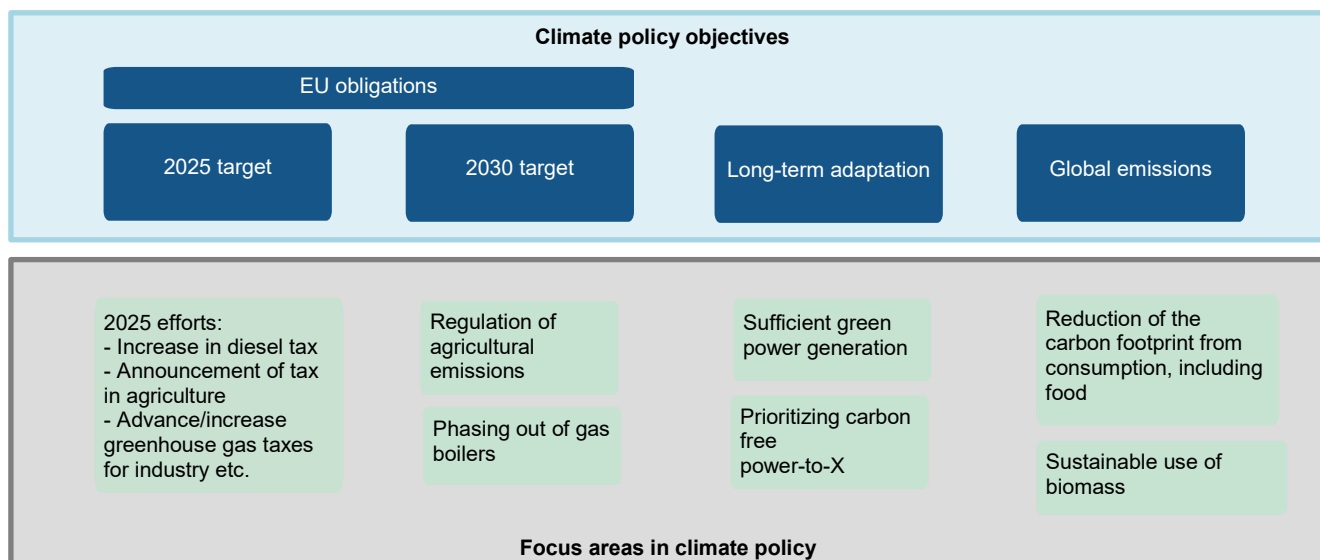


Figure 5. Important focus areas for Danish climate policy in the coming year

Note: The policies and measures are placed under the targets that they primarily address. This does not mean that they do not also have an effect on other targets.

The DCCC finds that priority should be given to the following policies and measures:

**2025 efforts.** The 2025 target is only a few years away and there is currently an outstanding reduction gap to even reach the target's lower limit of 50 percent reduction. The Danish Parliament should as soon as possible adopt measures that can close the gap. The measures may include, for example, a higher tax on diesel.

**Regulation of agricultural emissions.** In 2021, the Danish Parliament agreed on an emissions reduction target for the agricultural sector of 55-65 percent in 2030 compared to 1990. This corresponds to a reduction of 5-7 million tonnes from the currently projected level of emissions in 2030. If this target is met, it is likely that the 2030 target will also be met, but concrete regulation of agricultural emissions is still lacking. The DCCC recommends that a regulation of agricultural emissions be adopted as soon as possible. A uniform tax on greenhouse gas emissions should form the cornerstone of this regulation.

**Phasing out of gas boilers.** A decision has been made in Denmark to phase out gas for space heating. This transition must proceed rapidly, while at the same time the chosen solutions must work in the long term. This requires, among other things, that a number of barriers in connection with the transition are taken care of.

**Sufficient green power generation.** The green transition implies a sharply increasing demand for electricity. This requires an extensive expansion of wind and solar energy, including the necessary expansion of the electricity grid and a focus on ensuring the security of electricity supply.

**Prioritising carbon-free power-to-X.** There are plans for a significant expansion of power-to-X in Denmark. However, some e-fuels contain carbon, which is a scarce resource. Therefore, priority should be given to e-fuels that are carbon free, and when using carbon to produce e-fuels, it should be carefully considered if alternatives exist.

**Carbon footprint from consumption, including food.** Denmark has a large carbon footprint from consumption. The DCCC argues that a benchmark for Denmark's consumption-based carbon footprint could help to guide efforts to reduce this footprint. In particular, Danes have a high carbon footprint from their diet. This is not sustainable from a climate point of view, and there is a need to adjust consumption towards a more climate-friendly diet.

**Sustainable use of biomass.** Denmark's use of biomass for energy production is high and significantly higher than a globally sustainable per capita use. Seventy-three percent of Denmark's renewable energy consumption comes from bioenergy. Furthermore, Denmark imports a large share of its biomass for energy production from other countries. Biomass is a scarce resource and not, in general, carbon neutral. An overall long-term strategy should therefore be drawn up to reduce Denmark's consumption of biomass. At the same time, incentives should be changed to promote additional carbon uptake in forests and reduce carbon emissions from the incineration of biomass.

