

National Methane Action Plan

Norway

November 2022



Norwegian
Government

Introduction

Norway is a constitutional monarchy, based on democratic principles and separation of power between the parliament (Storting), the government and the courts. The current government is a coalition between the Labour Party and the Centre Party. The Prime Minister is Jonas Gahr Støre (Labour Party).

Norway sees first-hand the growing impact global warming has on the Arctic. Reaching climate tipping points, such as the melting of summer sea ice in the Arctic, could lead to devastating impacts globally, particularly for developing countries. Rapid action on mitigation of methane emissions provides an important tool to slow global warming and reduce the chances of tipping points. Over the years, Norway has taken action to reduce its methane emissions, including work in a regional context to limit short-lived climate pollutants, including methane, within the Arctic Council. In 2021, Norway joined the Global Methane Pledge, hereby committing to a collective goal of reducing global methane emissions by at least 30 percent from 2020 levels by 2030.

The Ministry of Climate and Environment, led by Minister Espen Barth Eide (Labour) has the overarching cross-sectoral responsibility for co-ordination and implementation of the Norwegian climate policy, which includes methane. Other Ministries are responsible for developing and implementing policies in their respective sectors. Sector-specific ministries responsible for work to reduce methane emissions are the Ministry of Petroleum and Energy (oil and gas), the Ministry of Agriculture and Food (agriculture) and the Ministry of Climate and Environment (waste). In addition, the Ministry of Foreign Affairs is responsible for international development efforts, including administration of Norway's Official Development Assistance (ODA) which includes funding towards methane-related projects.

Below is a general overview of the relevant Norwegian ministries responsible for action to meet Norway's climate targets:

- Ministry of Climate and Environment: Overall responsibility of the government's climate policies, including short-lived climate pollutants, the climate collaboration with the EU and the EU's Emissions Trading System (ETS), the international climate negotiations, responsibility for Enova (state company tasked to promote a shift towards more environmentally friendly energy consumption and production), biofuels, the food waste agreement and CO2 compensation scheme.
- Ministry of Finance: Taxes and duties, emissions projections and, together with the Ministry of Climate and Environment, integration of information on emission effects in the budgetary process.
- Ministry of Petroleum and Energy: Energy and petroleum policies, climate, industry and technologies, including carbon, capture and storage (CCS), hydrogen and offshore wind.
- Ministry of Transport: Civil aviation-, public roads and rail transport sector and ferry services forming part of the national road system, plans for the transport sector and land use.
- Ministry of Agriculture and Food: Agriculture and food policies, covering land utilisation, agriculture and forestry and development of new agriculture-based industries.
- Ministry of Trade, Industry and Fisheries: Designating future-oriented industrial and seafood policies to maximise value creation within a sustainable framework and sustainable management of fisheries- and aquaculture industries. Coordinate green shipping, policies regarding Norwegian business activities and Nysnø, the Norwegian state's climate investment company.

- Ministry of Local Government and Regional Development: Responsible for the Planning and Building Act, including environmental impact analyses and county planning, coordination of national work on the sustainable development goals, rural and regional policy and state-owned construction projects and central government buildings.
- Ministry of Health and Care Services: Nudging the population to adhere to official dietary advice.

International and multilateral priorities:

Norway is active in several international processes concerned with methane, including the following:

- Paris Agreement
- Global Methane Pledge (GMP)
- Global Methane Pledge - Energy Pathway
- Climate and Clean Air Coalition (CCAC)
- Arctic Council, through the Expert Group on Black Carbon and Methane, and relevant Working Groups (i.e. the Arctic Monitoring and Assessment Programme AMAP, Arctic Contaminants Action Program ACAP)
- Oil and Gas Methane Partnership 2.0
- Global Methane Initiative
- Economic Commission for Europe (UNECE) CLRTAP
- World Bank Global Gas Flaring Reduction Partnership (GGFRP)

Norway joined the **Climate and Clean Air Coalition (CCAC)** in April 2012 and has been a key contributor to the Coalition Trust Fund. Norway is an active partner in the Coalition and was a member of the steering committee from 2014-2020. During this time Norway contributed to the new 2030 vision¹ and the Action Programme to Address the 1.5°C Challenge. Both documents benefited strongly by the work of the Global Pathway Approach Task Team that Norway was co-leading to 2019.

Norway puts great emphasis of the work that has been done on short lived climate forcers by the various working groups and expert groups of the Arctic Council. Norway is currently co-leading the **Arctic Monitoring and Assessment Programme (AMAP)** SLCF Expert Group.

Norway was instrumental to the decision by the **IPCC-49 Plenary** to produce an IPCC Methodology Report on Short-lived Climate Forcers. The work is now well under way, and Norway is contributing with funds and participation in expert meetings.

Norway joined the **Global Methane Pledge** in 2021.

In addition, Norway contributes to international work by providing funding to:

¹ <https://www.ccacoalition.org/en/content/our-2030-vision>

Cooperation with developing countries related to fossil fuels. The Norwegian Oil for development (OfD) Programme is assisting developing countries in their effort to manage petroleum resources in a more sustainable manner. Last year, the programme organised a global webinar series in collaboration with UN Environment focusing on the energy transition and climate mitigation in upstream oil and gas. In the bilateral cooperation with Colombia a webinar on methane and fugitive emissions from upstream oil and gas was organised. The issue of methane emissions from the oil and gas sector is also high on the agenda in the bilateral cooperation with Iraq and several capacity building activities took place targeting the National Ministerial Task Force on Methane Emissions. In 2021, Iraq included methane mitigation measures in its first Nationally Determined Contribution and also joined as a participant in the Global Methane Pledge.

The Norwegian government has decided to gradually phase out the OfD by 2024. This change was conducted to steer the development assistance in a greener direction with focus on climate change and renewable energy. In accordance with the Norwegian development policy with focus on renewable energy, a new Energy for Development (EfD) programme is in the process of being developed.

World Bank Gas Flaring Reduction Partnership (GGFR). Norway has over several years supported GGFR, which offers technical support and funding to a multi-donor trust fund composed of governments, oil companies and multilateral organisations committed to ending routine gas flaring at oil production sites across the world. At the Major Economies Forum in June 2022 Norway pledged additional support of NOK 10 mill. to GGFR.

Climate finance. To further the goals of the Paris Agreement, the Norwegian government has committed to double climate finance from 7 billion to 14 billion by 2026, compared to 2020. A new Norwegian Climate Investment Fund is established, and the plan is to allocate NOK 10 billion over five years to invest in renewable energy in developing countries with large emissions from coal and other fossil power production. The fund will be managed by Norfund. For more information, see chapter 15 of Norway's national inventory report to the UNFCCC²



Building Block #1: Emissions

Methane accounted for 9.6% of Norway's greenhouse gas emissions in 2021³, whereas CO2 accounted for 83%.

Methane emissions for 1990-2020 were reported to UNFCCC the 15th of April 2022. Emissions Reported data and National Inventory Report can be found at:

[National Inventory Submissions 2022 | UNFCCC](#)

Projections for 2025 and 2030 has been reported to ESA in March 2021 and are available at [Reportnet 3 \(europa.eu\)](#). Both emissions and projections were reported in Common Reporting Format (CRF).

² [Greenhouse Gas Emissions 1990 -2020: National Inventory Report - Miljødirektoratet \(miljodirektoratet.no\)](#)

³ Methane emissions are measured with CO2-equivalents using GWP100.

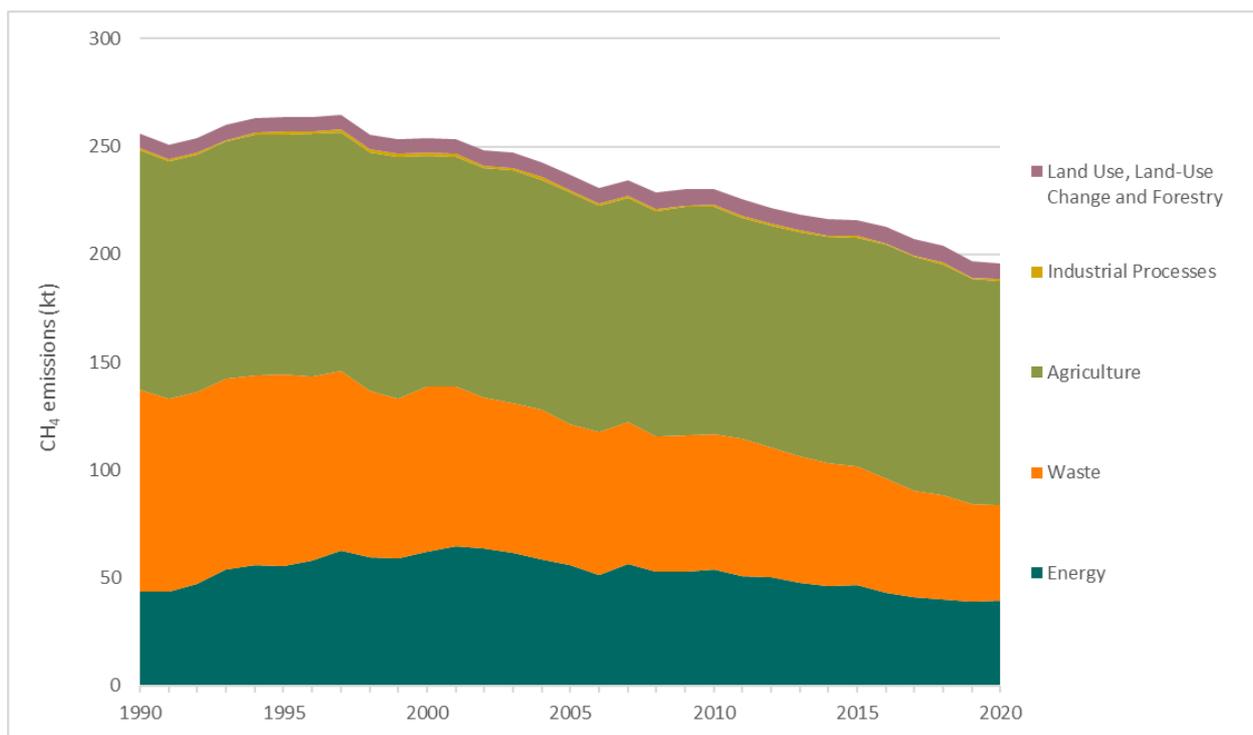


Figure 1. Historical emissions of methane in Norway 1990-2020 with LULUCF
 Source: Norwegian Environment Agency and Statistics Norway

The emissions of methane without LULUCF amounted to approximately 188,000 tonnes in 2020 while methane emissions with LULUCF amounted to approximately 196,000 tonnes in 2020 (Figure 1). In the following, only emissions without LULUCF will be presented.

Methane emissions have been reduced by 24.4% since 1990 and 0.5% since 2019. The long term reduction is primarily due to a decrease in emissions from waste treatment. According to projections the emissions of methane are expected to be further reduced towards 2030 (Figure 2).

In 2020, 55.2% of methane emissions originated from agriculture. Emissions are dominated by releases from enteric fermentation, which accounted for 47.4% of Norway's total methane emissions in 2020. Emissions from agriculture have been reduced by 6.5% since 1990 but are expected to remain unchanged towards 2030. Mitigation measures introduced towards 2030 as a result of the climate agreement between the Government and the farmers' organizations from 2019 could however affect this outcome, but it is difficult to predict to what extent these emissions reductions will be from methane or other components.

In 2020, 21.1% of methane emissions originated from energy. The most prominent source of emissions within the energy sector is fugitive emissions from oil and gas extraction. Emissions from the energy sector have been reduced with 9% since 1990 and are expected to be reduced towards 2030, to a level 16% below the 1990 emissions, according to projections.

The waste sector accounted for 23.3% of Norway's methane emissions in 2020. Within this sector solid waste disposal on land (landfills) is the main source of emissions. Emissions from waste have been reduced by 53.1% since 1990, and emissions are expected to be further reduced towards 2030.

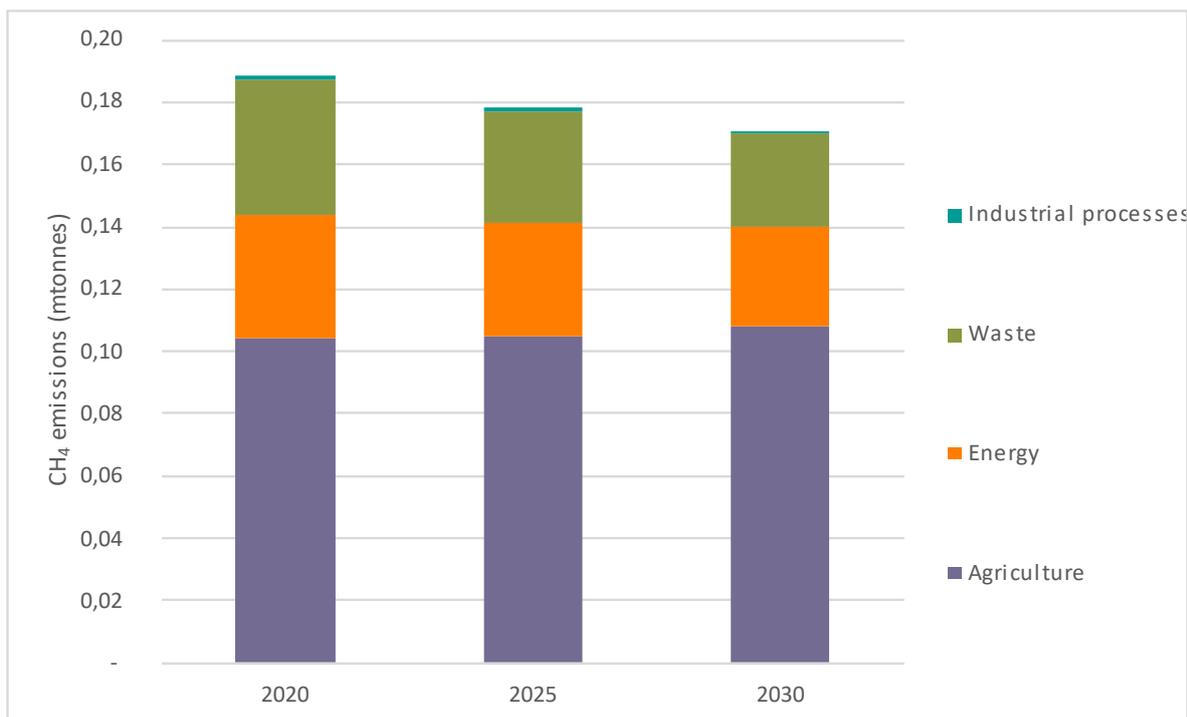


Figure 2. Historical emissions of methane in Norway 2020, and projections 2025, 2030. Without LULUCF.
 Source: Norwegian Environment Agency, Statistics Norway, and Norwegian Ministry of Finance, National Budget 2023



Building Block #2: Analytics and Mitigation Measure Assessment

Methane is an integrated part of Norwegian mitigation measure assessments.



Building Block #3: Targets

Norway's climate targets

Norway does not have a separate goal on methane. Methane is however covered by the targets mentioned below.

Norway will become a low-emission society by 2050. Achieving this target will involve reductions in greenhouse gas emissions of the order of 90–95 % by 2050 from the level in the reference year 1990. The effect of Norway's participation in the EU Emissions Trading System (ETS) is to be taken into account in assessing progress towards this target.

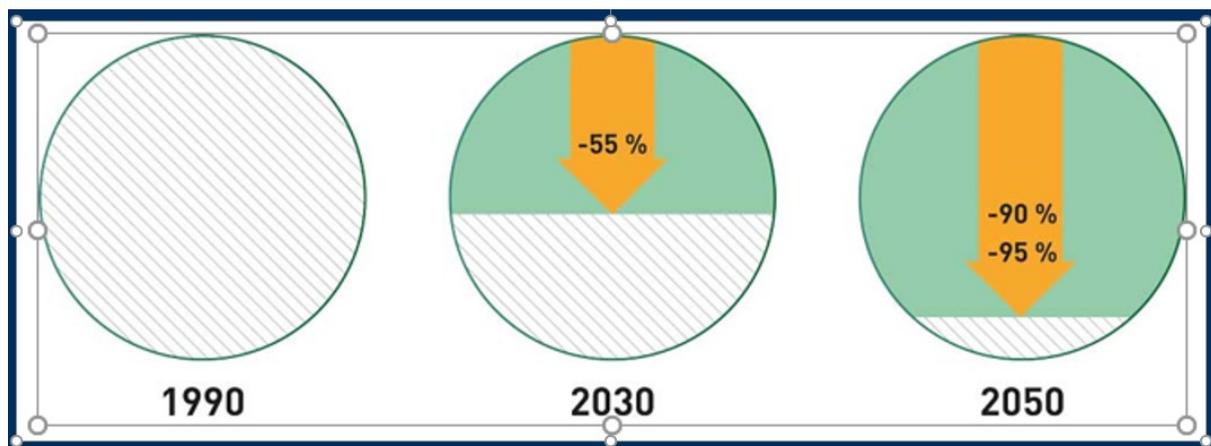
The success of the transformation to a low-emission society process will be vital to the competitive position of the Norwegian economy.

Norway's updated NDC is to reduce emissions by at least 55 per cent by 2030, compared to 1990 levels by 2030. Norway's intention is to fulfil this target jointly with the EU. Through the agreement

on climate action, Norway has already undertaken to cooperate with the EU to reduce emissions by at least 40 % by 2030 compared with the 1990 level.

Targets specifically for non-ETS emissions. Under the terms of the climate agreement with the EU, Norway is to cut emissions from transport, buildings, agriculture and waste (non-ETS emissions) by 40 % by 2030 compared with the 2005 level. This target can be achieved through national cuts in emissions and/or by using flexibility mechanisms. The EU is strengthening its climate policies (Fit for 55) and this will entail new national targets for the non-ETS sectors. If Norway updates the climate agreement with the EU, Norway could get a target for the non-ETS emissions of 50 % reduction in 2030 compared with the 2005 level.

The figure below illustrates Norway's climate targets for 2030 and 2050.



Figur 1.1

Figur 1.2 Norway's climate targets for 2030 and 2050 (reductions relative to 1990)

As an interim goal on the road to net zero emissions and the low-emission society in 2050, the government has set a transition target for the entire economy in 2030. This is formulated in the government platform (Hurdal) as a target to cut Norwegian emissions by 55 per cent compared to 1990. This means that the government has a national target to transition both the EU-ETS and non-ETS sectors. The purpose is for the entire Norwegian economy to transition in the direction of a low-emission society.

The transition target will be achieved through an ambitious and responsible climate policy, and we are dependent on both Norwegian and international technological development to be able to achieve it. Which specific measures are to be implemented will be assessed on an ongoing basis based on what is appropriate in the long term transition perspective, and is assessed in consultation with the business community. The aim is to promote a sensible long-term transition for the entire economy and promote the technological development on which we depend. Emphasis must be placed on Norwegian business and industry being competitive in the future, and that it is assumed that Norway will still have a surplus in the electric power balance. The goal must not entail an ineffective climate policy or disproportionately expensive measures.

Many technology projects can have a long and unpredictable lead time, but provide significant emission reductions in the long term. In the case of large point sources, for example, it will be

possible to get significant contributions to Norwegian emission reductions as old technology is replaced with new. This means that one cannot expect a linear reduction in emissions. Electrification of fossil energy use and new power-intensive industries require sufficient power generation and grid capacity. Electrification projects on the continental shelf will be assessed on a case-by-case basis, and must take into account the consequences for the power system and access to affordable renewable power for other industries and households.



Building Block #4: Implementation Pathways

Policy instruments

Norway's climate targets will be achieved by different measures, and one of the most central ones is the gradual increase of the CO₂ tax to about 2000 NOK per ton by 2030. The CO₂ tax was increased from 2021 to 2022. The tax on emissions from the oil and gas industry also applies to methane emissions on the continental shelf.

Norway was one of the first countries in the world to introduce a carbon tax, in 1991. Under the EEA Agreement, Norwegian companies have been included in the EU Emissions Trading System since 2008.

Today, climate-related taxes combined with emissions trading are proving effective in cutting greenhouse gas emissions across sectors. These two policy instruments apply to more than 80 % of greenhouse gas emissions in Norway.

Sector Specific National Strategies and Regulatory Instruments

Oil and gas

Specific national strategies

In an effort to develop national RD&D (Research, Design and Development) strategies for the petroleum and the energy sector, the Ministry of Petroleum and Energy launched the OG21 (Oil and Gas in the 21st century) strategy in 2001 and the Energi21 strategy in 2008. The OG21 is updated every 5 years and advise on prioritised technologies that are crucial to the further development of petroleum activities.

Existing regulatory instruments

Emissions to air from the Norwegian oil and gas sector are regulated through several acts; the Pollution Control Act and The Greenhouse Gas Emission Trading Act, The Petroleum Act and the CO₂ Tax Act (on the Norwegian Continental Shelf).

CO₂ tax and greenhouse gas emission trading

A CO₂ tax regime was introduced on the Norwegian Continental Shelf (NCS) in 1991. Today, the tax regime includes combustion of natural gas, oil and diesel in petroleum operations and on releases of CO₂ and natural gas (i.e. venting). The CO₂ tax has incentivized continued improvements in technology and implementation of emission-reducing measures, e.g. flare gas recovery ("closed flare system") and replacement of gas turbines with electricity from the onshore power grid.

For 2022, the tax rate for combustion of natural gas is equivalent to NOK 705 per tonne of CO₂. For emissions of natural gas to the atmosphere (of which the majority is methane), the tax rate is NOK 766 per tonne of CO₂.

Permits and other requirements

Requirements for impact assessments and approval of plans for new developments (PDOs/ PIOs) are cornerstones of the petroleum legislation. Facilities onshore and within the baseline are also subject to the provisions of the Planning and Building Act.

For new field developments or large-scale modifications of existing facilities, the operators must as part of the PDO include an assessment of the costs of using power from shore rather than gas turbines to supply electricity. Several fields on the Norwegian Continental Shelf are using or have decided to use power from shore. Flaring of natural gas on the Norwegian Continental Shelf is only permitted when necessary for safety reasons (The Petroleum Act). Permits for flaring are issued by the Ministry of Petroleum and Energy.

Pursuant to the Pollution Control Act, a number of sector specific requirements have been issued, in facility-specific permits and regulations. Emission limit values are set on a case to case basis in facility-specific permits, based on best available techniques (BAT) as defined nationally or in the EU. This includes emission limit values on methane (venting and fugitive emissions). Permits are issued by the Norwegian Environmental Agency.

BAT is defined in the EU Directive 2010/75/EU on industrial emissions, Article 1 and Annex I and III. For upstream oil and gas industry a BAT guidance document on upstream hydrocarbon exploration and production was issued by EU in April 2019.

Solid waste

Specific national strategies

The main goal of the Norwegian waste policy is that waste is to cause the least possible harm to humans and the environment. Further, the growth in the quantity of waste generated is to be considerably lower than the rate of economic growth, and the resources found in waste are to be reutilised by means of waste recovery. Furthermore, the amount of hazardous waste is to be reduced and hazardous waste is to be dealt with in an appropriate way.

The strategy, *Norway's strategy for developing a green, circular economy (2021)*, and the white paper on waste in a circular economy, Meld. St. 45 (2016-2017), are the most relevant national strategic papers on waste policy. Most of the Norwegian waste regulations are in line with or based on EU initiatives.

Food waste reduction is relevant for this report as it leads to reduced demand of, and therefore reduced methane emissions from agricultural production. In June 2017 an agreement with the national authorities and food industry to reduce food waste, was signed. The goal is to halve the food waste within 2030 in line with the Sustainable Development Goals (SDG). An important part of the ongoing agreement is mapping of food waste across the food value chain, and a status report (in

Norwegian) presenting numbers for 2020 have been published that shows 9,5 % reduction of edible food waste from 2015.⁴

Existing regulatory instruments

The measures to reduce greenhouse gas emissions from solid waste are to a large extent concurrent with measures to increase recycling and recovery. In the context of this report, the most relevant measures are:

Regulations under the Pollution Control Act, including prohibition against depositing biodegradable waste and requirements regarding extraction of landfill gas;

Prohibition of depositing wet organic waste

From 2002, landfilling of wet-organic waste was prohibited. This prohibition was replaced by the wider prohibition of depositing from 2009 that applies to all biodegradable waste. Methane production from landfills continues for several decades after the waste is deposited. Therefore, emissions will continue for many years, but the prohibition of depositing waste has reduced methane emissions over time, and will continue to, as the amount of biodegradable waste is reduced.

Requirement to collect landfill gas

The EU Landfill Directive (1991/31/EC) was incorporated into national law by the Norwegian Landfill Regulations of 21 March 2002, and states that all landfills with biodegradable waste must have a system for extracting landfill gas. The gas emissions are monitored by measuring boxes placed on the landfill surface. Also, visual inspection of the landfill surface for obvious leaks should be conducted regularly.

Agriculture and animal husbandry

Specific national strategies

Under the terms of the climate agreement with the EU, Norway is to cut emissions from transport, buildings, agriculture and waste (non-ETS emissions) by 40 % by 2030 compared with the 2005 level. Under the agreement, Norway has been assigned binding annual emission allocations for non-ETS emissions, which translate into an emission budget for the years 2021–2030.

The agricultural sector is the largest source of methane emissions in Norway, with key emission sources coming from livestock and manure. While abatement of such emissions is considered important, it is difficult to decouple the volumes of emissions from the volumes of production. Nevertheless, emissions from livestock have been slightly reduced over the last decades, due to successes with animal breeding, welfare and feeding which have enabled increases in overall production, i.e. output per animal has been increased. Budgetary allocations for different R&D programs to increase the productivity in plant production and improve the performances of animal husbandry, will contribute to further reduction in emissions per unit of product. There is ongoing investigation into livestock feeding strategies that may decouple production from emissions while allowing for continued or increased use of domestic feed resources. A specific budgetary allocation is

⁴ <https://www.regjeringen.no/no/dokumenter/bransjeavtalen-om-reduksjon-av-matsvinn-hovedrapport-2020/id2891243/>

made to a project run by the Norwegian cattle breeding organization (Geno) to research the potential for reducing methane emissions from milk cows by selective breeding. There are also allocations to the provision of advisory services to farmers and for developing tools for decision support on farm level, which aims to more climate smart farming practices.

In June 2019, the former Government signed an agreement with the national farmer's organisations which intends to reduce emissions and increase CO₂ uptake from agriculture. The goal is to reduce emissions by five million tons of CO₂-equivalents in total for the 10-year period 2021-2030. An inventory committee has been established for measuring, verifying and tracking progress towards the fulfilment of the agreement, hence also supporting Building Block 5.

The most relevant measures include improvements in livestock productions, handling of manure and mineral fertilizer, energy use and biogas production. Another part of the agreement includes shifts in food consumption that may lead to a corresponding shift in production and emission volumes from agriculture, i.e. reduction of food-waste and changes in dietary choices in line with dietary advice from the Directorate of Health. Sustainable food consumption and preservation of carbon sinks are also focal areas for Nordic co-operation under the Nordic Council of Ministers.

Existing regulatory instruments

Direct emissions from Norwegian agriculture are covered neither by the emissions trading system, nor subject to greenhouse gas taxation. Current policies and practices to control GHG emissions in agriculture include a combination of regulatory, economic and informatory measures, as specified below. Such policies are developed in close cooperation with stakeholders in the agricultural sector and food systems. Norwegian agricultural policy is developed on the basis of cooperation between the central government and the agricultural industry to achieve politically determined objectives. Policy instruments for achieving these objectives are set out in the annual Agricultural Agreement. This makes the negotiating process and the annual agreements the most important mechanism for designing and implementing policy instruments in the agricultural sector.

The *regulation concerning fertilizer etc. of organic origin* restricts where, when and how much manure and other organic fertilizer can be applied, in order to reduce emissions from manure. The regulation requires, *inter alia*, that farmers must have at least eight months storage capacity, to enable appropriate temporal distribution of manure. The regulation is under revision in order to better meet emissions targets for water and air.

Keeping livestock on pasture may help abate emissions from manure management compared to keeping animals in confinement. Naturally, most livestock in Norway must be kept indoors for part of the year during winter months. There are however requirements that cattle, sheep and goats should be free-range for minimum periods in summer, and additional support is paid for those who are kept outdoors for longer. Such practices reduce emissions from storage of manure.

Agricultural policies also include various agri-environmental support schemes. Few measures are directed primarily to abate greenhouse gas emissions, but several of the supported measures may have co-benefits for greenhouse gas emissions along with other emissions to air and water. Examples include support for environmentally friendly spreading of manure which was established in 2008 and was scaled up to a country-wide scheme from 2018. Another example is a support scheme for covers for manure storage facilities

A support scheme which encourages the delivery of manure to biogas plants was established in 2015. There is also investment support for construction of biogas plants. A 2020 report from a working group lead by the Norwegian Agricultural Agency considered different policy measures on how to increase the amounts of manure treated in biogas plants.⁵

In order to preserve carbon sinks, the Norwegian Government has adopted restrictions on cultivation of bog areas for agricultural purposes.



Building Block #5: MRV

In June 2017, the Norwegian Parliament adopted the Climate Change Act, which establishes by law Norway's emission reduction targets for 2030 and 2050. The purpose of the act is to promote the long-term transformation of Norway in a climate-friendly direction. The act will have an overarching function in addition to existing environmental legislation. The Climate Change Act introduces a system of five-year reviews of Norway's climate targets, on the same principle as the Paris Agreement. In addition, the act introduces an annual reporting mechanism. The Government shall each year submit to the Parliament updated information on status and progress in achieving the climate targets under the law, and how Norway prepares for and adapts to climate change. Information on the expected effects of the proposed budget on greenhouse gas emissions and projections of emissions and removals are also compulsory elements of the annual reporting mechanism.

This year, a "Government's Climate Status and Plan"⁶, was submitted to Parliament as part of the National Budget for 2023. Climate Status and Plan both reports on the requirements under the Climate Change Act and establishes the Government's Plan to achieve its climate targets.

The Government's Climate Status and Plan establishes a climate governance system to develop, monitor and report on climate policies, on a yearly basis. The purpose is that climate change considerations are taken into account on a predictable and systematic manner in relevant policy decision-making processes, providing information on progress in achieving climate targets; and identifying needs for strengthened efforts.

One central policy decision-making process is the process of preparing the national budget. In order to integrate climate change considerations into the annual national budget, the current Government has started to develop a new climate governance tool – a climate budget. The climate budget milestones are linked to those of the national budget. Assessments of the effects on greenhouse gas emissions from different policies and measures are crucial in this work. As part of the national budget preparations, policy makers are updated on progress towards achieving the climate targets, and what policies and measures could contribute to closing possible gaps to achieving the targets. The Government's annual Climate Status and Plan summarises progress towards the target based on already established policies, policies under development and shows the additional potential for emission reductions.

⁵ <https://www.regjeringen.no/contentassets/6a5da53b1ba243eb86a4e2314abe96a4/husdyrgjodsel-til-biogass---gjennomgang-av-virkemidler-for-okt-utnyttelse-av-husdyrgjodsel-til-biogassproduksjon.pdf>

⁶ [Regjeringas klimastatus og -plan \(regjeringen.no\)](https://www.regjeringen.no/contentassets/6a5da53b1ba243eb86a4e2314abe96a4/regjeringas-klimastatus-og-plan.pdf)