



NORWEGIAN MINISTRY OF
THE ENVIRONMENT

Report No. 21 (2011–2012) to the Storting (white paper) Summary

Norwegian Climate Policy



Norwegian Climate Policy

Report No. 21 (2011–2012) to the Storting (white paper) Summary

*Recommendation from the Ministry of the Environment, 25 April 2012,
approved by the Cabinet on the same date
(Stoltenberg II Government)*

1 A global problem

1.1 Introduction

Climate change, along with combatting hunger and poverty, is among the greatest challenges facing the world today. The developed countries carry a particular responsibility for having brought the current concentration of CO₂ in the atmosphere up to nearly 40 per cent above the pre-industrial level. The OECD's most recent analysis shows that annual global greenhouse gas emissions will increase by around 50 percent by 2050 if new measures are not implemented. Most of the growth in emissions is expected to come in emerging economies and developing countries. These countries already account for 60 per cent of the total global emissions.

The goal of the global efforts through the United Nations Framework Convention on Climate Change (UNFCCC) is to stabilise the concentration of greenhouse gases at a level that would prevent dangerous anthropogenic interference with the earth's climate system. The Government's primary goal is to contribute to ensuring that the climate negotiations under the direction of the UN lead to a broad-based climate agreement that safeguards development in line with the two-degree target. According to the United Nations Intergovernmental Panel on Climate Change (IPCC), this means that total global greenhouse gas emissions must be reduced by 50–85 per cent by 2050, compared with the level in 2000. This will only be possi-

ble if emissions are reduced both in developed countries, emerging economies and developing countries. For every year that passes without reversing the emission trend, and without additional measures to increase carbon removals, it will be increasingly difficult and more costly to avoid the most serious consequences of climate change.

Following the climate change conference in Durban, South Africa in 2011, it appears that the international agreement will be composed of two elements towards 2020. One of these is a second commitment period under the Kyoto Protocol, which will be formalised at the conference in Qatar in 2012 and will set binding commitments for emission reductions for a group of developed countries. The second element is a political agreement, the Cancún Agreement, on emission reductions and climate measures for the countries that are not part of the Kyoto Protocol. From 2020 onward, a broad new climate agreement that has a legally binding character and includes all parties is to be established. This agreement will be negotiated in the period up to the end of 2015, with the objective of implementing the agreement in 2020. In addition, a group of countries agreed to negotiate the terms of a second commitment period under the Kyoto Protocol.

The Government wants Norway to be a driving force in achieving an ambitious agreement with binding commitments for all countries. If the world is to succeed in reducing emissions in line with the two-degree target, an international price on carbon emissions must be established. This

means that we need extensive and effective carbon markets in the years to come. A price must be set on as much of the global CO₂ emissions as possible. Carbon pricing will be our most important policy instrument in the fight against global climate change. Therefore, the Government will continue its work to promote further development of international carbon markets.

In accordance with Norway's stance in the international climate negotiations and the key role played by forests in carbon removals and as a carbon sink in Norway, the Government will pursue an active and sustainable forestry policy which increases carbon removals in forests, also in the long term. An active, sustainable forestry policy will support the overall climate policy, both nationally and internationally. The forest resources are also an important source of renewable energy and for production of wood materials replacing less climate-friendly materials. The role of forests as a renewable resource will be reinforced through research, and long-term sustainable management.

Norway's long-standing prioritisation of climate policy and our concerted efforts at home and abroad give us credibility in international climate work. This should contribute to creating international consensus on an ambitious climate agreement.

Norway pursues an active domestic climate policy, and we employ a broad set of policy instruments to reduce domestic emissions. Our long-term goal is transformation towards a low-emission society. The Government will strengthen the use of domestic measures to achieve this goal.

In this White Paper, the Government announces its intentions to, among other things, create a new climate technology fund, make the petroleum sector pay a higher price for greenhouse gas emissions, pursue an active forestry policy, prioritise public transport and implement stricter emission requirements for new cars.

The Government believes that a proactive domestic policy on climate change must be designed to also support industries and business. The climate policy should contribute to develop and transform our industry and commerce in a climate-friendly direction. Technological development is a crucial element. It takes time to develop and implement new, climate-friendly solutions. This means the work we do now will be important, also beyond 2020.

The (Norwegian) Planning and Building Act gives a distinct role to the municipal sector in facing the challenge of climate change. The municipalities must use this latitude to initiate and

implement local measures to mitigate climate change

An ambitious domestic policy must also make sense in a global context. This requires us to take into consideration factors such as the consequences of the EU emissions trading system, the risk of carbon leakage, and the competitiveness of our industries when shaping this policy.

This provides guidance for the use of policy instruments to reduce domestic emissions going forward to both 2020 and 2050.

1.2 Objectives and principles in Norwegian climate policy

Sustainability should be a fundamental principle for all development in Norway, and around the world. The Government's strategy on sustainable development, presented in the National Budget for 2008 (Report No. 1 (2007–2008) to the Storting), confirms that a policy for sustainable development must be based on the principles of equitable distribution, international solidarity, the precautionary principle, the polluter pays principle, and the principle of a common commitment.

Key principles are also taken from the (Norwegian) Nature Diversity Act and the Pollution Control Act. A central premise in both statutes is that decisions should build on environmentally friendly technologies and methods. The precautionary principle shall apply if sufficient knowledge is lacking.

The objectives and principles in Norwegian climate policy are anchored in the broad political agreement in the Storting (Norwegian parliament) from 2008, cf. Recommendation No. 145 (2007–2008) to the Storting. This climate agreement also includes measures and check points for following up the climate policy. Among other things, the agreement refers to the sector-specific climate action plans and the targets for individual sectors.

The polluter pays principle is a cornerstone in the policy framework on climate change. The policy should be designed to yield the greatest possible emission reductions relative to effort, and should result in emission reductions both in Norway and abroad. General policy instruments are a key part of the domestic climate policy. Cross-sectoral economic policy instruments (i.e. CO₂-tax) form the basis for decentralised, cost-effective and informed actions, where the polluter pays. In areas that are subject to general policy instruments, additional regulation should be avoided. At the same time, the possibility of employing other policy instruments in addition to emission trading

and taxes must be continued, also in these sectors. The Government will particularly focus on measures that are cost-effective in light of expectations of rising carbon prices over the lifetime of the investments, and which are not necessarily triggered by current policy instruments. This applies particularly to measures that contribute to technology development and to measures that mobilise the population to earlier changes in consumer patterns that yield lower emissions.

In line with the broad political climate agreement, Norwegian climate policy is designed to achieve the following objectives:

- Norway will fulfil and exceed the Kyoto commitment within the first Kyoto Protocol commitment period by 10 percentage points.
- In the period up to 2020, Norway will commit to cutting global emissions of greenhouse gases equivalent to 30 per cent of Norway's emissions in 1990.
- Norway will be carbon-neutral in 2050.
- As part of an ambitious global climate agreement where other developed nations also take on ambitious commitments, Norway will adopt a binding goal of carbon neutrality no later than in 2030. This means that Norway will commit to achieving emission reductions abroad equivalent to Norwegian emissions in 2030.

Furthermore, the Government's political platform, *Soria Moria II*, calls for the Government to strengthen Norway's climate goals equivalent to a 40 per cent cut in emissions by 2020 compared to the level in 1990, if this can contribute to consensus on an ambitious climate agreement where the countries with the largest emissions agree to specific emission commitments. It also states the Government's long-term goal of ensuring that each individual should have equal right to emit greenhouse gases.

1.3 Domestic emission reductions

The challenge of climate change can only be solved through broad international cooperation. Nevertheless, most of the concrete policy is determined at a national level. There is considerable uncertainty attached to the question of when the world will be able to put a sufficiently ambitious, broad-based and legally binding climate agreement in place. Each individual country is responsible for pursuing an active domestic policy aimed at reducing greenhouse gas emissions. There has been broad political agreement in Norway that we must assume such a responsibility. Therefore, Norway

has for many years been among the countries using the strongest climate policy instruments. We have set ambitious goals for reducing domestic emissions and transforming Norway towards a low-emission society going forward to 2050.

Based on the Norwegian Pollution Control Authority's (now the Climate and Pollution Agency) analysis of measures, the sector-by-sector climate action plans as well as current policy instruments, the previous White Paper on Climate policy from 2007 proposed that a realistic goal would be to reduce emissions in Norway by 13–16 million tonnes of CO₂ equivalents relative to the reference scenario presented in the National Budget for 2007, when CO₂ uptake by forests is included. If realized, this would entail that around half to two-thirds of Norway's total emission reductions would be accomplished domestically. The Storting's consideration of the White Paper on Climate Change entailed a further strengthening of measures through the broad political agreement. Based on a discretionary assessment, it was assumed that the new measures in this agreement would make it realistic to assume additional emission reductions in Norway, and that the interval for emission reductions could be increased to 15–17 million tonnes of CO₂ equivalents compared to the reference scenario as presented in the National Budget for 2007, when CO₂ uptake by forests is included. If realised, this entails that about two-thirds of Norway's total emission reductions would be accomplished at the domestic level, cf. Recommendation to the Storting No. 145 (2007–2008).

The broad political agreement in 2008 also contained a number of concrete measures that the parties agreed on, cf. Recommendation to the Storting No. 145 (2007–2008). The Government's implementation of these measures is addressed in the sector chapters in this report.

Norway pursues an active policy to reduce emissions; policies which has yielded good results. On a somewhat uncertain basis, annual Norwegian emissions in 2010 are estimated to be in the range of 11–14 million tonnes lower than what would have been the case without our domestic policies. This is also expressed by the fact that emissions per unit produced (carbon intensity) in the Norwegian economy has fallen by around 36 per cent in the last 20 years, including the petroleum sector. The emission intensity in the mainland economy (excluding petroleum) has been cut nearly by half in the same period of time.

Measures to curb emissions implemented since 2007 is estimated to reduce annual emissions in Norway by up to 5 million tonnes in 2020.

The Government is also contributing to emission reductions in developing countries and emerging economies, partly by purchasing emission allowances through the Clean Development Mechanism (CDM).

Norway is a part of the European Emissions Trading System (EU-ETS). Following the expansion of the system in 2013, about 80 per cent of the domestic emissions will be subject to mandatory allowances or a CO₂ tax. Under the European Emissions Trading System, total emissions are initially given in the commitment period up to 2020. In a well-functioning cap and trade system, emission reductions in one activity will lead to a comparable increase in emissions elsewhere in the trading scheme. The overall emissions in the trading scheme can only be reduced by cutting the total volume of emissions allowances, i.e. reducing the cap. The total number of allowances in the European cap and trade system will be reduced every year by a fixed number of allowances equivalent to 1.74 per cent of the estimated number of allowances for 2010. The estimated number of allowances for 2010 will include figures for all sectors that will be subject to the cap and trade system from 2013. From 2005 to 2020, this means that overall emissions in the system will be reduced by 21 per cent. The EU's cap and trade system cannot, on its own, suffice to ensure that the countries covered by the system will achieve their climate goals. However, EU regulations allow for a further reduction of the total number of allowances.

Our link to the EU's cap and trade system for the 2013–2020 period entails curbing total emissions from Norway and the EU by about 11 million tonnes of CO₂ in 2020.

As a main rule, areas subject to general policy instruments, such as the cap and trade system, will be exempted from additional regulation. At the same time, the opportunity to employ additional policy instruments will be retained. For example, development of new technology in Norway can contribute to reducing emissions outside the system and promote more rapid transition to the use of more climate-friendly technologies.

1.4 Changes in external conditions – new challenges

Since the last White Paper on climate policy was submitted in 2007 and the broad political consensus was achieved in 2008, international carbon prices have fallen and the costs of reducing emissions in Norway have been adjusted significantly

upwards. A broad assessment of domestic mitigation measures (Klimakur2020) estimated that the marginal costs associated with reducing domestic emissions by 12 million tonnes of CO₂ equivalents could be in the interval 1100–1500 NOK per tonne CO₂, given that all economic sectors are subject to the same price. If companies in the sectors covered by the emission trading scheme are exempted, calculations show that the remaining sectors in the Norwegian economy must be subject to a price of NOK 3400 per tonne CO₂. A more detailed account of the costs associated with climate measures is provided in the National Budget for 2011. Here the Government estimates that the overall economic costs in 2020 will be higher than indicated by Klimakur2020, in part as a consequence of transition costs.

Moreover, strong labour immigration has contributed to significantly higher economic growth in Norway than was assumed in the White Paper on climate policy from 2007. According to Statistics Norway's latest population projections (mean projection), the population in 2020 is expected to be 500 000 above the reference scenario in the White Paper on climate policy. The National Budget for 2011 estimated that the GDP in the mainland economy would be 10 per cent higher in 2020 than in the National Budget for 2007, which formed the basis for the 2007 White Paper on climate policy. Viewed in isolation, a larger population and higher GDP both contribute to increased greenhouse gas emissions. Emissions have increased from 49.8 million tonnes of CO₂ equivalents in 1990 to 53.9 million tonnes of CO₂ in 2010. With a continuation of current policies, emissions are expected to reach 56.9 million tonnes of CO₂ by 2020. Nevertheless, estimated emissions in the mainland economy per capita in 2020 will have been reduced by about 17 per cent compared with the estimates in the White Paper on climate policy from 2007. This demonstrates that our domestic climate policy is having an impact.

New estimates indicate that emissions from the Norwegian petroleum activity in 2020 will be about 3 million tonnes higher than was assumed in the previous White Paper on climate policy. However, emissions per produced unit are lower on the Norwegian continental shelf than in most other oil and gas provinces in the world.

Less progress in development of climate-friendly technology, higher costs associated with domestic climate measures, higher immigration and economic growth and larger emissions from the oil sector will partly determine when our climate goals are reached. Nevertheless, these fac-

tors do not change the need to reduce domestic emissions.

1.5 A national strategy for lower emissions

The objectives as laid down in the broad political agreement from 2008 stand firm. The Government proposes to reinforce the domestic policy framework to address climate change. Our policy on climate change should be among the most ambitious in the world. Our objective is for Norway to become a low-emission society towards the end of this century. This entails a change which will include producing more renewable energy, phasing it into areas which currently use fossil energy, and using energy more efficiently. We will develop new, climate-friendly technology at home, and employ technology developed in other countries. This kind of adjustment means that we must be prepared to implement domestic measures that are more expensive than measures implemented abroad. This also means that we should prioritise measures that may not yield a significant impact over the short and medium terms, but that will be necessary if we are to achieve such a goal by 2050.

The measures proposed in this report entail a stronger commitment in several areas. We cannot estimate the effect of this commitment in 2020 with certainty. For example, there is too much uncertainty associated with where increased commitment to research and technological development will yield actual emission reductions, and how strong the effects will be in different sectors.

1.6 Stronger policy instruments for the petroleum sector and stronger incentives for providing electric power from shore

In 2010, emissions from production of oil and gas accounted for 26 per cent of Norway's greenhouse gas emissions. The petroleum sector is subject to strong economic policy instruments through both taxes and allowances. Today, nearly 40 per cent of Norwegian gas production comes from fields that run on electric power from shore.

The Government's goal is to increase the offshore supply of electric power from the mainland. This presupposes, at the same time, that development of sufficient new power supply is ensured, or that an adequate new grid is put in place to prevent regional market imbalances. At the same time, biological diversity and consideration for the costs of these measures must be safeguarded.

When there are new minor petroleum discoveries in the same area, substantial gains may be achieved through coordinated development. Coordinated development can also make use of electric power from shore a more realistic alternative than if the discoveries are developed individually. With this point of departure, the Government's goal is for the southern part of the Utsir-ahøyden to be supplied with electric power from shore. The Government will make a final decision on this, in part based on the ongoing analyses from the licensees.

The Government's goal is to increase the use of electric power from shore in connection with major new developments by:

- Increasing the CO₂ tax by NOK 200 per tonne of CO₂ for the petroleum activity. Based on the current price of allowances in the EU ETS, this yields an overall carbon price in the petroleum sector today which the Government believes is reasonable. If the price of allowances in the EU ETS increases over time, it provides a basis for reducing the CO₂ tax so that the overall carbon price remains at about the same level.
- Prepare a major analysis of, and strategy for, the use of electric power from shore as the energy solution in connection with coordinated development of fields with geographic proximity.
- Require that the companies inform the Norwegian Petroleum Directorate (NPD) about the alternatives being considered before a development concept is chosen. This is to ensure that the chosen concept does not make electric power from shore more expensive, or in any other way reduces the likelihood of a concept involving electric power from shore.
- Require that the companies always consider electric power from shore as an energy solution for new fields and in connection with major modifications of existing fields, including considering relevant lifetime. The NPD will ensure that consideration is given to whether a coordinated development of discoveries in the same area that are ready for development can make electric power from shore more realistic than if the discoveries are developed individually.
- Follow up to ensure that the operator of new field developments in the petroleum sector applies for connection to the grid at an early point in time, in cases where electric power from shore is relevant.
- Ask Statnett (the national grid company) to facilitate future power consumption, including

major and specific increases in petroleum sector power consumption, if this is economically profitable.

- Follow up ongoing studies with the objective of supplying the southern part of the Utsir-ahøyden with power from shore.

The Government assumes that these measures will contribute to increase the use of electric power from shore in connection with new developments on the Norwegian shelf. The Government will make decisions on the issue of electric power from shore in connection with the formal processing of the respective developments.

1.7 A climate and energy fund for development of technology and industrial transformation

In 2010, emissions of greenhouse gases from industry accounted for about 23 per cent of Norway's total greenhouse gas emissions.

If the world is to succeed in reducing global greenhouse gas emissions in the next few decades, the development of new technological solutions is essential. Most of the technological development takes place in, and is funded by, private business and industry. The most important driver for development of climate technologies is a price on greenhouse gas emissions. When emissions carry a price tag, it becomes more profitable to cut emissions and to develop new, climate-friendly technology. Even more sources of greenhouse gas emissions will be subject to the CO₂ tax and the EU emission trading scheme starting from 2013. The Government also intends to increase the CO₂ tax on the continental shelf.

Norway is a small country with a relatively narrow industrial base. We are thus largely dependent on international development of technology to reduce domestic greenhouse gas emissions.

Technology developed abroad (for example low emission automobiles) can make a substantial contribution to reducing emissions in Norway, in the same way that technology developed in Norway (e.g. the carbon capture facility at Mongstad) can help reduce emissions in other countries. This underlines the mutual dependence between domestic and international efforts.

The Government proposes a national initiative to develop technologies that can mitigate climate change. The objective of this commitment is to reduce greenhouse gas emissions and provide lasting energy savings in industry through devel-

oping and using technologies that can contribute to this goal.

The technology initiative will be managed by Enova. Enova will implement this commitment in close cooperation with business and industry, research communities, the Climate and Pollution Agency and other relevant public bodies. These efforts must be based on expertise on both climate and technology.

Enova may provide support for investments in full-scale production lines. The cooperation must be formalised in agreements with clearly defined goals for development and use of technology that yields emission reductions.

This technology initiative will be financed through a new fund for climate mitigation measures, renewable energy and energy conversion, as well as from portions of the funds that are made available as a consequence of the introduction of green certificates. The Fund for mitigation measures, renewable energy and energy conversion will be established based on Enova's Basic Fund, and composed of two parts; one which ensures Enova's existing tasks, and one that ensures the new climate technology commitment. The return from a fund level that exceeds the current level of NOK 25 billion will be used to finance the climate technology commitment. The new fund will be increased with NOK 5 billion in 2013, bringing the total capital to NOK 30 billion. Within 2020, the Government will gradually increase the fund's capital up to NOK 50 billion.

Enova's other tasks will also be reinforced in the years to come. This relates e.g. to efforts to support the transition from fossil-based energy consumption to renewable energy, and the commitment to increase energy efficiency. Among other things, Enova may facilitate environmentally friendly energy conversion in households. The efforts devoted to these tasks will be financed by allowing Enova to retain some of the funds that are made available through the introduction of the green certificates market.

The Government will:

- Implement a climate and technology initiative financed through the return from a new fund for climate measures, renewable energy and energy conversion, and parts of the funds that are made available as a consequence of the introduction of green certificates. Among other things, Enova may support full-scale production lines.
- The new fund will be increased with NOK 5 billion in 2013, bringing its total capital to NOK 30

billion. By 2020, the Government will gradually increase the capital in the fund up to NOK 50 billion.

- The technology initiative shall be based on expertise on climate and technology.
- Reinforce Enova's other tasks, such as the efforts aimed at transition from fossil-based energy consumption to renewable energy and energy efficiency measures, e.g. through facilitating environmentally-friendly energy conversion in households.
- Adapt Enova's performance indicators so that Enova is also monitored on technology development that yields emission reductions.
- Continue the practice where all new licences on gas fired power plants require CO₂ capture and storage from start-up.

1.8 A climate-friendly building sector

In 2010, emissions from heating and other energy consumption in the building sector, along with emissions from production of district heating, constituted 5 per cent of Norway's total greenhouse gas emissions. The building code was substantially tightened in a revision in 2007, both in terms of requirements for energy efficiency and energy supply in buildings. In 2010 the energy supply requirements for buildings larger than 500 m² were tightened, and the efficiency requirements were also adjusted somewhat. A ban on installing oil boilers for fossil fuel as base load was also introduced. Emissions in the building sector arise from the use of fuel oil and other petroleum products to generate heat. Emissions from district heat production arise from the combustion of waste, oil and gas.

The emissions from buildings and district heat production vary from one year to another. Emissions from buildings have been reduced by about 30 per cent since 1990 as a consequence of the phasing out of fossil fuel for heating, while the emissions from district heating have increased. The Government will continue to work for energy conversion and increased energy efficiency in the building sector.

The Government wants to increase the pace of Enova's work to phase out the use of oil heating also in smaller facilities. Special efforts will be made in the areas of energy efficiency and the phasing out of fossil fuels.

In this respect, the Government presents an energy efficiency action plan, with the objective of significantly reducing total energy consumption in the building sector by 2020.

The Government will:

- Tighten the energy requirements in the building code to passive house level in 2015 and nearly zero energy level in 2020. The Government will later on stipulate provisions to define the passive house level and the nearly zero energy level. The decision on the level of these requirements will be made on the basis of studies of economic and health-related consequences, as well as the expertise in the building sector.
- Introduce component requirements for existing buildings and clarify which types of building work and which components these requirements will apply to, based on i.a. an evaluation of energy effects and costs.
- Phase out the use of oil boilers for fossil fuel in households and for base loads towards 2020. This could be made possible i.a. through Enova which can grant subsidies to households.
- Aim to expand the ban on installing boilers for fossil fuel for base loads so that it encompasses all existing buildings.
- Ensure that as a builder and property owner public government is a driving force in the work for energy conversion and phasing out the use of fossil fuels in buildings.

1.9 A more climate-friendly transport sector – commitment to public transport

Emissions from the transport sector, which includes road transport, domestic shipping, fisheries and off-road mobile sources, accounted for 32 per cent of Norway's total greenhouse gas emissions in 2010. To reduce emissions from this sector, we must phase in new, environment-friendly vehicle technology, as well as making it easier to choose public transport, walking and bicycling. More goods must be transported by sea and rail, and we must start to use greener, more climate-friendly vehicle technology and fuels. The municipalities have a key task in reducing the need for transportation through coordinated environment, land use and transport planning, facilitating public transport and employing other policy instruments that influence transport and transportation choices.

The Government will:

- Adopt a goal of absorbing the growth in passenger transport in major urban areas through public transportation, bicycling and walking. In and around the major urban areas, public trans-

- port and bicycling initiatives shall be granted higher priority in the allocation of transport funding.
- Give public transport an important role in the White Paper on the National Transport Plan for 2014–2023 (NTP 2014-2023) and prepare an action plan on public transport as follow-up of the NTP.
 - Increase State subsidies for investment in, and operation of, municipal public transport and other environmentally-friendly forms of transport. This will be done through binding agreements for urban areas, for example as is the case with the existing reward schemes. The agreements must contain goals and instruments designed to increase the share of public transport, bicycling and walking, as well as measures aimed at reducing car use. It is a precondition that environmental goals are emphasized and achieved in such binding agreements.
 - Reinforce the role of the railways in the transport system. Increase investments in the railway system, particularly around the largest cities.
 - In connection with NTP 2014-2023, present a progress plan for development of the InterCity railway connection in central Eastern Norway, with a binding schedule for when various routes can be completed.
 - In NTP 2014-2023, present a comprehensive goods transport strategy, which includes promoting the transfer of goods transport from road to rail.
 - In NTP 2014–2023, present a bicycling strategy including increased financial allocations to walkways and bikeways, so that the annual appropriation at the end of the first part of the NTP period is double the current level.
 - Encourage the municipalities to develop a comprehensive parking policy, and allow them to require that parking fees must be imposed for parking areas that are not municipal property.
 - Establish Transnova as a permanent body and gradually increase the financial support to Transnova.
 - Develop routines for environmentally-friendly public procurement by updating and refining the Agency for Public Management and eGovernment's (Difi's) set of criteria with guidelines for greener procurement of vehicles (both purchase and leasing) and procurement of taxi services for the public sector.
 - Increase the mandatory sale of bio-fuels to five per cent, provided that the sustainability criteria are satisfactory. When experience has been gained with the sustainability criteria, the Government's goal will be to further increase the mandatory sale up to 10 per cent.
 - Contribute to the development of a value chain for second generation bio-fuels.
 - Continue the work for a more accurate road tax for heavy vehicles.
 - Adopt a target where the average emissions from new cars in 2020 will not exceed an average of 85 g CO₂/km, e.g. by:
 - Continuing to use vehicle taxes to contribute to conversion to a more environment- and climate-friendly vehicle fleet.
 - Consider gradual phase-in of requirements for environmental properties and CO₂ emissions for taxis authorized to use public transport lanes.
 - Contribute to development of infrastructure for electrification and alternative fuels, in part through Transnova.
 - Be a driving force in international efforts to standardise solutions and harmonise regulations for zero and low-emission automobiles.
 - Continue to be at the international forefront in facilitating use of electric and hydrogen cars.
 - Give plug-in hybrids access to parking with charging stations.
 - Establish better systems for monitoring and controlling traffic development in public transport lanes so that electric and hydrogen cars can be given maximum access without impeding public transport.
 - Develop a system for additional environmental information in connection with the sale of new cars, including information about fuel costs and tax disadvantages associated with high-emission vehicles, as well as reinforcing the control of environmental and energy labelling in the sale of new cars.
 - Strengthen the role of sea transport in the transport system. Increase the annual allocations for infrastructure investments in harbours and fairways.
 - Implement the International Maritime Organisation's (IMO's) requirements for energy efficiency also for ships exclusively used for domestic shipping.
 - Encourage the largest Norwegian harbours to introduce environmentally differentiated pricing on a voluntary basis.
 - Continue the processes to include aviation in a binding international climate regime.

1.10 Climate measures in agriculture and carbon removals in forests through active forest management

Deforestation and forest degradation account for 1/6 of annual global greenhouse gas emissions. Deforestation is the permanent reallocation of forest areas, and largely takes place in developing countries. According to the United Nation Intergovernmental Panel on Climate Change, reduction of emissions from deforestation and forest degradation is an important and appropriate initiative in the fight against global warming. At the same time, forests play an important role in the climate system in that the total land areas on the globe absorb 1/4 of the total CO₂ emissions. Therefore, Norway is working internationally for a new comprehensive set of forest regulations to include all emissions and removals in forests and other land areas. This entails that forest-related initiatives both at home and abroad will count, and thereby contribute to policies being consistent.

Forests cover about 30 per cent of the land area in Norway, and the forests removals are of a volume of CO₂ equivalent to about half of our total annual greenhouse gas emissions. The National Budget for 2012 estimates that the annual net removals of CO₂ in Norwegian forests is about 12 million tonnes higher in 2020 than in 1990.

In accordance with the Norwegian position in the international climate negotiations and the key role the forest carbon sinks play in Norway, the Government will pursue an active forest policy through measures that increase the forest carbon stock. The forest resources are also an important source of renewable energy, and for production of wood materials that can replace less environment-friendly materials. The forest's role as renewable resource is reinforced through research and long-term sustainable forest management.

The Government will:

- Increase the productive forest area through reduced deforestation and forest degradation and by pursuing an active, sustainable policy for planting in new areas. As a part of this, the Government will present a strategy for increased afforestation, while simultaneously developing environmental criteria for this effort. The municipalities should seek to reduce deforestation through land use planning.
- Maintain or increase the forest carbon stock through active, sustainable forest policies, e.g. by reinforcing efforts in forest plant breeding,

increasing plant density and reintroducing the ban on felling seedling forests, as well as reinforcing forest conservation.

- Study a system of voluntary climate measures and cooperation agreements with landowners for the establishment of climate forests.
- Improve incentives for the use of bio-energy derived from wood, with particular emphasis on forest residues so that e.g. measures with short CO₂ payback periods are prioritised.
- Contribute to increased forest carbon removals through targeted fertilisation of forests, while simultaneously developing environmental criteria for this effort.

In 2010, emissions from agriculture constituted about 10 per cent of Norway's total greenhouse gas emissions. Gas from manure was a substantial part of this.

The Government will:

- Contribute to the development of bio-gas in Norway, e.g. farm-based bio-gas facilities and large joint treatment facilities for manure and waste.
- Revise the regulations relating to cultivation to also reflect climate considerations, cf. Storting White Paper No. 9 (2011–2012).

1.11 Research and development

The climate challenges facing society are long-term in nature. Knowledge about how the concentration of greenhouse gases in the atmosphere can be curtailed, particularly research on emission-reducing technologies and practices, will play a decisive role. Climate research is international, while every country needs climate knowledge adapted to meet the climate challenge. Strong national research institutions also enable Norway to contribute to international climate research.

The Government will:

- Continue to step up climate research with special emphasis on framework conditions, policy instruments and technology for reduced greenhouse gas emissions.
- Contribute to the global initiative to strengthen the knowledge base in the climate work and to reinforce basic climate research.
- Based on experience with the current legislation and use of policy instruments, the Government will consider whether a separate climate statute is appropriate.

1.12 A stronger international climate commitment

The traditionally wealthy countries have a responsibility to contribute to helping poorer countries to reduce their emissions and adapt to climate change. At the same time, there is significant change underway in the relative economic strengths in the world. Over time, economic strength must also entail a greater responsibility for financing global climate measures.

Norway has played an active role in the international climate negotiations. We have been particularly involved in building trust between countries and helping to move forward the negotiations. For the Copenhagen meeting, Norway – together with Mexico – proposed the establishment of a Green Climate Fund and a scheme under the direction of the UN to sell emission allowances to finance climate measures in poor countries. In 2010, Prime Minister Stoltenberg – together with Ethiopia's prime minister – led the international group appointed by the UN's Secretary-General to study potential sources of revenue to mobilise USD 100 billion for climate measures by 2020. In 2011, Norway – joined by South Africa and Mexico – led the work to set up the Green Climate Fund, which was established in Durban.

The Green Climate Fund could become the key mechanism for channelling economic resources – both public and private – to climate initiatives in poor countries. The Government wants Norway to help finance the Green Climate Fund. We will work to ensure that the Fund focuses on financing measures based on results achieved, and on mobilising the private sector to undertake climate-friendly investments in poor countries.

The Government has a stated goal for Norway to help lead the way for international acceptance of CO₂ capture and storage as a necessary climate measure. Norway has earned a significant international position in this area. A stronger international commitment to CO₂ capture and storage, particularly in countries that are expected to experience robust economic growth in the coming years, and thus also increased emissions, will be especially important. Realisation of actual demonstration projects can constitute a major contribution to development of technology and, in time, also to commercialisation of this technology. This will help to pave the way for CO₂ capture and storage as an important climate initiative that will lead to real global emission cuts.

Most international analyses point to carbon pricing as the most important policy instrument in the work to combat climate change. Carbon pricing motivates initiatives to reduce emissions, finance climate measures and stimulate development of new technology. The largest existing carbon market is the EU emissions trading scheme, which Norway is a part of. Several carbon markets are now being established around the world. Australia has recently decided to establish its own cap and trade market, and several US states have done the same. Work is also underway to establish emissions trading in countries such as Japan and China.

Establishment of a global carbon market or a global carbon tax does not appear likely in this decade. A more realistic approach may be to link national and regional carbon markets over time. Norway wants to be a driving force in the work to develop and organise international carbon markets. In the years ahead, we will further refine and reinforce this work.

Norway launched the climate and forest initiative in 2007, in which we committed to contribute up to NOK 3 billion annually to measures to fight deforestation in developing countries. The world can achieve the fastest and cheapest cuts in greenhouse gas emissions by reducing global deforestation. Indonesia has a stated goal of emission reductions by 2020 of between 15 and 25 times Norway's total emissions. The reductions in Brazil's Amazon area in recent years have been conservatively estimated at ten times Norway's total emissions, and probably represent the world's largest climate initiative. The Norwegian climate and forest initiative has contributed to these reductions. This initiative has also played an important role in increasing international focus on global deforestation and to coordinate and organise international efforts to fight deforestation and forest degradation.

Efforts targeting so-called short-lived climate forcers is our best chance to slow down global warming in a short-term perspective. According to a UNEP scientific report from 2011, effective measures against black carbon and other short-lived climate forcers over the next 20 years could reduce global warming by 0.5 degrees towards the middle of the century. It will take longer before we can see a comparable impact from new, emission-reducing measures for CO₂ and other long-lived greenhouse gases. The impact from reductions in short-lived climate forcers will be

greater in the Arctic, where the expected temperature increase will still be substantial. Increased efforts to reduce emissions of short-lived climate forcers in the short and medium terms, along with a strong reduction in emissions of long-lived greenhouse gases such as CO₂, will be crucial.

The energy sector is responsible for about 2/3 of the total global emissions. Increased access to low-emission and emission-free energy is key to the world succeeding in both reducing poverty and global emissions of greenhouse gases in the next decades. The UN Secretary-General has launched a global initiative for sustainable energy (Sustainable Energy for all, SE4ALL). To achieve the goal of energy access for everyone, the private sector must be mobilised to invest in renewable energy in developing countries. From the Norwegian side, NORFUND will be a key tool in contributing to commercial investments in renewable energy in poor countries. The Government will strengthen NORFUND in the years toward 2020.

The Government will:

- Work for a broad, ambitious climate agreement in line with the two-degree target, which lays down concrete emission reduction obligations for both developed countries and major developing countries.

Within an overall increase in development aid, the Government will:

- Following an evaluation, consider expanding the climate and forest initiative beyond NOK 3 billion annually, as part of a multi-national payment mechanism for verified emission reductions, if other countries also increase their contributions.
- Step up the work to increase commercial investments in renewable energy in poor countries, in part by reinforcing NORFUND.
- Contribute to reducing emissions of short-lived climate forcers through stronger international efforts.



Published by:
Norwegian Ministry of the Environment

Internet address:
www.government.no

Cover photo: Tom Schandy/Samfoto/NTB Scanpix

Printed by:
07 Oslo AS 11/2012

