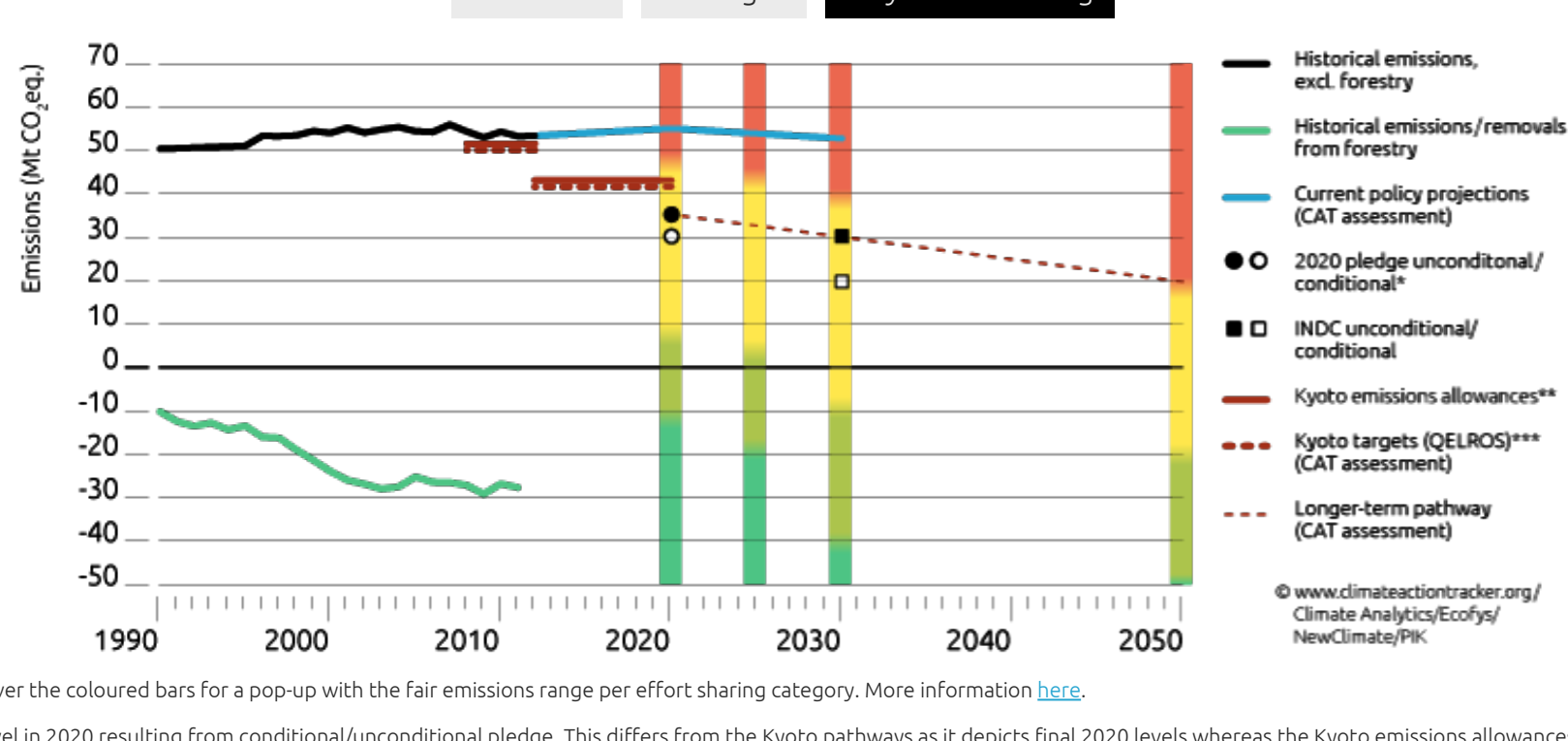


### Rating



Note: Hover over the coloured bars for a pop-up with the fair emissions range per effort sharing category. More information [here](#).

\* Emissions level in 2020 resulting from conditional/unconditional pledge. This differs from the Kyoto pathways as it depicts final 2020 levels whereas the Kyoto emissions allowances consider the average level of emissions over the second commitment period (2013-2020).

\*\* Incl. LULUCF credits and debits, incl. LULUCF base year emissions accounting rules and application of historical threshold on emissions allowances in 2020 under the Doha decision.

\*\*\*Excl. LULUCF credits and debits, excl. LULUCF base year emissions accounting rules and without application of historical threshold on emissions allowances in 2020 under the Doha decision.

### Assessment

Norway has announced—in their March 2015 INDC submission—its intent of reducing GHG emissions by 40% below 1990 industrial GHG levels in 2030, aligning itself with the European Union’s target. We rate Norway “medium”, and hence not consistent with limiting warming below 2°C unless other countries make much deeper reductions and comparably greater effort. In the longer term, Norway’s goal is to become a carbon-neutral economy by 2050 (2030 in there are more ambitious reduction targets from other developed countries).

Currently-implemented policies are projected to result in domestic emissions in 2030 above 1990 levels by 4 and hence far from being on track to reduce domestic emissions to levels implied by the 40% reduction goal, even after accounting for LULUCF credits and possible use of international emissions units.

Positive elements of Norway’s INDC include the specification that it includes economy-wide emission reduction goals, and that the sources of GHG emissions in its base year (1990) are industrial GHG emissions.

The INDC states that Norway will use land use, land use change and forestry (LULUCF) but that the ‘final choice of land sector accounting shall not affect the ambition level for 2030’. While there is uncertainty over the LULUCF accounting, Norway’s INDC makes clear this will not affect the achievement of the 40% reduction in industrial GHG emissions from 1990 levels.

Norway is set to join the Kyoto protocol’s second commitment period with a reduction of 16% from 1990 levels, equivalent, given its starting point in 2012, to a reduction of approximately 35% from industrial greenhouse gases below 1990 levels in 2020. This is consistent with Norway’s Copenhagen pledge of a 30 to 40% reduction by 2020. Emissions of industrial GHGs in 2012 were approximately 4.5% above 1990 levels, and close to the first commitment period of Kyoto limits.

Norway would need to consider putting forward a 2025 goal to be consistent with the call by many governments for a five-year cycle of commitments.

### 2020 Pledge and post-2020 INDC

#### Kyoto Protocol second commitment period (2013-2020)

Norway’s target under the Kyoto Protocol’s second commitment period (2013–2020) is to reduce average annual emissions of industrial GHG emissions by 16% (QELRO<sup>[1]</sup> of 84) from 1990 levels, equivalent to about a 37% reduction in the year 2020<sup>[2]</sup>. Under the Kyoto Protocol’s Land Use Change and Forestry accounting provisions, CAT estimates Norway is likely to get an annual credit equivalent to about 1.7–3.4% of 1990 industrial GHG emissions over the period 2013-2020. This would likely result in a 30–33% reduction of industrial GHG emissions in the year 2020<sup>[3]</sup>. The actual level of domestic emissions reductions would also depend upon emissions trading and the level of Joint Implementation (JI) and CDM (CER) units acquired or held.

With currently implemented policies and measures, Norway’s emissions are expected to increase by around 10% above 1990 levels in 2020 in industrial GHG emissions, reaching emissions of roughly 55 MtCO<sub>2</sub>e by 2020. On these projections, Norway will not be able to meet its Kyoto target (see figure) without acquiring emission units internationally.

National policy is to reduce most (two thirds), of its GHG emissions domestically and to buy emission units for the rest, to the tune of up to 30 million credits during the Kyoto Protocol second commitment period. The Government decided to refrain from purchasing credits from coal-based production without CCS (carbon capture and storage), or from industrial HFC projects, thereby placing an environmental integrity constraint on the sources of emissions units purchased. Norway will only acquire credits from projects at risk of discontinuing their operations due to low carbon prices.

If the “two thirds” domestic reductions policy is followed then domestic emissions reductions of industrial GHG emissions by 2020 could be in the range of approximately 17–23%, with the low end accounting for the upper end of CAT estimates of LULUCF credits and the high end excluding LULUCF credits.

In summary, the overall level of industrial GHG emissions reductions Norway has committed to achieving under the Kyoto Protocol Second Commitment period is consistent with the lower end of the 30–40% by 2020 reduction pledge made under the Convention by Norway in 2010. However, domestic reductions of industrial GHG emissions are likely to be smaller than this due to the acquisition of international emission units as well as LULUCF credits.

#### Convention Pledge

Prior to adoption of the Kyoto Protocol second commitment period target, Norway pledged in 2010 to reduce emissions by 30–40% below 1990 levels by 2020 with the 40% reduction target conditional on global action.

#### INDC Target

In March 2015, Norway submitted an INDC stating its goal of reducing emissions by at least 40% below 1990 by 2030 (UNFCCC, 2015).<sup>[4]</sup> Norway hints that an ambitious outcome in Paris could lead to a larger commitment through the acquisition of international emissions units.<sup>[5]</sup> Norway’s current intention is to fulfil their commitment collectively with the EU. A possible link with the European carbon market is still subject to negotiations (Reuters, 2015). If an agreement with the EU is reached, Norway’s target will be achieved in the absence of UN carbon credit offsets (e.g. investment in developing countries), otherwise Norway will continue to use market-based mechanisms under the UNFCCC.

Although the base year for Norway’s INDC is set with respect to industrial GHG emissions in 1990, Norway intends to use the land-use, land-use change and forestry sector. The INDC submission states that the 40% reduction commitment includes additional measures in the land sector, but the ‘final choice of land sector accounting shall not affect the ambition level for 2030.’ The exact meaning of this is, however, unclear and at present is open to quite different interpretations.

Nevertheless, in this assessment, based on the information in the INDC, we interpret the meaning of the LUCF approach to be the following: the 40% reduction commitment is against 1990 industrial GHG emissions, and this metric is to be achieved irrespective of the additional measures taken in the land sector. The submission states that the final choice of land sector accounting will not affect the ambition level compared to the case where this sector is not included.

According to Norway’s INDC document, the LULUCF sink will grow from 10.1 MtCO<sub>2</sub>e in 1990 to 21.2 MtCO<sub>2</sub>e in 2030. For 2012, Norway had earlier reported a larger LULUCF sector sink of ~28 MtCO<sub>2</sub>e than is projected for 2030. The submission text (footnote 2) suggests that only reductions in addition to those in the base year and already projected can be counted as credits toward meeting the 2030 target. However, the supporting text is not completely clear as to how the LULUCF sector will be incorporated into the final target, and the conditions described in the INDC submission make it difficult to evaluate the assumed contribution of this sector. The submission states that if the projected increase in sink between 1990 and 2030 (11.1 MtCO<sub>2</sub>e) were credited, the 2030 target would be recalculated so that the ambition level does not change. We estimate that this would mean a target of about 60% from 1990 levels would be needed to produce the same outcome (40% reduction)..

In addition to its domestic target, the Norwegian government announced it would adopt a binding goal of carbon neutrality by 2030, conditional to ambitious commitments by other developed nations. In this case, additional reductions would be achieved abroad rather than domestically. Even in the absence of ambitious commitments by other nations, Norway’s long-term goal is to be a low carbon society, or carbon neutral, by 2050.

[1] The QELRO, expressed as a percentage of Kyoto Protocol Annex I GHG emissions and sources (“industrial GHG emissions”) in relation to the base year, denotes the average level of emissions that an Annex B Party could emit annually during a given commitment period.

[2] Starting with reported Kyoto Annex A emissions in 2012 and assuming a linear decline in these emissions until 2020 so that cumulative emissions in 2013-2020 are equal to the total Kyoto assigned amount based on the QELRO.

[3] Assuming that the LULUCF credits are effectively added to the QELRO and starting with reported Kyoto Annex A emissions in 2012, with a linear decline in these emissions until 2020 so that cumulative emissions in 2013-2020 are equal to the total Kyoto assigned amount based on the QELRO plus the LULUCF credits.

[4] The base year emissions specified in the INDC are all greenhouse gases not controlled by the Montreal Protocol and in effect Kyoto Annex A sources - Energy; industrial processes and product use; waste.

[5] In the INDC it is stated that “If it can contribute to a global and ambitious climate agreement in Paris, Norway will consider taking a commitment beyond an emission reduction of 40% compared to 1990 levels, through the use of flexible mechanisms under the UN framework convention beyond a collective delivery with the EU.”

### Fair share

We rate Norway’s INDC for 2030 “medium”, a rating also applicable to its likely Kyoto Protocol second commitment period 2020 outcome.

This means that Norway’s 2030 target (and 2020 Kyoto outcome) is only in line with the less stringent emissions reductions required from the effort-sharing approaches assessed by the CAT. In particular, they are consistent with a global 2°C pathway only according to the “equality” proposals, but not under the Responsibility/capability/need category.

In its INDC, Norway argues that it “is doing its fair share for the global goal of keeping global warming below 2°C compared to pre-industrial levels” and sources this to the IPCC AR5 results: “(A)n emissions reduction target of 40% by 2030 compared to 1990 is at the high end of emission reductions that should be implemented by OECD-countries, given a global cost-effective, regional distribution of emission reduction targets (IPCC WGIII, table 6.4)”.

This appears to reflect a misunderstanding of the global cost-effective emissions pathways, which do not include equity and fairness assumptions, but simply reflect where emissions reductions are most cost-effective. Cost-effectiveness itself is not a measure of equity and fairness of effort and hence of allocation of emission effort, but rather an economic principle to be applied after an emission effort allocation has been made.

### Current policy projections

Since 1990, GHG emissions in Norway have slightly increased, reaching 53 MtCO<sub>2</sub>-eq in 2012 (excluding LULUCF). This level was above the Kyoto Target in 2012, and Norway purchased 21.5 Million carbon credits to offset its surplus (IETA 2013).

Under current policy projections, Norway will not be able to reach its 2020 and 2030 targets, as GHG emissions are projected to stabilise at current emissions levels up to 2030. With currently implemented policies and measures, the latest projections for Norwegian national emissions from the sixth National Communication are 54 MtCO<sub>2</sub>e in 2020 and 52 MtCO<sub>2</sub>e in 2030 (Norwegian Ministry of climate and environment, 2014), which would be an increase of 9% and 5% respectively, compared to 1990.

During the last two decades, Norway has put in place many policies and measures to contain CO<sub>2</sub> emissions and promote the use of renewable energy. Since 1991, emissions from offshore activities have been subject to a carbon tax.

In 1999, under the White paper on energy policy, the Government adopted additional energy and CO<sub>2</sub> taxes. The taxation level is not constant across sectors, with higher rates for oil-related activities. After the introduction of the ETS (Emission Trading Scheme), the rate levels are subjected to revisions, in order to embed changes in the price of carbon. In such a context, in 2013 the Government increased the offshore carbon tax by 200 NOK per tCO<sub>2</sub>-eq (IETA 2013).

Norway then delivered a strategy to promote small-scale hydropower plants (2003) and a white paper on National climate policy (2007). The legislation has also focused on offshore oilfields (with the “Offshore energy act”, 2010) and on the promotion of renewable energy (“Renewable energy action plan”, in 2012).

Historically, Norway’s most important instrument to tackle GHG emissions has been the carbon tax on petroleum activities. Nonetheless, emissions from offshore activities have doubled, from 7 MtCO<sub>2</sub>e in 1990 to 14 MtCO<sub>2</sub>e in 2010. The CO<sub>2</sub> tax on offshore activities, together with the EU-ETS system, is expected to reduce emissions in 2020 by 7 MtCO<sub>2</sub>e, compared to a ‘Business as Usual’ (BAU) scenario.

Economic growth in Norway is mostly based on exploitation of natural resources (OECD 2014). As a result, oil-related activities are the main sources of current GHG emissions, along with the transport sector. The electricity sector is almost carbon neutral, as hydropower facilities cover roughly 95% of domestic generation.

Overall, the effect of measures and policies that Norway has adopted between 1990 and 2013 (including the ETS) is estimated to yield a total reduction of about 16-19 MtCO<sub>2</sub>e in 2020 and 17-20 MtCO<sub>2</sub>e in 2030 (6<sup>th</sup> National Communication).

Norway has a substantial carbon sinks in its forests: with 30% of its land surface covered by forest, the sink equals approximately half of Norway’s annual emissions. The net uptake of CO<sub>2</sub> in 2020 is projected to decrease from 24 Mt/yr to around 20 Mt/yr towards 2030 (Norwegian Ministry of Climate and Environment, 2014)).

### Data sources and assumptions

#### Pledge

Targets for 2020 and 2030 were calculated from the most recent national inventory submissions (CRF, 2014).

While Norway intends to become a carbon neutral nation, only part of the cuts in total emissions by 2050 would be made domestically and would include their LULUCF sector, which is currently a large sink. LULUCF removals are projected to slightly decline in 2030, reaching 20 MtCO<sub>2</sub>. In our analysis we assume that LULUCF emissions stabilise at 20 MtCO<sub>2</sub> up to 2050. As a result, a carbon neutrality target in 2050 entails a pledge of 20 MtCO<sub>2</sub>.

#### Current Policies

The current policy projections are based on the Sixth National Communication (Norwegian Ministry of climate and environment, 2014); Historical data is based on CRF 2014.

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