

Quality assurance of comparison of international climate change target frameworks

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1 Introduction

The Scottish Government has prepared comparisons of greenhouse gas emission reduction targets for leading climate change jurisdictions (Sweden, Norway, Finland, France, UK, EU). ClimateXChange has been requested to review the accuracy of the comparisons and to research additional relevant information, provided below.

The comparisons only include targets in domestic legislation, except in the case of the EU, where the target for 2030 has been endorsed by the European Council but not enacted in legislation. Targets arising from international commitments, in particular the Paris Agreement to the United Nations Framework Convention on Climate Change, are not included, unless also included within domestic legislation. For countries within the EU, targets for 2030 under the proposed Effort Sharing Regulation (ESR) are also not included.

New York State, where the targets have been established by executive orders; the State of California, where the target for 2050 has also been established by executive orders; and Iceland, where targets are not legislated, have also been included in this analysis.

ClimateXChange has reviewed the comparisons and conducted a desk review of online documentary sources on domestic greenhouse gas emission reduction targets for the selected entities in order to confirm the assessment, and to provide additional information, in particular about certain targets, minimum levels of domestic action and the inclusion or exclusion of international aviation and international shipping emissions. The information was found to be accurate, subject to minor clarifications and further information provided below. Hyperlinks have been included, where appropriate, to websites with additional supporting evidence.

The review was conducted in English. Information only available in other languages may have been overlooked, and/or the available information may have been mistranslated. While all reasonable steps have been taken to ensure that the information contained in this document is accurate, ClimateXChange does not make or give any warranty that the information contained herein is correct and accepts no liability for any loss, damage or claim arising from any person, whether authorised or unauthorised, seeking to rely on the contents of this document.

2 Sweden

2.1 Scope of targets

Sweden's 2020, 2030 and 2040 targets apply only to emissions outside of the EU Emissions Trading System (EU ETS).

3 Norway

3.1 Norway's carbon neutral target

Our understanding is that Norway's carbon-neutral target is based on a broad political agreement, endorsed through resolutions in the Norwegian parliament (the Storting) but not implemented in actual legislation. Nevertheless, a non-legislative resolution of the Storting still constitutes a direction to the

government to do as the resolution requests. If the government wished to do otherwise, it would need to put a new resolution to the Storting, which would need to be passed to overturn the original one.

The carbon-neutral target was first put forward in a white paper produced by the Norwegian Ministry of the Environment in 2012 (an [English summary](#) is available, in addition to the [original document](#)). At this point the proposed target was for 2050, with the intention to bring this forward to 2030 if a binding international climate change agreement was reached. The Storting endorsed this report in [Decision 560](#) in June 2012.

When the Storting approved ratification of the Paris Agreement in June 2016, it asked the government (in [Decision 897](#)) to 'assume' that Norway would provide emission reductions equivalent to Norwegian emissions from 1 January 2030, and that carbon neutrality could be achieved through the EU ETS, international cooperation, trading and project-based mechanisms. In other words, Decision 897 brings forward the carbon-neutral target to 2030, on the basis of the Paris Agreement being a binding international climate change agreement. However, it has the same status as the previous Decision 560 (a direction to government, not legislation).

3.2 Minimum level of domestic action

The only domestic legislation we are aware of in relation to the 2050 target is the 2017 [Climate Act](#). Section 2 of this Act specifies that it applies to the emissions and gases covered by [Norway's first Paris Agreement NDC](#), and Section 5 states that targets shall also be consistent with Norway's NDC. Norway's first NDC makes it clear that, up to 2030 at least, Norway hopes to rely to some extent on access to non-domestic flexibility mechanisms – either those available to EU Member States, in the event of an agreement with the EU (not including international market credits); or similar mechanisms (including international market credits) in the event of no agreement with the EU. The extent of reliance of such flexibility mechanisms (and hence, the minimum level of domestic action) is not stated in Norway's NDC. The Climate Act similarly mentions (in Section 4) that in meeting the 2050 target, consideration will be given to the effect of Norwegian participation in the EU ETS, and Sections 5 and 6 mention a possible agreement on collective achievement of climate targets with the EU (which is still to be negotiated). Therefore it can be concluded that the Act envisages some access to non-domestic flexibility mechanisms to meet the 2050 target. No minimum level of domestic action is specified.

3.3 International aviation and shipping

As noted above, Norway's Climate Act states that targets shall be consistent with Norway's NDC. This implies that the 2030 domestic target, which appears to be identical to Norway's NDC target, would not include international aviation or international shipping, as these are not explicitly included in Norway's NDC target. The Paris Agreement itself does not cover international aviation or international shipping emissions, although this would not necessarily preclude a country from including them in its own NDC ([Romera, 2016](#)).

It should be noted, however, that the limited portion of international aviation that is included in the EU ETS, i.e. aviation between Norwegian and EU airports, may be included in Norway's domestic targets, as the Climate Act states that consideration will be given to the effect of Norwegian participation in the EU ETS.

It should also be noted that the Climate Act does not explicitly exclude international aviation or shipping emissions, and it allows inclusion of additional emissions and gases by regulation. Therefore it would be possible for Norway's 2050 target to include international aviation and shipping emissions, if the government so desires, in future.

In summary, Norway's Climate Act 2017 states that targets shall be consistent with Norway's NDC, which does not explicitly include international aviation or international shipping emissions.

4 Finland

4.1 Minimum level of domestic action

The Finnish [Climate Change Act \(609/2015\)](#) is silent on this issue. However, some insight into current interpretation can be drawn from the [first medium-term plan](#) under the Act, issued by the Finnish Government in September 2017. This medium-term plan (to 2030) covers only the non-EU ETS sectors. It essentially follows the European Commission's [2016 proposal for the ESR](#), which included a 39% reduction target for Finland, with an Article 6 flexibility allowance of 2% (meaning that a quantity of EU ETS allowances may be cancelled for compliance, up to 2% of 2005 emissions). The medium-term plan assumes use of this Article 6 flexibility (approx. 0.7 MtCO_{2e}) and sets out a variety of domestic policies and measures to cover the remaining gap to the 39% reduction target. However, it does not preclude the possible use of other ESR flexibilities (such as banking and borrowing, use of LULUCF, or trading with other countries) if necessary towards 2030.

Therefore while the focus of the medium-term plan is on domestic action, the Article 6 flexibility mechanism implies some reliance on EU-wide action in the EU ETS sectors. Furthermore, as the EU ETS allows some use of international offsets, Article 6 flexibility effectively also partly includes international abatement action. However, it is worth noting that the Commission's 2016 proposal for the ESR did not include any direct use of international offsets by Member States. Although some changes have been made to the Commission's original proposal during the legislative process, this principle seems very likely to be retained.

4.2 International aviation and shipping

The Climate Change Act (609/2015) does not explicitly include or exclude all international aviation and/or shipping emissions. However, through its references to EU ETS and non-EU ETS sectors, it can be inferred that these would be interpreted according to EU legislation, which currently means that only intra-EU international aviation emissions would be included, and all international shipping emissions would be excluded.

5 France

5.1 France's carbon neutral target

To the best of our knowledge, the goal of carbon neutrality by 2050 is only contained in France's 2017 [Climate Plan](#) (a policy document) and not in legislation. The plan states that the National Low-Carbon Strategy will be updated by the end of 2018 and that this will set out how France intends to meet the carbon neutral goal.

5.2 Minimum level of domestic action

Article 1 of France's [Energy Transition and Green Growth Act](#) (No. 2015-992) amends Article L-100-4.-1 of the Energy Code to include targets to reduce emissions by 40% on 1990 levels by 2030 and 75% by 2050. This is translated into 5-year carbon budgets which are further described in Article L. 222-1 A of the Environment Code; further details are deferred to regulations. One such regulation, [Decree No. 2015-1491](#) of 18 November 2015, clarifies that the emissions included in these carbon budgets are the same as those notified by France to the European Commission and for UNFCCC reporting purposes. Therefore they cover both non-EU ETS emissions and EU ETS emissions (excluding international aviation). Decree No. 2015-1491 implies a focus on accounting only for actual emissions and not for any transfers of credits from other countries, which suggests that the 2030 and 2050 targets are currently interpreted as minimum levels of domestic action (although indirectly benefiting from actions in other European states via the EU ETS). This interpretation is supported by the current [National Low-Carbon Strategy](#) (2015) which focuses on domestic actions and makes no mention of using any non-domestic offset credits. Nevertheless, the primary legislation (the Energy Transition and Green Growth Act) neither explicitly states that the targets include only domestic action, nor explicitly rules out any use of non-domestic credits.

6 New York State

6.1 New York State targets

New York State's target of an 80% reduction on 1990 levels by 2050 was first put forward in [Executive Order 24 \(2009\)](#). It was subsequently re-affirmed in [Executive Order 166 \(2017\)](#). Executive Order 24 mainly served to establish a Climate Action Council and authorise the preparation of a Climate Action Plan, while Executive Order 166 requires state entities over which the governor has executive authority to adopt individual plans that will contribute to the overall state goal. Executive Order 24 refers to the target as a 'goal', whereas Executive Order 166 refers to it as a 'policy'.

New York State also has a target of a 40% reduction from 1990 levels by 2030. This was originally put forward as a policy target within the 2015 [State Energy Plan](#), but it is now also included in Executive Order 166 (2017).

The overview of New York State laws provided by [Georgetown Law Library](#) explains that executive orders form a part of the state's administrative law, or the rules and regulations which are made under statutory authorisations established in primary legislation. Therefore while an executive order directs the actions of state agencies and officials, it is of a subsidiary status compared to legislation, and may be overturned by a subsequent executive order. Incoming governors typically review the existing executive orders and repeal all except those specifically identified for continuation. For example, Executive Order 24 (2009), which was issued by the previous governor, currently remains in force due to being specifically continued by [Executive Order 2 \(2011\)](#).

The difference between executive orders and legislation is highlighted by the attempts that have been made to pass legislation incorporating climate change targets. The latest version of the New York State Climate and Community Protection Act was passed by the New York State Assembly (for a third time) on [24 April 2018 and delivered to the Senate, where it was referred to the Environment Conservation Committee](#), where it remains (as of 4 May 2018).

6.2 Minimum level of domestic action

Neither Executive Order 24 (2009) nor Executive Order 166 (2017) explicitly specify a minimum level of domestic action. However, the interpretation within recent policy instruments such as the [Clean Energy Standard](#) (which requires utilities to procure 50% of New York State's electricity from eligible renewable and nuclear sources by 2030) implies a strong focus on domestic action. For example, [Appendix A](#) of the Clean Energy Standard specifies that eligible renewable energy generation must either originate within New York State or be contractually delivered into New York State and consumed there. In addition, the New York State [greenhouse gas inventory](#) for 1990-2014 does not include any accounting for non-domestic emission reduction credits or offsets. It can therefore be presumed that under current policy interpretation, no significant non-domestic action is intended to count toward the 2050 target. However, the absence of clear guidance in the executive orders suggests that a different interpretation could potentially be taken in future.

In summary, neither Executive Order 24 (2009) nor Executive Order 166 (2017) specify a minimum level of domestic action, but current interpretation in policy instruments such as the Clean Energy Standard implies a strong focus on domestic action only.

6.3 International aviation and shipping

Similarly, neither Executive Order 24 (2009) nor Executive Order 166 (2017) explicitly specify whether international aviation and shipping emissions should be included or excluded from the state's 2050 target. However, the wording of the target in Executive Order 24 (2009) "to reduce current greenhouse gas emissions from all sources within the State" strongly implies that international aviation and international shipping emissions would be excluded, as these emissions would mainly physically occur outside the borders of the State. This interpretation is supported by the New York State [greenhouse gas inventory](#) for 1990-2014, which does not include any mention of international aviation or shipping emissions (domestic aviation and shipping emissions are included). Nevertheless, as with the minimum level of domestic action, the absence of clear guidance in the executive orders suggests that a different interpretation could potentially be taken in future. Executive Order 166 (2017), which refers to reducing emissions "across all emitting activities of the economy", would be more amenable to such an interpretation.

In summary, neither Executive Order 24 (2009) nor Executive Order 166 (2017) explicitly include international aviation or international shipping emissions.

7 State of California

7.1 California's targets

The State of California was an early adopter of legislated climate change targets. In 2005, then-Governor Schwarzenegger issued [Executive Order S-03-05](#), which established targets for 2010 (reducing emissions to 2000 levels); 2020 (reducing emissions to 1990 levels) and 2050 (an 80% reduction on 1990 levels). The 2020 target was subsequently included in legislation, [the California Global Warming Solutions Act of 2006](#), also known as Assembly Bill 32 (AB32). A 2030 target of a 40% reduction below 1990 levels was introduced by Governor Brown in [Executive Order B-30-15](#) in 2015 and codified in legislation in 2016 ([Senate Bill 32](#)). The 2050 target was also re-affirmed in Executive Order B-30-15, but has (to date) not been enacted in legislation. All of these targets are economy-wide and are set for the designated target years only.

7.2 Minimum level of domestic action

None of the previously mentioned executive orders or legislation explicitly specify a minimum level of domestic action for any of the targets. However, AB32 defines “Statewide greenhouse gas emissions” as the total annual emissions of greenhouse gases in the state, including emissions associated with the generation of electricity delivered to and consumed in California (s. 38505 (m)). Hence progress towards the 2020 target is partly determined by changes in the emissions intensity of electricity generated outside the state. Furthermore, AB32 requires the California Air Resources Board to develop a scoping plan to identify and recommend emission reduction measures, potentially including measures in other states or nations (s. 38561 (c)). A major component of both the [original plan for 2020](#) and the [latest plan for 2030](#) is a cap-and-trade program that includes non-domestic action through linkages with similar schemes in other jurisdictions (e.g. Québec from 2014 and Ontario from 2018), and by allowing [offsets from emission reduction projects](#) which may occur outside California (but within the United States). [Assembly Bill 398](#), approved in July 2017, clarifies that the cap-and-trade scheme will continue up to 2030, including on-going use of offsets. However, no more than half of such offset credits may be sourced from projects that do not provide direct environmental benefits in the state. Therefore while there is some indication of a trend towards lower reliance on non-domestic action in future, at this point, the minimum level of domestic action in 2050 remains unspecified.

7.3 International aviation and shipping

None of the previously mentioned executive orders or legislation explicitly specify whether international aviation and shipping emissions should be included or excluded from the state’s targets. However, the [technical document setting out the methodology for calculating California’s 1990 emissions](#), and hence also its 2020, 2030 and 2050 targets and progress towards those targets, clarifies that emissions resulting from international flights and shipping occurring further than 24 nautical miles from California’s coast are excluded (p. 24).

8 Iceland

8.1 Iceland’s targets

Iceland has a long-term aspirational policy goal, set out in its [Climate Change Strategy 2007](#), to reduce emissions by 50-75% from 1990 levels by 2050. However, this has not been implemented in legislation. The [Climate Act 70/2012](#) contains only a general objective to reduce emissions efficiently. Iceland’s [first NDC](#) under the Paris Agreement notes that Iceland intends to contribute to collective achievement with the EU of a 40% reduction target by 2030 (this is still subject to on-going negotiations). Furthermore, the new government has set out in the [Government Agreement](#) an intention to be carbon neutral by 2040, but this has not yet been implemented. The Climate Change Council, which will develop proposals for how the carbon-neutral target can be achieved, [is expected to start work in June 2018](#).