EU could clarify forestry, land use accounting to strengthen its INDC

Climate Action Tracker policy brief

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Summary

- The European Union has submitted its "intended nationally determined contribution" (INDC) to a new international agreement on climate change.
- The EU target is to reduce domestic greenhouse gas emissions by at least 40% below 1990 in 2030. However, it includes forestry accounting, which could effectively weaken the reductions necessary by all other sectors by a few percentage points.
- The original proposal of domestic reductions of 40% is already less ambitious than what the range of studies find to be the EU's fair contribution to the global effort to limit warming to 2˚C.
- During 2015, in addition to increasing its overall emissions reductions target, the EU has an opportunity to clarify the magnitude of the impact of its LULUCF accounting. One option could be that the EU specifies that its 'at least 40% domestic emission reductions by 2030' would be achieved by all sectors excluding LULUCF, i.e. irrespective of LULUCF accounting rules. In addition, the EU would also need to indicate a target for 2025 given that the question of the length of commitment periods remains unresolved: many countries are calling for five years (2021 to 2025).

Assessment

On 06 March 2015, the EU submitted its Intended Nationally Determined Contribution (INDC) to the UNFCCC (UNFCCC 2015a, 2015b) formally putting forward a binding, economy-wide target of at least 40% domestic greenhouse gas emissions reductions below 1990 levels by 2030. We rate this target Medium.

The overall level of GHG emissions reductions proposed in the INDC is not yet sufficient to fall within the range of approaches for fair and equitable emission reductions for the EU28 which indicate that deeper reductions would be needed by 2030 for the EU INDC to be rated "sufficient."

Currently-implemented policies are projected to reduce domestic emissions by 23–35% below 1990 levels and hence do not—yet—put the EU on a trajectory towards meeting either its 2030 or 2050 targets.

A positive element of the EU's INDC is the specification that it includes economy-wide emission reduction goals. However, it lacks transparency on which sectors from land use, land use change and forestry (LULUCF) are to be included in its emissions accounting in the base year (1990), and for the period 2021 to 2030, and what the accounting rules and modalities would be for these. Of concern is the proposal that these elements are only to be clarified after 2015, and before 2020.

In relation to 2020, the EU has signed up to the second commitment period of the Kyoto Protocol (2013–2020) with a QELRO equivalent to a 20% reduction from base year emissions, averaged over the second commitment period. This is approximately a 21% reduction in Kyoto Protocol Annex A emissions[1] from 1990 levels by 2020. Emissions of industrial GHGs in 2012 were approximately 19% below 1990 levels (the first commitment period was approximately 16% below 1990).

Currently-implemented policies are estimated to lead to a 22–27% reduction below 1990 levels by 2020, meaning that the EU is on track to significantly over-achieve its Kyoto second commitment period target. However, with current policies the EU is not on track to meet its more ambitious conditional Copenhagen pledge of reducing emissions by 30% below 1990 levels by 2020. The latter is more consistent with least-cost global pathways for limiting warming below 2°C for the EU28 than either the Kyoto second commitment period target or the unconditional 20% by 1990 Copenhagen Pledge.

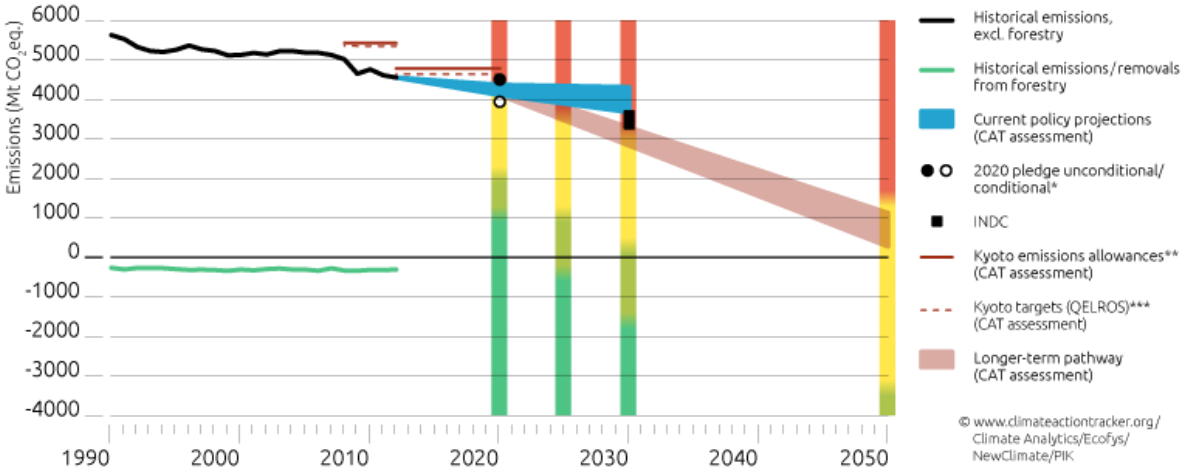

Figure 1. EU's emissions and reduction targets including recently submitted INDC

[1] Annex A covers GHG emissions from the energy, industrial processes, solvent and other product use, agriculture and waste sectors

2020 Pledge and post-2020 INDC[2]

Under the Copenhagen Accord the EU proposed to decrease emissions by 20%-30% below 1990 by 2020 and by 80%-95% below 1990 by 2050. The more ambitious 30% reduction by 2020 target was linked conditionally to other developed countries committing to comparable efforts and developing countries contributing according to their capabilities.

In May 2012, the EU submitted a provisional QELRO[3] (Quantified Emission Limitation or Reduction Objective) level of 80% of 1990 emissions levels for the second commitment period of the Kyoto Protocol, to be fulfilled jointly by the EU and its Member States. This QELRO is inscribed in the amendments agreed in Doha in December 2012. The EU has yet to ratify these amendments.

EU leaders have endorsed the objective of reducing Europe's GHG emissions by 80–95% below 1990 levels by 2050, conditional on necessary reductions to be collectively achieved by developed countries in line with the Intergovernmental Panel on Climate Change (IPCC).

In October, 2104, EU leaders agreed on a 2030 climate and energy policy framework for the EU (EC, 2014a; EEA, 2014), putting forward a legally binding EU target of at least a 40% reduction in domestic emissions by 2030 below 1990, with other main building blocks of the 2030 policy framework for climate and energy, as proposed by the European Commission in January 2014 (EC,2014a).

On 06 March 2015, the EU submitted its INDC to the UNFCCC, committing to a target of at least 40% domestic emissions reductions below 1990 by 2030. Parallel to this, the European Commission (one of the three decision-making bodies of the EU next to the Council of Ministers and the European Parliament) issued a statement on their position (EC, 2015), which differs from the INDC (UNFCCC, 2015) (see below under Uncertainty in effect of LULUCF accounting).

Transparency of accounting and reporting of emissions

Quantitative assessments of any emissions reduction target necessitate that the stated target is clear and quantifiable regarding any reference emissions levels, sectors and gases included, and that the accounting rules to be applied are clear. While the EU INDC does state the gas and sector coverage and reference year, it does not provide sufficient accounting detail to ensure full clarity on these issues.

The lack of clarity in the INDC proposal on the basic question of what is to be included in the base year emissions is puzzling, given that the EU stated that its accounting rules under the UNFCCC and for its 2012-2020 EU energy and climate package were more stringent than the current rules under the Kyoto Protocol. It included the following additional rules:

- A single 1990 base-year for all parties and gases;
- It does not recognise surplus AAUs (Assigned Amount Units) from the Kyoto Protocol's first commitment period;

[2] For underlying assumptions, refer to our webpage http://climateactiontracker.org/countries/eu.html

3 The QELRO, expressed as a percentage in relation to a base year, denotes the average level of emissions that an Annex B Party could emit on an annual basis during a given commitment period.

- Emissions from international aviation are included in the target and the legislation foresees the need to include international maritime emissions, if no progress is achieved to include these at the international level[4].
- Emissions and removals from LULUCF (Land Use, Land-Use Change and Forestry) are not included in the achievement of the reduction target. However, the EU 2020 target may account for LULUCF emissions at a later stage, given that the legislation already foresees that accounting rules should ensure permanence and environmental integrity. [5]

The uncertainty around LULUCF accounting

The INDC confirms the inclusion of LULUCF accounting into the 2030 GHG mitigation framework, but does not provide any further clarity on the accounting rules and potential magnitude of their impact on emissions levels in 2030.

This leaves open several important issues, including whether the 40% reduction goal is set against an industrial greenhouse gas emissions baseline in 1990, as under the Kyoto protocol, or whether LULUCF emissions and/or removals are to be included in the base year, and if so how. The choices here have substantial implications for the environmental integrity of greenhouse gas reduction targets due to the significant uncertainties associated with monitoring of LULUCF emissions and sinks, and the risk of asymmetric accounting when the base year includes LULUCF.

This open question could be seen as contradicting the EU Commission's proposal (separate statement and proposal from February - EC, 2015) that specified the post 2020 LULUCF accounting would build upon rules previously agreed under the Convention, applicable COP decisions and the EU's domestic legislation, and "the current level of environmental integrity." Such language has not been retained in the INDC text.

In the current INDC text, the EU commits to providing further information on these rules "as soon as conditions allow and in any case before 2020." It should be noted that neither the INDC nor the Commission's proposal make any specific reference to the Kyoto Protocol accounting or architecture. The Commission refers instead to the Convention, which has only general reporting guidelines.

The INDC specifies that this would be clarified after 2015, and before 2020. In the absence of further information, it may be extremely difficult to quantify the likely effect of the EU's 2030 proposal in before Paris, and a full quantification would await either the EU's policy announcement post 2015, or the completion of negotiations on implementing architecture and rules. The absence of a commitment to continue a Kyoto Protocol-type accounting architecture gives rise to concern that the EU could be envisaging a substantial change in this area.

The absence, before Paris, of a full and clear explanation of how the EU will account for its LULUCF emissions may also contribute to an incentive for other parties to defer specification of this to negotiations following Paris. Historically, negotiations over LULUCF have been long, difficult and have resulted in substantial accounting asymmetries, adding substantial credits (increasing allowed industrial greenhouse gas emissions).

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4 The EU's inclusion of international aviation into the European emissions trading scheme was the first effort to regulate emissions from this sector globally. We did not evaluate the impact of this on EU28's 2020 target.

5 Of concern in this area is the EU support for proposals to remove emissions from natural disturbances and to count removals from harvested wood products. We have not yet included these two aspects in our accounting calculations for the second commitment period, but inclusion could lead to higher credits (or lower debits), due to asymmetric accounting.

Box 1: Background

The European Union has long supported the Kyoto protocol architecture for reporting upon and accounting for emissions and has called for key elements of this architecture in the new ADP agreement. In the Kyoto Protocol architecture, emission targets are set with respect to defined sources and sectors of greenhouse gas emissions (Kyoto Protocol Annex A) in an agreed base year for a specific period of time. This gives a first estimation of the expected domestic reduction in industrial greenhouse gas emissions during the commitment period against a base year.

Land-use, land-use change and forestry (LULUCF) accounting provisions provide credits or debits, which are added to, or subtracted from, the allowed Annex A emissions during the commitment period. Owing to the potential for asymmetric accounting of sectors and activities in this area, as well as very large data uncertainties, the operation of LULUCF accounting rules under the Kyoto Protocol has often acted to significantly increase the allowed emissions of Kyoto Protocol Annex A greenhouse gas emissions. In addition, under the Kyoto Protocol architecture, the defined rules for, and accounting of, acquisition and transfer of emission units via joint implementation, emission trading and the CDM, gives a transparent indication of net effect of transfers, and hence defines the domestic emission reductions consistent with achievement of the Protocol's targets.

The INDC proposal is not expressed clearly in terms of this architecture, which the EU has historically supported, nor is an alternative architecture explained. Consequently there remains significant uncertainty as to what exactly are the base year emissions of the European Union's INDC. If a Kyoto Protocol like architecture is not to be used for the specification of the 40% reduction goal, it would be necessary to elaborate which LULUCF sectors and activities are to be included in the base year, so that an evaluation is made possible of what the 40% reduction actually means with respect to Kyoto Annex A industrial greenhouse gas emissions. The absence of clarity in this area in both the INDC proposal, and the Commission documents give rise to uncertainty as to the actual effect of the 40% reduction proposal compared to 1990 industrial greenhouse gas emissions. This uncertainty is magnified by the range of possible scenarios for LULUCF accounting, and the potential for asymmetric accounting to occur in this area generating credits from a situation where there may be little change, or even negative changes in carbon stocks.

The order of magnitude of the effect of including forestry is not clear from the EU's submitted INDC, nor from the Commission, as the effect will also depend on the accounting rules used. Due to lack of publically available data, there is no rigorous way to quantify the range of likely outcomes at this point, and it would seem inappropriate to simply assume the most favourable - or indeed the worst - estimates.

At the lower end of the spectrum of possibilities, is the outcome for the first commitment period of the Kyoto protocol: LULUCF credits in the Kyoto Protocol's first commitment period added a 75 $MtCO_2/a$ credit to the EU allowed Kyoto Protocol Annex A GHG emissions (own calculations), effectively weakening the target by 1.4%, or by 1.3% when expressed as a reduction of industrial greenhouse gas emissions against 1990 levels. Another reference could be the likely second commitment period credits, which the CAT has estimated will be roughly 145 $MtCO_2/a$[6]; effectively weakening the EU's target by 3.0% (compare "Kyoto targets" with "Kyoto emission allowances" in the figure), or 2.6% of 1990 Annex A emissions. The whole LULUCF sector is expected to be a net emissions sink of ~210 $MtCO_2/a$ in 2030 (EC, 2014b), or as much as 4% of

[6] For underlying assumptions, refer to our webpage http://climateactiontracker.org/countries/eu.html

1990 emissions of all sectors. The impact of including LULUCF accounting can be of that order of magnitude, depending on the exact accounting rules. Hence, the impact of including LULUCF accounting on reductions of industrial greenhouse gas emissions could be in the range of 1–4%, of 1990 emissions, depending on the exact accounting rules applied.

During 2015, the EU has an opportunity to clarify the magnitude of the impact of LULUCF accounting. One way to guarantee reductions in other sectors would be that the EU specifies that the "at least 40% domestic emission reductions" apply only to industrial greenhouse gas emissions (Kyoto protocol Annex A sources and gases), and would be achieved irrespective of LULUCF accounting rules.

Although it is recognised that a move towards biomass/biofuel systems will create further pressure on greenhouse gas inventory systems, and that appropriate incentives need to be included so that all relevant emissions of non-CO_2 greenhouse gases, as well as changes in carbon stocks on the EU28 land surface due to these activities, are counted in considering energy system emissions, it is not yet clear how this will be done.

The EU's fair share

The EU's INDC is rated Medium. The CAT has rated all government action on their 2025 emissions level (if they have post-2020 commitments). However, the EU didn't provide one along with their 2030 INDC, nor state its emissions levels in 2025. Therefore, while we rate the EU medium, on the graph, the rating sits close to "inadequate". The INDC text provides further information on the EU's views on its fair share and its emissions reduction targets. First, the EU states that "the target represents a significant progression beyond its current undertaking of a 20% emissions reduction commitment by 2020 compared to 1990". Indeed, the proposed INDC target will make no use of international credits as it refers to domestic emission reductions, whilst the 2020 target did. Moreover, the INDC is broadly consistent with the 2050 target, which reinforces EU's intent to reduce its emissions by 80–95% by 2050 compared to 1990. However, the current 40% target does not yet fully take into account equity and fairness considerations. Under a "fair share" calculation, the EU needs to make deeper domestic reductions than it currently proposes in its INDC.

Current policy projections

Emissions in the EU28 have been on a decreasing trend since 1990. In 2012, emissions (excl. LULUCF) were 19% below 1990 levels. After a steep decline in 2009 due to the recession and an upward spike following the recovery in 2010, they dropped again until 2012.

According to our analysis, the future emissions projections under the EU's currently implemented policies continue the past downward trend with similar, or slightly reduced, reduction rates each year, depending on which end of the range one is looking at. While emissions decreased by an average of 0.9% per year between 1990 and 2012, they are projected to decrease between 0.5% and 1.2% per year up to 2020, and between 0.1% and 1% per year until 2030. Emissions are estimated to be between 4,115 $MtCO_2e$ and 4,374 $MtCO_2e$ (a 22-27% reduction below 1990) in 2020 and between 3,681 $MtCO_2e$ and 4,317 $MtCO_2e$ (23-35% below 1990) in 2030.

Current policy projections include all major EU policies implemented, including the EU ETS, the Effort Sharing Directive and a wide range of other EU wide regulations influencing GHG emissions such as the renewable energy directive. It also includes the most important national policies.

Several new policy developments took place at EU level since last year's assessment. These include binding emission targets for new car and van fleets, a new regulation on fluorinated gases, and further implementation of the Ecodesign legislation for boilers and water heaters

(EEA, 2014). With these policies, the EU still has one of the most comprehensive climate packages globally.

The framework for the EU on the 2020 timeframe has been its '2020 energy and climate package', which lays the basis for the 20% by 2020 from 1990 levels Copenhagen Accord pledge. Framed as the 20-20-20 target, it contains a 20% target for renewable energy, a 20% target for energy efficiency and a 20% GHG emissions reduction target.

Analysis has shown that these targets are internally inconsistent; implementing the RE as well as the EE target leads to an emission reduction of 30% rather than 20% (Höhne et al. 2011). For 2020 the EU is on track to meet its emissions reduction target (current projections foresee emissions reducing by 22% - 27%), also its renewables target, but not yet the energy efficiency target.

The main development in the EU in 2014 was the creation of a framework for 2030. Under the EU '2030 framework for climate and energy policies', the European Commission proposed a package of targets, including the above mentioned GHG target of 40% (this target now being the formally submitted INDC), a renewable energy target of 27% and an energy savings target.

The energy savings target for 2030 was introduced following a review of the Energy Efficiency Directive and originally included a proposal by the Commission to reduce energy use by 30%. However the European Council then only endorsed a target of 27%. In 2020 it will reconsider this 30% target proposed by the European Commission (EC,201A). Given that the GHG emissions reduction target of 40% below 1990 was defined based on the assumption of a 30% energy efficiency target, this potentially undermines the achievement of the GHG target.

The EU ETS is one of the EUs' most important instruments to help it achieve its 2020 and 2030 emissions reduction targets. By the end of 2012, the EU ETS had accumulated a surplus of emissions allowances of app. 1.8 GtCO2 (EEA 2014). The EU's own calculations show this surplus is expected to grow to 2.6 GtCO2 by 2020 - larger than the EU's ETS cap for the year 2013. The introduction of this surplus could dilute the 40% GHG target by 7% in 2030 if theses allowances are increasingly used right up until 2030 (Höhne et al 2013). The EU agreed to introduce a so-called "market stability reserve" that aims to address this surplus issue. It is therefore important that the EU creates a robust market reserve that allows it to stay in line with the 40% GHG target.

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