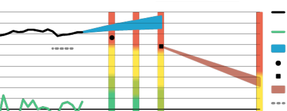
# CLIMATE ACTION TRACKER

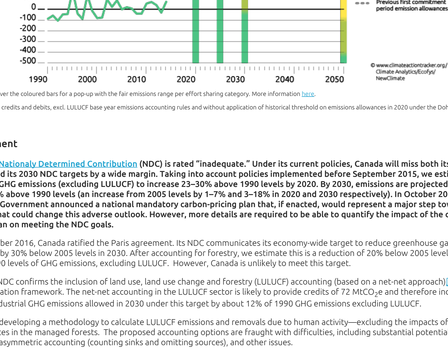
## Canada

History: 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011

Page last updated: 2nd November 2016

### Rating




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

*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

**Canada's** Nationaly Determined Contribution **(NDC) is rated "Inadequate." Under its current policies, Canada will miss both its 2020 pledge and its 2030 NDC targets by a wide margin. Taking into account policies implemented before September 2015, we estimate that Canada's GHG emissions (excluding LULUCF) to increase 23–30% above 1990 levels by 2020. By 2030, emissions are projected to increase by 26–44% above 1990 levels (an increase from 2005 levels by 1–7% and 3–18% in 2020 and 2030 respectively). In October 2016, the new Canadian Government announced a national mandatory carbon-pricing plan that, if enacted, would represent a major step towards policies that could change this adverse outlook. However, more details are required to be able to quantify the impact of the carbon-pricing plan on meeting the NDC goals.**

On 5 October 2016, Canada ratified the Paris agreement. Its NDC communicates its economy-wide target to reduce greenhouse gas (GHG) emissions by 30% below 2005 levels in 2030. After accounting for forestry, we estimate this is a reduction of 20% below 2005 levels and 3% below 1990 levels of GHG emissions, excluding LULUCF. However, Canada is unlikely to meet this target.

Canada's NDC confirms the inclusion of land use, land use change and forestry (LULUCF) accounting (based on a net-net approach)[1] in its 2030 GHG mitigation framework. The net-net accounting in the LULUCF sector is likely to provide credits of 72 $MtCO_2e$ and therefore increases the level of industrial GHG emissions allowed in 2030 under this target by about 12% of 1990 GHG emissions excluding LULUCF.

Canada is developing a methodology to calculate LULUCF emissions and removals due to human activity—excluding the impacts of natural disturbances in the managed forests. The proposed accounting options are fraught with difficulties, including substantial potential for double counting, asymmetric accounting (counting sinks and omitting sources), and other issues.

While Canada has withdrawn from the Protocol, and is not a party to its second commitment period, Canada could apply the Kyoto Protocol rules and thereby alleviate a number of substantial concerns about their proposed LULUCF accounting options.

#### Footnotes

[1] Net/net accounting approach takes the difference between the total net GHG flow from LULUCF in a given year and that in a defined base year which is accounted for in the country's GHG balance (EC, 2009).

## Pledges and targets

#### Paris Agreement target

Canada's NDC states that it will pursue an economy-wide target to reduce GHG emissions to 30% below 2005 levels by 2030. Canada has indicated that it may also use international credits to meet its target. Considering the upward trajectory of the current policy projection against the pledge trajectory, Canada would need to use a large quantity of international credits to meet its target.

Canada intends to use a "net-net" approach to account for LULUCF emissions, and a production approach to account for harvested wood products. Accounting for Harvested Wood Products (HWPs) must be performed in a consistent and compatible manner across countries so that accounting of imported and exported HWPs is complete and emissions are not excluded from inventories. It excludes emissions from natural disturbances (e.g. forest fires and insect outbreaks).

In its NDC, Canada does not quantify the impact of these accounting rules on emissions levels for compliance in 2030. According to our best estimate, based on available data, the net-net accounting approach for LULUCF emissions will generate 72 $MtCO_2e$ of credits for Canada in 2030 (see assumptions for further details). Using LULUCF credits weakens the NDC, as these credits can be used to offset emissions increases in other sectors such as energy and industry. We estimate the level of emissions under the 2030 target, excluding LULUCF, at 583 $MtCO_2e$. This is different from the target of 524 $MtCO_2e$ stated in the Second Biennial Report (BUR) because it takes into account net-net accounting and LULUCF credits. We estimate this target is a reduction of 20% below 2005 and 3% below 1990 levels of GHG emissions excluding LULUCF.

| **Kyoto Protocol (KP)** | |
|---|---|
| Member of KP CP1 (2008–2012) | withdrawn |
| Member of KP CP2 (2013–2020) | no |
| KP CP1 target (below base year) | 6% below 1990 |
| KP CP2 target (below base year) | none |
| **Copenhagen pledge** | |
| 2020 target | 17% below 2005 by 2020 [11% above 1990 by 2020 excl. LULUCF] |
| **Paris Agreement target** | |
| Ratified | Yes |
| 2030 target | 30% below 2005 by 2030 [3% below 1990 by 2030 excl. LULUCF] |
| Coverage | Economy wide, incl. LULUCF |
| LULUCF | net-net approach (excluding emissions from natural disturbances) |
| **Long term goal** | |
| Long-term goal | 50% below 1990 by 2050 |

Canada is currently developing a methodology to calculate LULUCF emissions and removals due to human activity - excluding the impacts of natural disturbances in the managed forests (Government of Canada, 2016). The accounting options that Canada proposes using are fraught with difficulties, including substantial potential for double counting, asymmetric accounting (counting sinks and omitting sources), and other issues. The Kyoto Protocol rules provide the only current rigorous framework for managing these risks, including taking account of factors such as salvage logging emissions, land-use changes following a natural disturbance, international coordination of HWP accounting etc. While Canada has withdrawn from the Protocol, and is not a party to its second commitment period, Canada could apply the Kyoto Protocol rules and thereby alleviate a number of substantial concerns about their proposed LULUCF accounting options.

#### 2020 pledge and Kyoto target

Canada's Kyoto Protocol target for the first commitment period 2008–2012 was a reduction of 6% below 1990 levels. However, in December 2011, Canada withdrew from the Kyoto Protocol. In 2012, Canada subsequently reported an emissions increase of 18% above 1990 levels.

Canada's Copenhagen pledge, which aims to reduce emissions by 17% below 2005 levels by 2020 (11% above 1990 levels), weakens its previous Kyoto target. The Copenhagen commitment, based on 2005 levels, aligned Canada's level of ambition to the United States, which also targets a 17% reduction in emissions from 2005 levels by 2020.

Canada's Copenhagen pledge also excludes emissions from natural disturbances from the reference level and from the commitment period's cumulative emissions, and supports accounting for removals from harvested wood products [1]. More details and clarifications from Canada on LULUCF Forecasts, and assumptions on how natural disturbances are treated, would improve transparency on both the 2020 and NDC pledges.

#### Long-term goal

In 2007 Canada proposed a long-term target of reducing emissions by 60 - 70% below 2006 levels by 2050 (equivalent to 52% to 64% below 1990 levels). However, this was an aspirational target that was never enshrined into legislation, and there is no new information on this target.

While Canada has withdrawn from the Protocol, and is not a party to its second commitment period, Canada could apply the Kyoto Protocol rules and thereby alleviate a number of substantial concerns about their proposed LULUCF accounting options.

#### Footnotes

[1] See FCCC/KP/AWG/2010/18/Add.1 (paragraphs 27-28, page 34) for details on accounting for harvested wood products.

## Fair share

On the basis of effort-sharing approaches, Canada's NDC is rated "inadequate". The "inadequate" rating indicates that Canada's commitment is not in line with interpretations of a "fair" approach in line with holding warming below 2°C, let alone with the Paris Agreement's stronger 1.5°C limit. This means that if most other countries were to follow Canada'sapproach, global warming would exceed 3–4°C. In order to be consistent with most effort-sharing approaches and rated "sufficient," Canada needs to set a more ambitious 2030 goal of reducing industrial GHG emissions by at least 73% below 2005 levels (67% below 1990 levels).

We also rate Canada's 2020 pledge as "inadequate." A more ambitious pledge would be in line with multiple effort sharing approaches, including the capability and responsibility approaches, and could upgrade Canada into the "medium" category. We rate Canada's long-term, 2050 target to reduce emissions by 60-70% below 2006 levels (equivalent to 52- 64% below 1990 levels) as "medium." This pledge is in line with approaches that focus on capability. According to multiple effort sharing approaches, to reach a fair share of emissions reductions, Canada's emissions would need to be negative by 2050.

## Current policy projections

With policies implemented before September 2015, Canada will reach GHG emissions excluding LULUCF of 738–780 $MtCO_2e$ in 2020: an increase of 23–30% from 1990 levels. In 2030, emissions are projected to increase by 26–44% above 1990 levels to 754–863 $MtCO_2e$.

Canada's emissions have shown an upward trend from 1990–2007, reaching their highest levels at 741 $MtCO_2e$ in 2007. At the beginning of the financial crisis, emissions dropped significantly. In the period 2010–2012, emissions remained fairly stable at around 700 $MtCO_2e$. With currently implemented policies, emissions are projected to show an upward trend again.

Canada has various policies in place to reduce emissions. Fuel economy standards for light and heavy duty vehicles are aligned with federal-level regulations in the US, becoming progressively more stringent. The second phase of the light duty vehicle standards has potential to reduce emissions below business as usual. Canada has also implemented a regulation requiring a renewable fuel content of 2% for diesel and 5% for gasoline.

A performance standard for new coal-fired power plants came into force on July 1, 2015, limiting emissions intensity to 420 $tCO_2$/GWh. Since the standard applies to new power plants, and given the current poor investment environment for new coal power, it implies no significant emissions reduction against business as usual by 2020. The standard also applies to the plants that have reached their useful end of life. In general, it means ageing, 50 year old units, and the first of the existing power plants commissioned before 1975, will not be subject to the performance standard until 2020. Saskatchewan's Boundary Dam CCS project is the world's first and largest commercial-scale coal-fired CCS project. It has the capacity to capture 90% of its GHG emissions, which amounts to around 1 $MtCO_2eq$/year (Government of Canada, 2016). While some of the $CO_2$ will be stored, most of the captured $CO_2$ will be used for enhanced oil recovery (Global CCS Institute, 2016). Canada has also invested over C$10 billion in clean energy technologies over the past decade.

Policies are also under development to drive further emissions reductions. These policies will target the emissions of new heavy-duty vehicles post-2018, reducing emissions from natural gas-fired electricity, chemicals and nitrogen fertilizers, and methane emissions from the oil and gas sector (Government of Canada, 2015). Canada also intends to gradually phase-down HFC emissions. This is a significant move, as HFC emissions in Canada have increased tenfold over the period from 1990–2012.

In October 2016, Canada announced its national mandatory carbon pricing plan which requires all Canadian provinces and territories to either introduce a carbon cap and trade system, or place a direct price on carbon by 2018. The carbon price should meet the federal benchmark or floor price; starting at a minimum of CAD 10/tonne in 2018 and reaching CAD 50/tonne by 2022. For provinces and territories that do not adopt a system by 2018, the government would step in and impose a price for them. This is a positive development that could result in emission reductions. However, more details are required to be able to quantify the actual impact.

## Assumptions

#### Pledge and historical emissions

Pledges were calculated from historical data obtained from the UNFCCC GHG inventory (CRF, 2016).

Based on the NDC text, we assume that the LULUCF sector will be treated separately from other sectors. The 2030 contribution is therefore calculated as a 30% reduction in GHG emissions excluding LULUCF, with subsequent addition of credits from the LULUCF sector. We estimate credits from the LULUCF sector according to net-net accounting of LULUCF emissions excluding natural disturbances. LULUCF emissions excluding natural disturbances in 2005 are according to CRF (2016) data with reported emissions from wildfires discounted.

Projected LULUCF emissions for 2020 and 2030 are from Canada's sixth national communication (Government of Canada, 2014). Uncertainty in LULUCF emissions is high, and further clarity on the 2005 emissions excluding natural disturbances would improve our estimates (currently, as proxy we deduct emissions from wildfires from total emissions for the land-use category reported under CRF for 2005). Further, our calculations currently omit production-based accounting of harvested wood products. Contributions from LULUCF sector for 2020 and 2030 are calculated by taking the difference of emission projections for these years from the 2005 baseline, which is obtained from CRF (2016). However, the national communication projection indicates an increasing sink from 2005 to 2030 in this sector and therefore accounting generates credits and allows higher GHG emissions excluding LULUCF.

Canada has applied global warming potentials (GWPs) from the IPCC Fourth Assessment Report (AR4) in its projections from 2014–2030 reported in its second biennial report. For consistency with the historical data, obtained from CRF (2016) with other elements of our analysis we calculated the target and the projections based on GWPs from the IPCC Second Assessment Report (SAR). The graph included in the NDC is also based on SAR GWPs. An analysis based on AR4 GWPs would not significantly change the emission trend shown or rating given.

#### Current policy projections

The current policy projections from 2014 to 2030 were obtained from Canada's Second Biennial Report (Government of Canada, 2016). The report presents projections considering future impacts of policy measures enacted up to September 2015 (Government of Canada, 2016). It presents three scenarios (low emissions scenario, reference scenario and high emissions scenario) reflecting different assumptions about oil and gas prices, GDP growth rate and population growth. Due to uncertainty in GDP growth rate, population growth rate and oil and gas prices, The Climate Action Tracker shows the current policy pathway as a range based on the low and high emission scenarios. Canada has recently introduced its national carbon pricing plan, to be implemented by provinces and territories by 2018. This is a positive development towards achieving Canada's post-2020 targets. It is not, yet clear how much this plan would contribute to reducing national emissions. This policy is not quantified in our current policy projections, as more details of the plan would be needed for this purpose.

## Sources


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