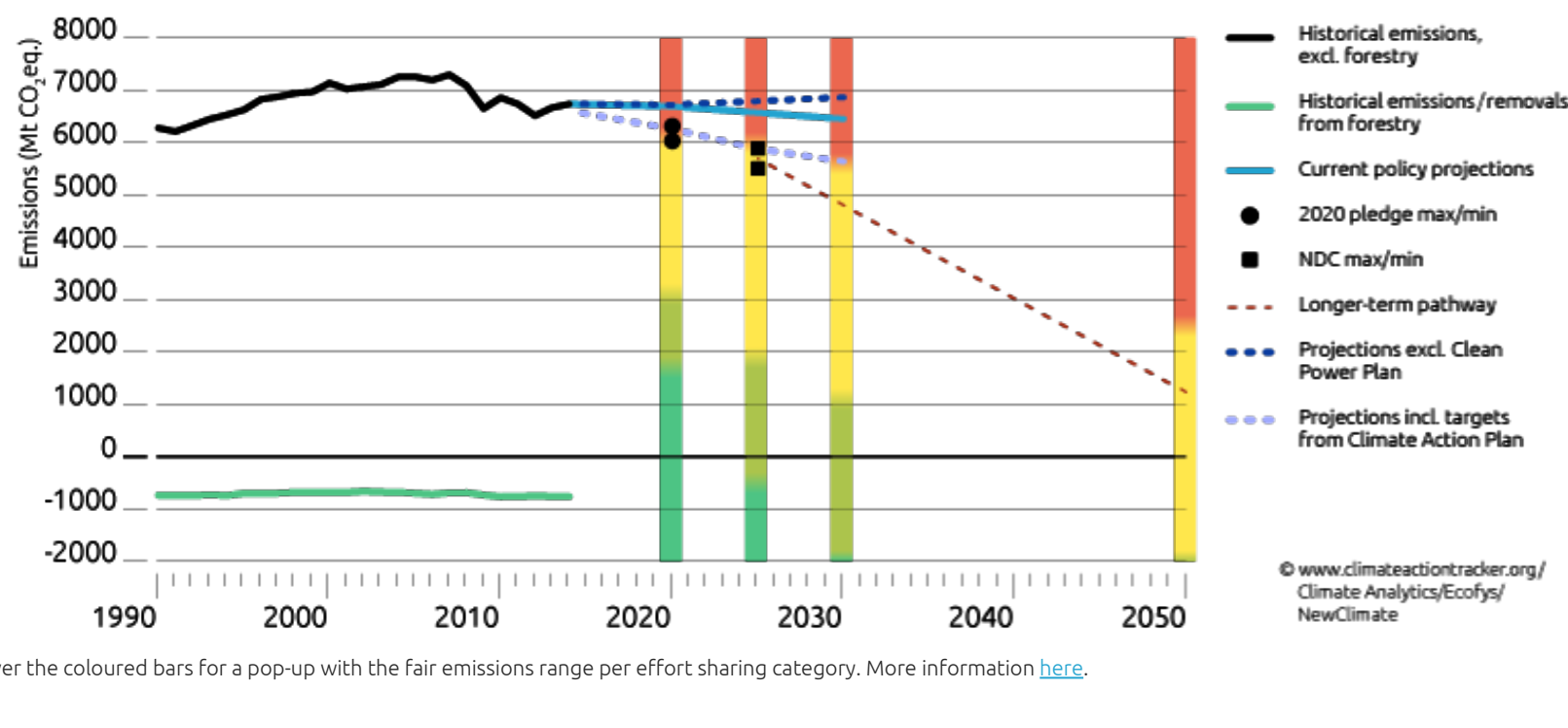




Rating



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

Assessment

The United States needs to fully implement the Clean Power Plan and the Climate Action Plan if it is to meet the top end of its 2025 NDC emissions reduction commitment of 26–28% below 2005 levels incl. LULUCF (19–24% below 2005 excluding LULUCF, which translates to 6–12% below 1990 excluding LULUCF). Current policies in the US would only reduce emissions by 9% by 2025 below 2005 levels (5% above 1990 levels). The NDC commitment itself is not yet consistent with limiting warming to below 2°C, let alone with the Paris Agreement's stronger 1.5°C limit. The recent upward revision of net forest sink projections negatively affects the stringency of the NDC on energy and industry-related emissions, reducing the emissions reductions required to meet the target by 4–5 %-points. It is very important that the US Administration secures full implementation of the Clean Power Plan and fully implements its Climate Action Plan policies to reach its proposed targets, which fall short of what is required.

On 3 September 2016, the US ratified the Paris Agreement and its Intended Nationally Determined Contribution became its **Nationally Determined Contribution (NDC)**. Under its NDC, the US aims to reduce net GHG emissions by 26–28% below 2005 in 2025 including land use, land use change and forestry (LULUCF) (equivalent to 19–24% below 2005 levels excluding LULUCF, and equivalent to 6–12% below 1990 levels excluding LULUCF). The US's NDC clearly highlights ongoing actions to enhance the regulatory framework, so the achievement of the 2020 and 2025 targets seems feasible. Further positive aspects of the document are the 2025 timeframe for the NDC, a clear description of accounting rules and other assumptions, and the coverage of the complete economy and all gases.

An area of potential concern is the net-net accounting approach, meaning the targets are set against base year emissions including emissions and removals from the land sector. The uncertainty in the land sector, and the large fluctuations reported, indicate some uncertainty in the reduction of GHG emissions excluding emissions from the land sector. Changes in methodology increase the projected sinks in the land sector as reported in the 2nd Biennial Report compared to the 6th National Communication, making it 4–5 %-points easier for the US to meet its future targets.

Pledges and targets

Paris Agreement targets

The US NDC sets a target of reducing its emissions by 26% to 28% below 2005 levels by 2025, including LULUCF. This is consistent with a linear interpolation between the 2020 pledge and the national long-term 2050 target, and is set on a net-net accounting basis.^[1]

The impact of the NDC on reducing GHG emissions (excluding LULUCF) is unclear, due to uncertainties in the estimate of land sector removals and in the projections for these removals in 2020 and 2025. Based on the data in the US's 2nd Biennial Report (U.S. Department of State 2016a), we estimate that the 26–28% reduction target in net emissions would likely result in a range of 19–24% reduction in GHG emissions excluding LULUCF below 2005 levels, depending on whether the sink from LULUCF is at the high or low end of the projections. The impact of LULUCF on the gross emissions reduction target is higher than in our previous analysis, because of a data update: the previous update referred to the 6th National Communication of the US, which reported sinks of 0.6–0.9 GtCO₂e/a in 2025, while the updated dataset in the 2nd Biennial Report reports a sink of 0.9 to 1.2 GtCO₂e/a in the same year. In other words, methodological changes have increased the sink from forest and land use by about 4.3% to 5.1 %-points compared to the total emission level in the base year, 2005, rendering the target for the remaining sectors 3.9% to 4.6 %-points easier to achieve.

Additionally, the same methodology update decreased the sink in the base year and the US benefits from using updated Global Warming Potentials. Overall, this data update contributes 6.4–7.1 %-points to achieving the NDC target.^[2]

2020 pledge and Kyoto target

The United States is not a Party to the Kyoto Protocol. While a target of a 7% reduction below 1990 from 2008–2012 was originally negotiated and agreed, the US never ratified the Protocol and the target therefore never came into force.

Under the Copenhagen Accord, the US announced an emissions reduction target of 17% below 2005 levels, around 0 to 4% below 1990 levels exc. LULUCF, by 2020. The US stated this was in line with its long-term goal of reducing emissions by 83% below 2005 by 2050 (United States Department of State, 2010).

Footnotes

[1] The NDC states that the USA "intends to include all categories of emissions by sources and removals by sinks, and all pools and gases, as reported in the Inventory of United States Greenhouse Gas Emissions and Sinks; to account for the land sector using a net-net approach; and to use a "production approach" to account for harvested wood products consistent with IPCC guidance. The United States may also exclude emissions from natural disturbances, consistent with available IPCC guidance."

[2] Note that the decreased sink in the base year as well as the updated GWPs are not reflected in the CAT illustration, as we use CRF data and continue our calculations with GWPs from the Second Assessment Report.

Fair share

We rated the US NDC "medium." The "medium" rating indicates that the NDC is at the least ambitious end of what would be a fair contribution. This means it is not consistent with limiting warming to below 2°C, let alone with the Paris Agreement's stronger 1.5°C limit, unless other countries make much deeper reductions and comparably greater effort. The target for 2025 is in line with some effort sharing approaches that focus on capability and costs. Approaches that focus on equal cumulative emissions and historic responsibility would require much more stringent reductions and partially result in negative emission allowances in all years. This presents an improvement in comparison to previous assessments (see earlier years), where those approaches were not taken into account.

We rated the 2020 pledge as "inadequate," as it is in line only with the least stringent effort sharing categories (capability/costs). The long-term, 2050 target would be in the "medium" range. The "inadequate" rating indicates that the 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 followed the US's approach, global warming would exceed 3–4°C.

Current policy projections

The US is expected to achieve emissions levels of approximately 6.69 GtCO₂e in 2020 — around 8% below 2005 or 7% above 1990 (GHGs excluding LULUCF); and around 6.45 GtCO₂e in 2030 — around 11% below 2005 or 3% above 1990 (GHGs excluding LULUCF). For the NDC target year 2025, projected current policy emissions result at 6.57 GtCO₂e in 2025 — around 9% below 2005 or 5% above 1990.

An important step in strengthening US climate action is the successful implantation of the "Clean Power Plan" ("CPP"), first proposed in 2014 and announced as a final rule in August 2015 after an extended phase of public consultation. It aims to reduce emissions from the power sector by 32% below 2005 levels by 2030, by setting targets for each state individually. The states can then choose how to meet the target, e.g. by increasing the share of low-carbon electricity generation or demand side efficiency. An effective and stringent implementation of the CPP would contribute significantly to moving towards the pledged emissions level. The measures implied may prevent a reversal of the shift from coal to gas due to changing market conditions. Consequently, the CPP could potentially make a significant difference of 0.41 GtCO₂e in 2030 compared to a scenario without the CPP, which equals to about 6% of 2005 emissions (7% of 1990 emissions). However, the CPP was blocked by the U.S. Supreme Court in February 2016 and, as of October 2016, its legal status remains uncertain (Bloomberg 2016).

Our analysis defines the current policy projections as including the CPP, despite the court proceedings blocking its implementation. If the CPP were to be permanently stopped, emissions projections would be significantly higher and we would see an increasing trend over the next decade, at around 6.72 GtCO₂e/a in 2020 or 7.4% below 2005 levels, 6.79 GtCO₂e/a in 2025 (6.4% below 2005 levels) and 6.87 GtCO₂e/a in 2030 (5.4% below 2005 levels).

It remains open to individual states as to how they will meet their CPP obligations. It is possible that, if they were obliged to adopt a higher share of renewable energy through another instrument, they might implement fewer energy efficiency measures or other low-carbon technologies and not necessarily overachieve the targets under the CPP.

Under the current policy scenario, the US is unlikely to achieve its 2020 pledge or its NDC, even with the expected mitigation impact from the CPP. If the additional measures outlined by the White House in "The President's Climate Action Plan" (CAP) in June 2013 (The Executive Office of the President 2013) were implemented, the US would achieve its 2020 pledge as well as its NDC target. But not all the measures are yet in place and being implemented (see below).

The achievement of the mitigation targets can also depend on the level of sinks coming from LULUCF: the 2nd Biennial Report projects that, in 2020, the US LULUCF sector's sinks will absorb between 1.044 and 1.191 GtCO₂e, 0.908 to 1.201 GtCO₂e in 2025, and 0.689 to 1.118 GtCO₂e in 2030 (in AR4 GWP terms). The projection on the net LULUCF sink has been revised upward from the 1st Biennial Report/6th National Communication (United States of America 2014). There is high uncertainty in these projections, and the final level in future years could have an impact on whether the targets will be achieved. If the sink becomes larger than expected in the projections, it will be easier to meet the target. If the sink becomes smaller, even more policies in non-LULUCF sectors would be required.

Changes in the use of Global Warming Potentials from the 6th National Communication which used the Second Assessment Report of the IPCC to the 2nd Biennial Report which uses the 4th Assessment Report also influence the achievement of the target: the US has reduced methane emissions significantly since their base year 2005. Using GWPs from the 4th Assessment Report, these reductions up to date weigh more, and thus makes it easier to achieve the target.

Historically, US emissions constantly increased between 1990 and 2007. The financial crisis from 2008 saw emissions drop. In 2010 they began to increase again, but 2011 and 2012 saw a downward pressure, mainly resulting from a strong shift to natural gas as an energy source and a decrease in total energy demand. In the US, a variety of activities to address emissions are taking place in all sectors at both at State and Federal levels. However, 2013 again saw an increase in total GHG emissions.

Besides the Clean Power Plan, an important aspect of the CAP is its aim to increase energy efficiency in demand sectors, where it foresees, for example, energy efficiency standards for appliances and federal buildings, different financial incentives, and energy saving measures in federal agencies. Not all activities in the plan have been clearly defined, nor implemented. An overarching target included in the plan is to double energy productivity by 2030 compared to 2010 levels.

A few areas targeted by the CAP have seen concrete activities. An Executive Order from 19 March 2015 on "Planning for Federal Sustainability in the Next Decade" commits Federal agencies to a number of actions, reducing Federal Government GHG emissions by 40% by 2025 below 2008 levels (The White House 2015b). We have included this element in our current policy projections.

The CAP also mentions reducing methane emissions. In January 2015, the US EPA introduced a target to reduce methane emissions from oil and gas production by 40% to 45% by 2025 below 2012 levels, and outlined a set of actions to achieve this target building on prior activities by the Administration (The White House 2015a).

According to our assessment, complying with the CAP targets would reduce emissions to 6.26 to 6.27 GtCO₂e in 2020 (about 14% below 2005 or 0%–1% below 1990), 5.88 to 5.89 GtCO₂e in 2025 (about 19% below 2005 or 6% below 1990) and 5.64 to 5.67 GtCO₂e in 2030 (about 22% below 2005 or 10% below 1990). This would put the US not only on a trajectory to meet its 2020 target (upper end of the range excluding LULUCF) but also the NDC for 2025 (upper end of the range excluding LULUCF).

The CAP also mentions controlling HFCs, and emissions from LULUCF, which need further refinement and have not been evaluated at this time.

Another area of the CAP which is already being addressed are renewable energy technologies: the process of permitting installations of renewable energy systems on public land has been modified, which made it less complicated to prioritise renewable energy (U.S. Department of the Interior 2013b). Also, the auctioning of renewable energy projects is now an established process, which can accelerate renewables development (see for example U.S. Department of the Interior 2013a).

The Government has also issued various energy efficiency standards (Office of Energy Efficiency & Renewable Energy 2015) whose effects are partially included in the Annual Energy Outlook (AEO) 2016 and thus also in our current policy projections. The standards for volatile organic compounds from oil and gas industry issued in 2012 contribute to achieving the methane target and are also included in the scenario including implemented policies.

In April 2015, the US Department of Agriculture announced the USDA's "Building Blocks for Climate Smart Agriculture & Forestry" (USDA 2015). It foresees a set of voluntary activities involving farmers and companies. The measures target reductions in emissions from agriculture (e.g. improved fertiliser use and other agricultural practices, avoiding methane from livestock) and land use and forestry (e.g. improved soil management, avoid deforestation and reforestation).

Planned — but not yet implemented — activities are not included in our projections of emissions with implemented policies, as these will depend on future decisions and actions. However, the framework being created at the moment is crucial for the US to prepare future actions, and demonstrates that the US government is creating opportunities to push forward climate change policies. These include the "North American Climate, Clean Energy, and Environment Partnership Action Plan" announced by Canada, Mexico and the US in June 2016 (The White House 2016). One of the important targets of this tripartite partnership is to increase the share of clean power generation up to 50% by 2025, including renewable, nuclear, and carbon capture and storage technologies. Further, State action is an important driver of US climate policies, and dynamics on that level may lead to further reductions.

Assumptions

Pledge

Historical emissions are inventory submissions to the UNFCCC, reported in the Common Reporting Format (CRF 2016).

Targets for 2020 and 2025 were calculated from the national inventory submissions of 2016. To compare and sum up different gases on a common basis, the reported data were converted into terms of global warming potentials (GWPs) from the IPCC Second Assessment Report. This differs from the illustration of the targets in the US' 2nd Biennial Report (U.S. Department of State 2016b), which uses GWPs from the IPCC Fourth Assessment Report (U.S. Department of State 2016b), which uses GWPs from the IPCC Fourth Assessment Report (U.S. Department of State 2016b), which uses GWPs from the IPCC Fourth Assessment Report.

For both the 2020 pledge and the NDC, we apply the indicated reduction to the 2005 inventory data for 2005 including LULUCF, and then subtract the projected emissions for the LULUCF sector. The LULUCF emission projections up to 2030 were calculated by applying the future growth rates from the 2nd Biennial Report to the aforementioned 2016 inventory data (in SAR GWP terms).

The US' long-term goal is to reduce its GHG emissions by 83% from 2005 levels by 2050 (UNFCCC 2011).

Current policy projections

The current policy projection was done in four steps. First, energy-related CO₂ emissions projections were taken from EIA's Annual Energy Outlook 2016 (EIA 2016). The Annual Energy Outlook contains two scenarios: The reference case and the reference case without the Clean Power Plan. Second, industrial process CO₂ emissions were projected by applying the future growth rates observed for industrial process GHG emissions in the 2nd Biennial Report to the latest inventory data (CRF 2016). Third, other GHG emission projections were taken from the 2nd Biennial Report (U.S. Department of State 2016b) after conversion to SAR GWP terms. For HFCs and PFCs, the values were converted to SAR GWP terms by applying a correction factor derived from 2010 data reported in the 2014 inventory report (using SAR GWPs) and 2016 inventory reports (using AR4 GWPs). Fourth, all the aforementioned emissions were aggregated and then harmonized to historical data.

The estimated emissions levels with and without the Clean Power Plan are slightly higher than in our last year's assessment, partly due to the increase of emissions in 2013 and 2014 from 2012 levels as well as to the updated impact assessment in the updated Annual Energy Outlook report.

To calculate the impact of the Climate Action Plan, we focus on two economy wide objectives:

- to double energy productivity (defined as GDP per energy use) by 2020 in comparison to 2010
- to double electricity generation from solar, wind and geothermal by 2030 in comparison to current status (2013).

The starting point for the calculations are again the Annual Energy Outlook, from which we subtract the reductions implied through the targets. Energy productivity is defined as GDP per energy use.

Sources

Bloomberg, 2016. [Obama's Clean Power Plan Heads to Court: What to Know](#). [Accessed October 7, 2016].

CRF, 2016. UNFCCC AWG-KP Submissions 2016. Common Reporting Format.

EIA, 2016. Annual Energy Outlook 2016, Washington DC, USA: Energy Information Administration, U.S. Department of Energy.

Office of Energy Efficiency & Renewable Energy, 2015. Recent Federal Register Notices,

The Executive Office of the President, 2013. The President's Climate Action Plan,

The White House, 2015a. FACT SHEET: Administration Takes Steps Forward on Climate Action Plan by Announcing Actions to Cut Methane Emissions,

The White House, 2015b. FACT SHEET: Reducing Greenhouse Gas Emissions in the Federal Government and Across the Supply Chain,

U.S. Department of State, 2016a. Second Biennial Report of the United States of America Under the United Nations Framework Convention, Washington DC, USA: The White House, 2016a.

U.S. Department of State, 2016b. Second Biennial Report of the United States of America Under the United Nations Framework Convention,

U.S. Department of the Interior, 2013a. Interior Holds Second Competitive Lease Sale for Renewable Energy in Federal Waters,

U.S. Department of the Interior, 2013b. Land Management Rule Will Facilitate Renewable Energy Development on Public Lands,

UNFCCC, 2011. Compilation of economy-wide emission reduction targets to be implemented by Parties included in Annex I to the Convention,

United States of America, 2014. Sixth National Communication of the United States of America: First Biennial Report of the United States of America. First Biennial Report of the United States of America.

USDA, 2015. [Building Blocks for Climate Smart Agriculture and Forestry](#). [Accessed September 2, 2015].

