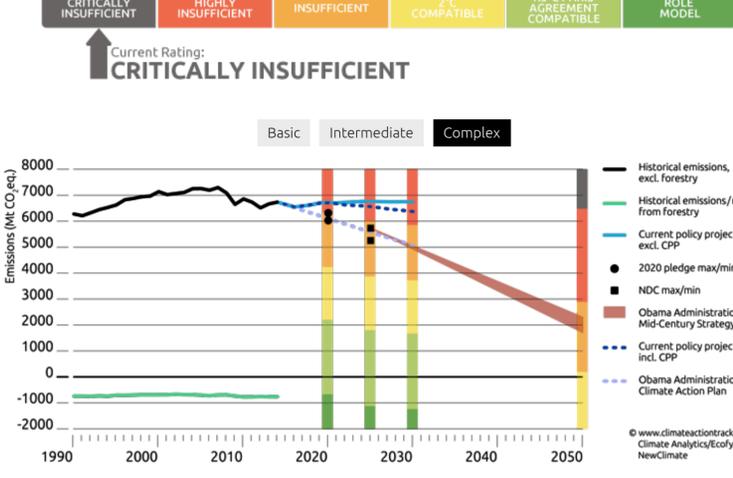




## Rating



## Assessment

On 1 June 2017, President Trump announced that the United States would pull out of the Paris Agreement, unless it could identify suitable terms for reengagement. On 4 August 2017, the US formally communicated its intent to withdraw to the UN. These steps represent a severe backwards move and an abrogation of the United States' responsibility as the world's second largest emitter at a time when more, not less, commitment is needed from all governments to avert the worst impacts of climate change. Based on its intent to withdraw from the Paris Agreement, we rate the US "Critically Insufficient."

In addition, significant and highly adverse rollbacks of climate policy are now underway at the federal level in the US. With his [Executive Order](#) on "energy independence" in March 2017, President Trump rescinded the Obama Administration's Climate Action Plan, which was never fully implemented, and was critical to achieving the US NDC. Following up on the order, in October 2017, the EPA officially proposed repealing the Clean Power Plan. The Trump Administration is also considering a new import tariff on solar panels, while Secretary of Energy Rick Perry has [proposed a measure](#) to prolong the life of coal plants scheduled for "premature retirement" through a payment for their grid "resiliency" attributes.

However, in response to federal disruption of climate progress, states, cities, and organisations are stepping up to fill the gap. California will extend its cap and trade system through 2030. Nine northeastern and mid-Atlantic states have agreed on a proposal to lower their cap on carbon emissions from electricity generation by 3% a year. And over 2300 cities, states, tribes, businesses, and universities have signed an open letter pledging to "support climate action to meet the Paris Agreement" through the "We Are Still In" campaign. [New analysis](#) suggests that the full implementation of current recorded and quantified non-federal climate commitments could already take the US halfway toward meeting its NDC commitments (Kuramochi et al., 2017).

These actions are commendable, and will need to be implemented and expanded to put the US on a path toward decarbonisation. Even meeting the NDC target would be "Insufficient" to limit warming to 2°C. Under current state and federal level policies, US emissions are likely to flatten. The CAT rates US current policies "Highly insufficient."

Legally, the US [Nationally Determined Contribution](#) (NDC) remains in place at least until 2019, although the US intends to withdraw it at that time unless it has found suitable terms for reengagement, and the Trump Administration has already stopped implementation. The NDC target is to reduce net GHG emissions by 26–28% below 2005 levels in 2025 including land use, land use change and Forestry (LULUCF) (equivalent to 21–28% below 2005 levels excluding LULUCF, and equivalent to 9–16% below 1990 levels excluding LULUCF). On the CAT rating scale, the US NDC would fall into the "Insufficient" category. This means that it is not yet 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. It is also at the least ambitious end of what would be a fair contribution for the US.

To meet this target, the United States would have had to implement both the Clean Power Plan and the Obama Administration's full Climate Action Plan. The EPA has measured a recent US policy, including the Clean Power Plan, would only reduce emissions to 10% below 2005 levels by 2025.<sup>[2]</sup> The equivalent was proposed under the Clean Power Plan and, if it is indeed stopped, emissions in 2025 are likely to be even higher, at 7% below 2005 levels, halting the downward trend of the last decade.

Also see our [briefing](#) and [overview table](#) to learn more about the potential effect of the Trump Administration on emissions.

## Pledges and targets

### Paris Agreement targets

The US NDC set a target of reducing its emissions by 26% to 28% below 2005 levels by 2025, including LULUCF. Although the Trump Administration has indicated that it intends to withdraw from the Paris Agreement and stop implementation of the NDC, it legally remains in place until 4 November 2019. The target is consistent with a linear interpolation between the 2020 pledge and the Obama Administration's national long-term 2050 target.

The NDC applies to all sectors including forestry (LULUCF). The impact of the NDC on reducing GHG emissions of the sectors other than LULUCF is unclear, due to uncertainties in the estimate of land sector removals and in the projections for these removals in 2020 and 2025. Changes in methodology increase the projected sinks in the land sector as reported in the 2<sup>nd</sup> Biennial Report compared to the 6<sup>th</sup> National Communication, making it 4–5% points easier for the US to meet its future targets.<sup>[1]</sup>

Based on the values in the US's 6<sup>th</sup> National Communication (United States of America, 2014), we estimate that the 26–28% reduction target in net emissions are likely to result in a range of 21–28% 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.

### 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 1% above to 4% below 1990 levels exc. LULUCF, by 2020 (United States Department of State, 2010).

### Long-term goal

As part of the Paris Agreement, all parties should develop and communicate long term strategies for development with low greenhouse gas emissions. On 16 November 2016, the Obama Administration submitted a "Mid-Century Strategy for Deep Decarbonization" (The White House, 2016) in accordance with Article 4. The strategy sets an emissions reduction target of 80% or more below 2005 levels in 2050, incl. LULUCF. This is equivalent to 68–76% below 2005 levels (63–73% below 1990), excl. LULUCF, depending on the magnitude of the LULUCF sinks. The Trump Administration has removed the mid-century strategy from all government websites, and it is unclear if the target still stands.

### Footnotes

[1] For methodological consistency with historical data, CAT uses values from the 6<sup>th</sup> National Communication.

## Fair share

Based on its intent to withdraw from the Paris Agreement, and hence annul its NDC, we rate the US "Critically insufficient."

However, if the CAT were to rate the US NDC commitment (26–28% below 2005 levels incl. LULUCF by 2025), it would be rated "Insufficient." The "Insufficient" rating indicates that the US's NDC in 2025 is not consistent with holding warming to below 2°C, let alone limiting it to 1.5°C as required under the Paris Agreement, and is instead consistent with warming between 2°C and 3°C. If all countries were to follow the US's approach, warming would reach over 2°C and up to 3°C. This means the US's NDC is at the least stringent end of what would be a fair share of global effort, and is not consistent with the Paris Agreement's 1.5°C limit, unless other countries make much deeper reductions and comparably greater effort.

Reaching the NDC target would have required implementing additional policies under the Obama Administration's Climate Action Plan, which President Trump has rescinded.

The NDC target for 2025 could be considered a fair contribution to 2°C only from a very selective perspective. With the perspective that countries have similar emissions reduction costs per GDP (effort sharing approaches that focus on capability and costs), the US NDC could be considered 2°C compatible because costs to reduce emissions in the USA, while keeping the high consumption levels, are high compared to other countries. However, considering the US's high historical emissions, high per capita emissions and high capability to act (approaches that focus on equality, equal cumulative emissions and historical responsibility) the NDC is highly inequitable and much more stringent reductions would be required and partially result in negative emission allowances in all years.

If the CAT were to rate the US's projected emissions levels in 2025 under current policies, we would rate the US "Highly insufficient," indicating that the US's current policies in 2025 are not consistent with holding warming to below 2°C, let alone limiting it to 1.5°C as required under the Paris Agreement, and are instead consistent with warming between 3°C and 4°C: if all countries were to follow the US's approach, warming could reach over 3°C and up to 4°C. This means the US's current policies are not in line with any interpretation of a "fair" approach to the former 2°C goal, let alone the Paris Agreement's 1.5°C limit.

For further information about the risks and impacts associated with the temperature levels of each of the categories [click here](#)

## Current policy projections

An important step in strengthening US climate action would have been the successful implementation 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. However, the U.S. Supreme Court blocked the CPP in February 2016, and President Trump directed the Environmental Protection Agency in March 2017 to review and "as soon as practicable, suspend, revise, or rescind" the guidance and final rules (The White House, 2017). The EPA proposed to repeal the CPP in October 2017 (EPA, 2017).

The CPP aimed to reduce emissions from the power sector by 32% below 2005 levels by 2030, by setting targets for each state individually. The states could 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 could have prevented a reversal of the shift from coal to gas due to changing market conditions. Consequently, the CPP could potentially make a significant difference of 0.37 GtCO<sub>2</sub>e in 2030 compared to a scenario without the CPP, which equals about 5% of 2005 emissions (6% of 1990 emissions, excl. LULUCF). Without the CPP, emissions in 2030 are likely to be similar to emissions in 2014, 7% higher than 1990, and 7% lower than 2005.

Without the CPP, US emissions are expected to level off, reaching approximately 6.72 GtCO<sub>2</sub>e in 2020—around 7% below 2005 or 7% above 1990 (GHGs excluding LULUCF); and around 6.74 GtCO<sub>2</sub>e in 2030—around 7% below 2005 or 8% above 1990 (GHGs excluding LULUCF). For the NDC target year 2025, projected current policy emissions result in 6.76 GtCO<sub>2</sub>e—around 7% below 2005 or 7% above 1990.

With currently implemented policies, and the Clean Power Plan (CPP), we estimate the US to achieve emissions levels of approximately 6.70 GtCO<sub>2</sub>e in 2020—around 8% below 2005 or 7% above 1990 (GHGs excluding LULUCF); and around 6.77 GtCO<sub>2</sub>e in 2030—around 12% below 2005 or 2% above 1990 (GHGs excluding LULUCF). For the NDC target year 2025, projected current policy emissions result at 6.56 GtCO<sub>2</sub>e—around 10% below 2005 or 5% above 1990.

Under the current policy scenario, the US is unlikely to achieve its 2020 pledge or its NDC. If the US were to fully implement the CPP and the additional measures outlined by the Obama Administration in "The President's Climate Action Plan" (CAP) in June 2013 (The Executive Office of the President, 2013), it would achieve its 2020 pledge as well as its NDC target. Although some measures under the CAP have already been implemented, and will require additional effort to repeal or replace, President Trump has rescinded the CAP, meaning that further policies are very unlikely to be implemented. Without the CAP (or alternative policies with comparable ambition) the US will not achieve its NDC targets. In addition, since the beginning of the Trump presidency, the EPA has announced that it will review final performance standards for new power plants, methane emissions standards for oil and gas facilities, and emissions standards for light duty vehicles. If these policies were to be weakened or rescinded, emissions could rise above the current policy scenario. For further information on possible emissions scenarios under the Trump Administration, [see our briefing](#).

Conversely, increased state and local action, in addition to market pressures, may contribute to additional reductions. A first analysis of recorded and quantified commitments from sub-national and non-state actors in the US suggests that these commitments already take the US halfway to achieving its NDC target. The study shows that greenhouse gas emissions could be reduced to 12–14% below 2005 levels (incl. LULUCF) in 2025 with current commitments alone (Kuramochi et al., 2017).

The achievement of the mitigation targets can also depend on the level of sinks coming from LULUCF: the 6<sup>th</sup> National Communication, used in the CAT analysis, projects that the US LULUCF sector's sinks will absorb between 0.614 and 0.898 GtCO<sub>2</sub>e in 2020 (10–17% of NDC target), 0.573 and 0.917 GtCO<sub>2</sub>e in 2025 (10–17% of NDC target), and 0.565 and 0.937 GtCO<sub>2</sub>e in 2030 (10–18% of NDC target) (United States of America, 2014). The 2<sup>nd</sup> Biennial Report revises these numbers, predicting LULUCF sinks of between 1.044 and 1.191 GtCO<sub>2</sub>e in 2020 (18–22% of NDC target), 0.908 to 1.201 GtCO<sub>2</sub>e in 2025 (16–23% of NDC target), and 0.689 to 1.118 GtCO<sub>2</sub>e in 2030 (12–21% of NDC target) (in AR4 GWP terms). These higher values would make it easier to achieve the NDC target. 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 6<sup>th</sup> National Communication which used the Second Assessment Report of the IPCC to the 2<sup>nd</sup> Biennial Report - which uses the 4<sup>th</sup> 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 4<sup>th</sup> Assessment Report, these reductions up to date weigh more, and thus makes it easier to achieve the target.

Besides the Clean Power Plan, an important aspect of the Obama Administration's CAP (now withdrawn) was its aim to increase energy efficiency in demand sectors, where it focuses, 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 were clearly defined, nor implemented. We include two targets from the plan in our analysis of the CAP: an overarching target to double energy productivity by 2030 compared to 2010 levels, and a target to reduce methane emissions from oil and gas production by 40–45% below 2005 levels by 2025 (The White House, 2015). In previous updates, we included a target to double electricity generation from solar, wind, and geothermal sources by 2020 (over 2013 levels). As this target is projected to be achieved under the current policy scenario, we no longer include it in the CAP projections, which quantify the additional impact of the CAP.

According to our assessment, complying with the CAP targets would reduce emissions to around 6.1 GtCO<sub>2</sub>e in 2020 (about 16% below 2005 or 3% below 1990), 5.6 GtCO<sub>2</sub>e in 2025 (about 23% below 2005 or 11% below 1990) and 5.1 GtCO<sub>2</sub>e in 2030 (about 30% below 2005 or 19% below 1990). This would put the US not only on a trajectory to meet its 2020 target (lower end of the range excluding LULUCF) but also the NDC for 2025 (upper end of the range excluding LULUCF).

Areas of the CAP which have already been addressed include, among other measures, 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).

In addition, the Government has issued various energy efficiency standards, including fuel efficiency standards for light duty and heavy duty vehicles, whose effects are partially included in the Annual Energy Outlook (AEO) 2017 and thus also in our current policy projections. The standards for volatile organic compounds and methane emissions from oil and gas industry contribute to achieving the methane target and are included in the current policy scenario. HFC reduction measures under the Significant New Alternatives are also included in the current policy scenario.

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).

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. However, 2013 and 2014 again saw an increase in total GHG emissions, partially from an increase in coal consumption. Energy related CO<sub>2</sub> emissions declined in 2015 and 2016, due to a decrease in coal consumption (coal emissions decreased 8.6% in 2016) accompanied by a slight increase in oil and natural gas consumption (EIA, 2017). This is consistent with a generally declining trend over the past decade.

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. 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.

## Assumptions

### Historical Emissions

Historical emissions are inventory submissions to the UNFCCC, reported in the Common Reporting Format (UNFCCC, 2016). For the US their inventory global warming potentials (GWPs) based on the IPCC Fourth Assessment Report. To compare and sum up different gases on a common basis, the reported data were converted into terms of GWPs from the IPCC Second Assessment Report (SAR).

### Pledge

Targets for 2020 and 2025 were calculated from the SAR converted 2016 national inventory submissions. These differ from the illustration of the targets in the US' 2<sup>nd</sup> Biennial Report (U.S. Department of State, 2016), which uses GWPs from the IPCC Fourth Assessment Report.

For the 2020 pledge, NDC, and long-term target, 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 taken from the 6<sup>th</sup> National Communication, which reported sinks of 0.6–0.9 GtCO<sub>2</sub>e/a in 2025. (United States of America, 2014). The 2016 CAT update used LULUCF projections from the 2<sup>nd</sup> Biennial Report, which reported a sink of 0.9 to 1.2 GtCO<sub>2</sub>e/a in the same year. The methodology changes in the 2<sup>nd</sup> Biennial Report 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. In the NDC in the 2<sup>nd</sup> biennial report were calculated with a different methodology than LULUCF in the CRF historical data for 2005, on which the NDC target is based, making these values incompatible with the historical data. We have therefore returned to using projections from the 6<sup>th</sup> National Communication in this update, which is consistent with the historical data. The LULUCF projections for 2050 were taken from the Mid-Century Strategy document and represent the full range of modeled sink scenarios in the report (The White House, 2016).

### Current policy projections with and without Clean Power Plan

The current policy projection was done in four steps:

- First, energy-related CO<sub>2</sub> emissions projections were taken from EIA's Annual Energy Outlook 2017 (U.S. Energy Information Administration, 2017a). The Annual Energy Outlook contains two scenarios: the reference case and the reference case without the Clean Power Plan.
- Second, industrial process CO<sub>2</sub> emissions were projected by applying the future growth rates observed for industrial process GHG emissions in the 2<sup>nd</sup> Biennial Report to the latest inventory data (UNFCCC, 2016).
- Third, other GHG emission projections were taken from the 2<sup>nd</sup> Biennial Report (U.S. Department of State, 2016) derived from 2010 data reported in the 2014 inventory report (using SAR GWPs) and 2<sup>nd</sup> Biennial Report (using AR4 GWPs).
- Fourth, all the aforementioned emissions were aggregated and then harmonised to historical data.

The emissions projections reported here for 2025 (6765 MtCO<sub>2</sub>e/year, excl. LULUCF) are on the high side of the emissions projections under Trump Administration policies reported in the literature. A recent analysis by Rhodium Group projects 6,350 MtCO<sub>2</sub>e/year excluding LULUCF under baseline economic growth assumptions using AR4 GWPs (Larsen et al., 2017). When expressed in SAR GWPs, this would be around 6,220 MtCO<sub>2</sub>e/year, and 545 MtCO<sub>2</sub>e/year lower than the CAT estimate. The Rhodium Group projections are lower than the CAT projections for three main reasons: 1. They include targets for HFC reductions under the Kigali Amendment, which the CAT does not because the US has not ratified the amendment. 2. They use lower renewable prices than the Annual Energy Outlook, on which the CAT energy sector projections are based. 3. They assume that increasingly stringent standards will be introduced for light duty and heavy duty vehicles, whereas the Annual Energy Outlook assumes that federal standards will remain constant after 2018 for heavy duty vehicles and 2025 for light duty vehicles. Another recent analysis by Resources for the Future (Hafstead, 2017) reports emissions of 6760 MtCO<sub>2</sub>e/year in 2025 using AR4 GWPs for a "best case" scenario under Trump Administration policies. When converted to SAR GWPs, this would be about 150 MtCO<sub>2</sub>e/year lower than the CAT estimate. The difference comes from differences in projections for non-energy related CO<sub>2</sub> emissions. The analysis does not provide an estimate for a "worst case" scenario under Trump Administration policies.

### Additional policy projections

To calculate the likely impact that the Climate Action Plan would have had, before it was rescinded, we focus on two economy wide objectives:

- to double energy productivity (defined as GDP per energy use) by 2030 in comparison to 2010
- to reduce methane emissions from oil and gas production by 40–45% from 2012 levels by 2030

A target to double renewable energy by 2020 (from 2013) was included in previous CAT analyses, however, as this target is likely to be achieved under the current policy scenario, it is no longer included here.

### Energy Productivity Target:

Energy productivity is defined as GDP per energy consumption (i.e. billion USD/quadrillion BTU). Energy consumption, energy related emissions, and GDP projections for 2030 are from the Annual Energy Outlook (AEO) 2017. Historic data for 2010 is from the EIA's Monthly Energy Report from March 2017 (U.S. Energy Information Administration, 2017b). To find the expected emissions reductions in 2030, we first calculate the energy productivity for 2010, then double it. We then calculate the expected energy consumption if the productivity target is met, based on GDP projections for 2030. Finally, we find the related emissions for this level of energy consumption based on projected values for the emission intensity of energy in 2030. Subtracting this value from the projected energy related CO<sub>2</sub> emissions incl. CPP scenario gives the resulting

reduction in emissions as compared to the current policy scenario. We assume a linear decrease in emissions from the last year of historical data (2014) to 2030. The total emissions reductions based on an energy productivity target are very sensitive to projections of GDP. Because of a units inconsistency between the historical and projected GDP values in the last update, the projected emissions reductions were artificially low. This has now been corrected, resulting in larger projected reductions.

#### Methane Emissions Target:

Projections for methane emissions from natural gas are from the 6<sup>th</sup> National Communication (United States of America, 2014). Historic data is from UNFCCC 2016, converted to SAR. For future methane emissions from oil, we apply growth rates for crude oil production from the AEO 2017 to historic emissions data from UNFCCC. We then apply the target values for 2025. For 2030, we create two scenarios – for the minimum reduction, we assume that emissions level off after 2025, for the maximum reduction, we assume that they continue decreasing linearly. We expect that the EPA New Source Performance Standard for Oil and Gas Wells, which is included in our current policy emissions projections, will result in emissions reductions, and therefore subtract the projected reductions from the EPA for 2020 and 2025 from the projected reductions based on the target.

## Sources

EIA, 2017. [U.S. energy-related CO2 emissions fell 1.7% in 2016](#). Today in Energy.

EPA, 2017. [EPA Takes Another Step to Advance President Trump's America First Strategy, Proposes Repeal of 'Clean Power Plan'](#).

Hafstead, M., 2017. [On Trump, Paris, and Greenhouse Gas Emissions. Resources For the Future Blog Post May 1, 2017.](#)

Kuramochi, T. et al., 2017. [States, Cities and Businesses Leading the Way: A First Look at Decentralized Climate Commitments in the US.](#)

Larsen, K. et al., 2017. [Taking Stock 2017: Adjusting Expectations for US GHG Emissions.](#)

The Executive Office of the President, 2013. [The President's Climate Action Plan.](#)

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

The White House, 2016. [United States Mid-Century Strategy for Deep Decarbonization](#)

The White House, 2017. [Presidential Executive Order on Promoting Energy Independence and Economic Growth](#)

U.S. Department of State, 2016. [Second Biennial Report of the United States of America Under the United Nations Framework Convention](#), Washington DC, USA: U.S. Department of State.

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

U.S. Energy Information Administration, 2017a. [Annual Energy Outlook 2017](#)

U.S. Energy Information Administration, 2017b. [March 2017 Monthly Energy Review.](#)

UNFCCC, 2016. UNFCCC AWG-KP Submissions 2016. Common Reporting Format., Bonn, Germany: United Nations Framework Convention on Climate Change.

United States of America, 2014. [Sixth National Communication 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.](#)



Find us on [facebook](#)

