A view from the United States

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The US plays an important role in international negotiations on climate change. Fortunately, the role of the US has evolved from that of laggard to leader. Having reduced emissions significantly in recent years, the US is promising substantially more and encouraging other countries to do the same as part of the next international agreement. In this chapter, I provide a high-level view on the state of climate-change affairs from the US perspective. My aim is to briefly cover selected topics that help explain progress, opportunities, and challenges for the US. The topics include public opinion and domestic politics; trends in domestic emissions and policy; the US's Intended Nationally Determined Contribution (INDC) and the importance of matching ambition; climate finance; and expectations for success in Paris.

The US plays an important role in international negotiations within the United Nations Framework Convention on Climate Change (UNFCCC). Representing the world's largest economy as measured in unadjusted GDP, and the largest historical emitter of greenhouse gases, buy-in from US is critical for a workable and effective climate regime. Fortunately, the role of the US has evolved from that of laggard to leader. Having reduced emissions significantly in recent years, the US is promising substantially more and encouraging other countries to do the same as part of the next international agreement.

In this chapter, I provide a high-level view on the state of climate-change affairs from the US perspective. While other chapters in this eBook cover specific topics in detail, my aim here is to briefly cover selected topics that help explain progress made by the US as well as opportunities and challenges facing the country. The topics include

public opinion and domestic politics; trends in domestic emissions and policy; the US's Intended Nationally Determined Contribution (INDC) and the importance of matching ambition; climate finance; and expectations for success in Paris.

1 Public opinion and domestic politics

A view from the US must begin with observations about American public opinion. This is important not only because the US is a representative democracy, but also because of sharp differences between the two major political parties, the Democrats and Republicans. The differences shape the current dynamic between the executive and legislative branches of the US government, as well as the approaches being undertaken to address climate change both domestically and internationally.

A recent poll found that about two-thirds of American registered voters think that global warming is happening, support laws to increase renewable energy and energy efficiency, support setting emission limits on coal-fired power plants, and think the US should reduce greenhouse gas emissions regardless of what other countries do (Leiserowitz et al. 2014). Although climate 'sceptics' or 'deniers' often capture media attention, the majority of Americans believe that climate change is real and warrants political action.

Beneath the majority view, however, is political polarisation. According to the same poll, 81% of Democrats are 'worried' about global warming, compared to only 30% of Republicans. Some 69% of Democrats think global warming is caused by human activities, whereas only 31% of Republicans think the same. When it comes to support for political action, 60% of Democrats say the federal government should be doing more to protect people from global warming, while the comparable number is 21% for Republicans. Among self-identified conservative Republicans, the view is even quite different: 42% think the federal government should be doing even less than it is now.

President Obama has identified climate change as a top priority for the remainder of his term in office, and his Democratic administration is taking the lead on a range of domestic and international initiatives. At the same time, the Republican-controlled Congress, including both the Senate and the House of Representatives, does not support the initiatives and, in many cases, is aggressively seeking to prevent the agenda from advancing. This dynamic has shaped the particular ways that climate policy has progressed in the US, and the political landscape appears unlikely to change in the near future. Current electoral forecasts are for the Democrats and the Republicans to maintain control of the White House and Congress, respectively.

2 US emission trends and domestic policy

As part of the 2009 Conference of the Parties to the UNFCCC in Copenhagen, the US pledged to cut its CO_2 and other GHG emissions to 17% below 2005 levels by 2020. How are things progressing towards that goal?

2.1 Emission trends

Energy-related CO_2 emissions, which comprise the vast majority of all emissions in the US, are the lowest they have been for 20 years. Actual emissions in 2013 were 10% below 2005 levels (EIA 2015a). This reduction is more than half way towards the 2020 commitment and, importantly, it occurred over a period when energy-related CO_2 emissions worldwide have increased by 20% (EIA 2015b).

One reason for the significant reduction in US emissions since 2005 is the Great Recession that began to take hold in 2008. This was the most significant economic downturn since the 1930s, and forecasts predict the US economy will not return to potential levels for years to come. A clear consequence has been lower emissions. One estimate attributes about half of the emissions reduction through 2012 to the recession (CEA 2013). Unfortunately, while helping to achieve emission goals in the short term, lower economic activity is not a strategy for lower emissions in the future.

Another important factor has been a lowering of the carbon content of energy, primarily due to the increased supply of domestic natural gas. The technological combination of horizontal drilling and high-volume hydraulic fracturing has significantly increased the amount of economically recoverable natural gas in the US. Most of the gas has been used for electricity production, crowding out production from more carbon-intensive coal-fired power plants. This shift is responsible for about 28% of the US emission reductions since 2005 (CEA 2013). Also playing an increasingly important role are non-hydro renewable sources of energy for power generation. The US now produces 7% of its electricity from non-hydro renewables, compared to just 2% in 2005 (CEA 2015).

A third factor contributing to lower CO_2 emissions in the US is economy-wide energy efficiency. One measure of efficiency is energy intensity, which captures the amount of energy used to produce a dollar's worth of GDP. For decades, US energy intensity has decreased by more the 1.5% per year, and this alone accounts for an estimated 8% of the emissions reductions between 2005 and 2012 (CEA 2013). While market forces are a critical factor affecting energy efficiency, as well as the carbon content of energy, government programmes also play an important role.

2.2 Major domestic policy

In June 2013, President Obama announced his Climate Action Plan. Among the Plan's broad range of initiatives, two major policies are designed to reduce emissions in the transportation and electricity sectors. The federal government finalised national standards to double the fuel economy of light duty cars and trucks by 2025, and the rules are expected to reduce total CO_2 emissions over this period by the equivalent of one full year of current US emissions. The just realised final version of the Clean Power Plan calls for a reduction in emissions of 32% below 2005 levels by 2030 (see also Burtraw 2015). This target would imply a further reduction of 20% beyond what has already occurred since 2005.

Most aspects of the Climate Action Plan are taking place under the executive authority of the president and therefore do not require Congressional authorisation. While this has been – and will continue to be – politically controversial, it means that climate policy in the US is being pushed along further than the Republican-led Congress would itself support. Unfortunately, it also raises questions about whether the policies will withstand legal challenges, changes in political leadership, or both. Not only does the uncertainty make planning for future compliance more difficult, it also undermines the confidence that other countries have in US climate commitments.

Not all significant climate policy in the US takes place at the federal level; there is a wide range of policies taking place at the state, regional, and local levels. The most prominent example is California's state-wide goal of reducing emissions to 1990 levels by 2020. At the regional level, nine northeastern states participate in a cap-and-trade programme to reduce emissions known at the Regional Greenhouse Gas Initiative (RGGI). Together, California and the RGGI states account for more than half of the US economy. Additionally, many other states and municipalities have policies and programmes in place that are achieving real emission reductions and serving as policy 'laboratories' for future expansion and refinement.

3 The US's INDC and matching ambition

Most countries are in the process of submitting and refining their climate action commitments to cover the post-2020 period. These plans are the official INDCs that will form the basis of the UNFCCC agreement in Paris. The US made its submission on 31 March 2015.

The overarching US commitment is to reduce economy-wide GHG emissions to 26-28% below 2005 levels by 2025. Meeting this commitment will require a 9-11 percentage point reduction beyond the Copenhagen commitment to 2020 (see also Aldy and Pizer 2015). It also represents a significant reduction from business as usual (BAU), which accounts for what would otherwise be increasing emissions until 2025. From one BAU

forecast, the US commitment is to reduce emissions by between 18% and 25% from 2014 levels by 2025 (C2ES 2015). At this stage of the process, the US commitment is generally perceived as representing a reasonably high level of ambition.

It remains to be seen how the US commitment compares to those of other key countries. Many of the most important submissions are still outstanding and reliable comparisons will require careful analysis, which takes time. Yet the outcome of this analysis will be critical to ensure a meaningful agreement in Paris – one with broad participation, substantive commitments, and sufficient matching ambition for all countries to follow through.

Indeed, the best way for other countries to allay concerns about whether US climate commitments will withstand domestic political pressures is to submit and maintain equally ambitious INDCs. Over time, the greatest challenge to advancing an ambitious climate agenda in the US will not be domestic politics, for this is changing along with the majority of public opinion. Instead, as the realities of climate change become ever more certain, the greater concern in the US will be that other countries – especially the large and growing developing countries – will not seek to reduce their own emissions. Without commitments from these countries, it will be difficult to defend a climate agenda in the US that does little to bend the curve of worldwide emissions, yet has adverse consequences for US jobs and competitiveness in a global economy.

4 Climate finance

Climate finance is as an increasingly important aspect of UNFCCC negotiations. Developed countries have made ambitious commitments, and there is a significant need for resources to help developing countries implement mitigation strategies and adapt to inevitable climate changes. One channel of finance that has become a focal point is the Green Climate Fund (GCF). Established in 2009 as part of the Copenhagen Accord, the GCF is open for business with initial pledges totalling more than $10 billion.

President Obama pledged $3 billion from the US. As the first instalment, his administration has requested $500 million for the GCF in this year's budget cycle, but the appropriation requires Congressional authorisation. Many countries are looking closely to see if the US will deliver on this commitment. Developing countries in particular are focused on the GCF, viewing robust contributions as somewhat of a *quid pro quo* for submitting plans to cut their own emissions.

At the time of this writing, the Obama administration is pushing hard to obtain GCF funding, and Congress is threatening to not provide it. While the near-term prospects are uncertain, and could quite possibly fall short this year, it would be unfortunate if the Paris agreement were to falter as a result. The US budget process is notoriously unpredictable year-to-year, and the world's emission targets in the post-2020 period should not hinge on this outcome.

Other countries should nonetheless have reasonably high confidence in US contributions to the GCF over time. Beyond short-term political flashpoints, both Republicans and Democrats have long recognised the value and impact of climate-related assistance to poor countries. It was under two Republican presidents – George H.W. Bush and George W. Bush – that the US helped create the Global Environmental Facility (GEF) and the Climate Investment Funds (CIFs). The GCF is the intended extension, and followers of the process may recall that it took a couple years for US appropriations to begin for the CIFs.

Although not taking centre stage in UNFCCC negotiations, other areas of climate-related finance in need of reform and international coordination are the phasing out of fossil-fuel subsidies and of public financing for coal projects overseas. The International Monetary Fund estimates perverse fossil fuel subsidies to equal 6.5% of global GDP (Coady et al. 2015), and global public assistance for coal has averaged about $9 billion per year since 2007 (Bast et al. 2015). While US-led efforts in these areas have focused on the G20 and across multilateral and bilateral assistance channels, greater integration into the UNFCCC process would be a positive development.

5 Success in Paris

The Paris agreement will not provide a great fix to the world's growing problem of climate change – not even close. The bottom-up approach of basing the agreement on INDCs is certain to fall short of setting sufficiently high global ambition. This is a straightforward and predictable implication of economic incentives on the part of countries voluntarily providing a global public good. So how should we define a successful outcome in Paris?

From the US perspective, there are two key elements. The first is that all major emitting countries, regardless of whether they are developed or developing, submit reasonably ambitious INDCs. The 'common but differentiated responsibility' distinction between developed and developing countries that has defined the UNFCCC process for decades must give way to a more inclusive approach whereby all countries – not just developed countries – seek to reduce emissions. An agreement that does not include emission reductions from the large and fast-growing developing countries simply does not match the future reality of the problem. The recent bilateral announcement between the US and China represents significant progress, and a successful outcome in Paris would be to have other developing countries set similar goals.

The second key element for broad success in Paris is to explicitly recognise the agreement as the beginning of a process, rather than something to be completed so that climate change can fall off the international agenda. The agreement must establish clear pathways towards transparency and regular reporting of emissions, because accurate information is critical to evaluate progress and fairness. And in addition to post-2020 goals, the agreement must also find ways to keep up pre-2020 ambition – the next four years are an important window in which significant progress should be made.

References

Aldy, J. and W. Pizer (2015) "Comparing emission pledges: Metrics and Institutions", chapter XX in this volume.

Bast, E., S. Godinot, S. Kretzmann, and J. Schmidt (2015), *Under the Rug: How Governments and International Institutions are Hiding Billions in Support of the Coal Industry,* Washington, DC: Natural Resource Defense Council.

Burtaw, D. (2015), "The regulatory approach in US climate mitigation policy", Chapter XX in this volume.

Center for Climate and Energy Solutions (C2ES) (2015), "Achieving the United States' Intended nationally Determined Contribution", Policy Brief, Arlington, VA.

Coady, D., I Parry, L. Sears and B. Shang (2015), "How Large Are Global Energy Subsidies?", IMF Working Paper No. 15/105, Washington, DC.

Council of Economic Advisors (CEA) (2013), *Economic Report of the President*, Washington, DC: United States Government Printing Office.

Council of Economic Advisors (CEA) (2015), *Economic Report of the President,* Washington, DC: United States Government Printing Office.

Energy Information Administration (EIA) (2015a), *Annual Energy Outlook 2015, with Projections to 2040*, Washington, DC: Office of Integrated and International Energy Analysis, US Department of Energy.

Energy Information Administration (EIA) (2015b), *International Energy Statistics*, Washington, DC: Office of Integrated and International Energy Analysis, US Department of Energy.

Leiserowitz, A., E. Maibach, C. Roser-Renouf, G. Feinberg and S. Rosenthal (2014), *Politics & Global Warming, Spring 2014*, New Haven, CT: Yale Project on Climate Change Communication.

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