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President Obama's Climate Action Plan

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In his 2013 State of the Union Address[1], President Obama said "if Congress won't act soon to protect future generations, I will. I will direct my Cabinet to come up with executive actions we can take, now and in the future, to reduce pollution, prepare our communities for the consequences of climate change, and speed the transition to more sustainable sources of energy." On 25 June 2013, the President issued his Climate Action Plan.[2] This is his Administration's best effort to tackle the issues, but it also reflects the inability to pass federal climate change legislation.[3]

The absence of legislation will weaken US influence in key UNFCCC[4] negotiations that are supposed to deliver a global agreement by the end of 2015. Furthermore, because the action plan introduces regulations for specific technologies and even specific plants, it will raise the costs of tackling climate change in the US. Indeed, delivering the most important measures in the President's action plan will be slow and cannot be guaranteed. In particular, the Environmental Protection Agency (EPA) faces significant legal and political challenges to introduce greenhouse gas (GHG) emission standards for existing coal-fired plants. This uncertainty adds further to the costs of the proposed measures.

This may be the best that the President can do in the current political climate, but it is still disappointing from the perspective of the scale of the challenges. Nevertheless, the plan defines a US agenda for action to deal with climate change. It sends important signals to the rest of the world, and gives the EU a reason to put climate change back on the list of its policy priorities.

[1] See a summary of President Obama's plans to address climate change, as expressed in the 2013 State of the Union address. http://www.oxfordenergy.org/2013/03/us-energy-and-climate-change-policy-obamas-second-term/
[2] http://www.whitehouse.gov/sites/default/files/image/president27sclimateactionplan.pdf
[3] See the insightful blog by Peter Fox-Penner. http://www.huffingtonpost.com/peter-foxpenner-phd/climate-change-action-plan_b_3515836.html
[4] UNFCCC stands for the United Nations Framework Convention on Climate Change.

The importance of federal legislation

The President has stated a preference for federal legislation to deal with climate change along the lines of the legislation that almost became law in 2009-2010, involving an ambitious long term emission reduction plan and the pricing of carbon emissions. The case for that sort of legislation – whether using carbon taxes or cap and trade mechanisms to price GHG emissions – is now well known. First, it would encourage innovation in low-carbon supply alternatives, as well as investment and consumption decisions that lower GHG emissions. Second, the revenues generated from a carbon tax or the auctioning of emission allowances could be ploughed back into the economy to avoid unacceptable distributional consequences. Third, economy-wide carbon price signals would avoid the inefficiency associated with technology-specific and even plant-specific regulations that are the centrepiece of the President's plan.

Most important, federal legislation would enable the US to sign a global climate agreement that had the domestic political support required for the agreement to be binding on the US. Without legislation, the US will be less credible in UNFCCC negotiations, which are supposed to reach a global agreement in 2015 that will require all countries to take action to reduce emissions to avoid "dangerous anthropogenic interference with the climate system".

What is the President's plan?

The plan lists many measures that do not require Congressional approval; some are new but most are not. It aims to achieve three broad objectives.

- *Cutting carbon emissions in the US.* The plan reiterates the US commitment made in Copenhagen in 2009 to reduce its GHG emissions about 17% by 2020 compared to 2005 levels. Even without legislation, that goal is within reach, not least because the low price of natural gas has helped to shift power generation away from coal[5]. The plan includes, *inter alia,* federal standards for carbon emissions from new and existing power plants, notably coal-based stations; the doubling of renewable electricity generation by 2020; post-2018 mileage standards for heavy trucks; reducing energy waste; reducing other greenhouse gases, including hydrofluorocarbons (HFCs) and methane; and preserving the role of forests as a means of mitigating emissions.

[5] In 2012, coal based generation accounted for about 38% of US electricity, compared to about 50% in 2005. Most of the decline in coal generation was accounted for by an increase in gas-based generation as a result of very low natural gas prices, especially in 2012. However, more recently, gas prices have risen, resulting in an increase in coal-based generation. In the first four months of 2013, coal generation averaged 39.5% compared to 35.4% for the same period in 2012; by contrast, natural gas generation fell to 25.8% in 2013 from 29.5% the year before. For 2014, the Energy Information Agency (EIA) expects coal generation to rise to about 40% in 2014 and for natural gas to fuel about 27.3% of generation. The EIA expects total coal consumption will increase by 7.1 per cent from 890 MMst in 2012 to 954 MMst in 2013 as consumption in the electric power sector rises due to higher electricity demand and higher natural gas prices. Consumption grows at a more modest pace of 1.8 per cent to 970 MMst in 2014. (EIA Short Term Energy Outlook, June 2013, http://www.eia.gov/forecasts/steo/pdf/steo_full.pdf, P. 7)

- *Preparing the US for the impact of climate change.* The US is already experiencing an increasing frequency of severe weather events, which most scientists attribute to global warming. In 2012 alone, these severe weather events caused $100 billion in damage. The evidence that climate change is already having an important impact helps to explain why there is growing political support for a climate action plan in the US. It is also evidence of decades of global inaction on mitigation.

- *Global leadership.* The plan emphasizes international cooperation – especially bilateral actions. The President's recent agreement with the Chinese President Xi Jinping to work to reduce HFCs is an example. The plan also announces an end to US funding for most new overseas coal plants (without Carbon Capture and Storage - CCS); the extension of funding for renewable power projects in Africa and elsewhere; and support for the development of other low carbon technologies, including nuclear and CCS. The plan also supports reduced subsidies for fossil fuels, in addition to other climate-friendly initiatives. Although the plan refers to the UNFCCC negotiations and the goal of reaching a global new agreement by the end of 2015, the international dimension of the President's plan is very much focused on bilateral agreements.

The prospects of delivering the plan – the case of existing coal plants

As noted, the measures were chosen so that they could be achieved largely without congressional support. On the other hand, success is certainly not guaranteed. Many of the measures will require complex negotiations, support for funding and legal challenges. In particular, it will be very difficult to deliver one of the most important measures, namely the introduction of GHG emission standards for *existing* power stations. Electricity generation in the US accounts for almost a third of US CO2 emissions, with coal being the main source. Although the share of coal in generation has fallen from 50% to less than 40% over the last decade, coal's share is increasing again, as natural gas price rises relative to the coal price. The action plan aims systematically to reduce coal-based emissions. Getting there won't be quick or easy.

This is in spite of the D.C. Court of Appeals unanimous 2012 ruling to uphold the right of the EPA to regulate GHG emissions under the Clean Air Act (CAA). That ruling put an end to a suit in which a coalition of states had challenged the EPA's 2009 finding that CO2 emissions endangered public health and should be regulated. However, the EPA must go through a due process to justify the regulations that it introduces and this is where legal problems may arise, especially for existing power stations.

It is important to differentiate between existing and new power stations. Concurrently with the action plan, the President issued a Memorandum directing the EPA to revise its proposed rule for *new* power plants and to issue a new proposal by September 20, 2013. Even before a new rule is adopted, the prospects are bleak for new coal-based power. This is partly because of investment costs to meet emission standards for toxic materials like mercury, SO2 and NOx. It is also because of public opposition to the siting of new coal-fired power stations and the prospect of relatively low-priced natural gas. With the added uncertainty about GHG emission limits or possibly a carbon tax, it is not surprising that financial markets are reluctant to support new coal-based power.

For existing power stations, the prospects are more complicated to assess. First, introducing GHG emissions standards could take many years.[6] The President has directed the EPA to develop GHG emission standards for *existing* power plants and to issue proposed rules by June 1, 2014, and final rules by June 1, 2015. The States are then required to submit plans to implement the federal guidelines by June 30, 2016. There is no specified deadline for existing power plants to comply with the standards.

Second, there is some uncertainty about the legal authority of the EPA to introduce GHG emission standards for existing power stations. One interpretation of the CAA is that the EPA may not introduce CO2 limits for plants whose other emissions (e.g., SO2 and mercury) are already regulated by the CAA. The White House interpretation is that the CAA does authorize the EPA to introduce CO2 emission standards for existing plants.

Third, there is uncertainty about how to establish the emission guidelines. The conventional EPA approach is to set limits at the facility level. This is problematic for CO2 emissions since there are few, if any, commercially viable means of limiting plant emissions, short of just shutting the plant. This has led to debate about other means of setting the guidelines, including measures that go "beyond the fence", for instance additions of renewable or nuclear energy, or demand-side measures to reduce the overall emissions. The opponents of coal-based generation are pressing for a stricter plant-specific interpretation that would require closure of the plants.

Fourth, there is uncertainty about compliance. The EPA must provide guidance to the States on the range of measures that may be adopted to meet the EPA guidelines on emissions. The White House has directed the EPA to develop approaches that allow the use of market based instruments, performance standards, and other regulatory flexibilities, but has left a significant amount of discretion to the EPA with respect to compliance.

In short, the CAA process involves significant legal uncertainty and will require a number of years before the details are finalized for existing plants. Furthermore, Congress is able to complicate the process, for instance by reducing the budget for the EPA, rejecting the President's candidates to run the EPA, and through other measures. There is no absolute certainty here, but in this sort of situation my lay understanding is that eventually the Administration wins. Even those who are convinced that the EPA will prevail accept that the process of introducing standards for existing plants will take many years.

In the meantime, the EPA will continue to implement measures that are unambiguously under its control, in particular tighter limits at existing plants for emissions of mercury, acid gases, SO2 and NOx. The combination of the additional investment costs to meet these environmental standards, low expected natural gas prices and reduced demand projections for power has already led to announcements of retirements of 31 GW of US coal-based generation by 2021, an amount that is about 10% of existing capacity. Some of those

[6] See the Van Ness Feldman note of 27 June 2013, by Kyle Danish, Stephen Fotis, Doug Smith and Ilan Gutherz, on legal issues related to EPA regulation of existing power stations. http://www.vnf.com/news-alerts-854.html

retirements are a reflection of the age of plants, but it is important that new coal plants are not replacing the retired ones. The Brattle Group expects significantly more early retirements, of between 59 GW and 77 GW (19-24%) of coal-based generation by 2016, depending on the stringency of the environmental requirements, and assuming a price of gas of $4-5/MMBTU (in 2012 $). If forecast gas prices are lower than this, or carbon prices are expected, there could be a significant increase in the projected number of coal plants opting for early retirement.

Some key messages for the rest of the world

The absence of federal legislation weakens US credibility in global negotiations, especially through the UNFCCC. To be credible, the US needs a long-term plan and legislation to support reductions in line with the scientific consensus on what is required to avoid dangerous interference with the climate. Without federal legislation of this kind, it is hard to see how the US can make long-term commitments of the kind that the world needs.

Second, the President has reiterated opposition to coal-based power (without CCS) and support for electricity generated from natural gas, as well as from renewables and nuclear. This will not only reduce coal-based investments in the US, but also in countries that rely on US funding, or funding from multilateral organizations like the World Bank. However, as long as electricity from coal costs much less than the alternatives, as in China and India, US views on this will not make a significant difference to the world's increasing reliance on coal. Furthermore, the decline in coal-based electricity in the US has increased US coal exports and, to the extent that it put downward pressure on world coal prices, has contributed to an increase in generation from coal and CO2 emissions in Europe.

Third, the Obama Administration sees no conflict between environmental protection and economic growth. On the contrary, the increase in shale gas production and the evidence of competition in the renewables business coming from China and elsewhere have led to a perception that "clean" energy and related technologies (e.g., smart power) are a growing business and that the US has fallen behind on solar and wind technology, if not in other areas.

Finally, the President's action plan sends a number of messages to the EU. First, after many years of taking the lead in global climate negotiations and in the financing of renewables and other low carbon solutions, Europe has recently put climate change on the back burner. This is partly due to current financial difficulties and the recognition that the EU's approach to de-carbonization has been very expensive. It is also due to a sense that the EU was bearing too much of the global burden and had nothing much to show for it; indeed, some politicians have even adopted a view frequently defended by certain industries that the EU's "competitiveness" is being undermined by rising EU electricity costs. However, the President's action plan, along with evidence that China and other large countries appear to be getting more serious about dealing with climate change and about the commercial opportunities of low carbon energy, suggest that Europe is no longer quite so alone. Indeed, if the EU is not careful, it may well lose its influence in global negotiations and the potential economic and political benefits that come from helping to shape a global agreement in 2015. Rather than complain about inaction from the rest of the world, the EU should now put climate policy back at the center of its energy policy.

Second, the EU needs to make de-carbonization less expensive. Relying on governments to select and subsidize specific low carbon technologies has proven costly in budgetary terms, and has probably also discouraged innovation in the development of technologies that do not receive subsidies. Policy should give more room to competitive mechanisms that encourage innovation and cost mitigation. [7]

Finally, climate change is a global phenomenon and the EU's share of global GHG emissions is small (13%) and falling. Policy in Europe should focus on driving down the cost of low carbon technologies so as to accelerate their penetration in countries where GHG emissions – especially from coal-based electricity – are large and growing quickly. The President's climate action plan sends the right signal on the future of coal and the EU should follow that lead. However, in the absence of low cost gas, the EU needs to consider other means of reducing emissions from coal-based generation in Europe and in the largest emerging countries.

[7] For more on the future of markets in the de-carbonization of the power sector, see http://www.oxfordenergy.org/2012/11/decarbonisation-of-the-electricity-sector-is-there-still-a-place-for-markets/