Statement of the U.S. Chamber of Commerce

ON: Examining the International Climate Negotiations

TO: U.S. Senate
Committee on Environment and Public Works

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1615 H Street NW | Washington, DC | 20062

The U.S. Chamber of Commerce is the world's largest business federation representing the interests of more than 3 million businesses of all sizes, sectors, and regions, as well as state and local chambers and industry associations. The Chamber is dedicated to promoting, protecting, and defending America's free enterprise system.

More than 96% of Chamber member companies have fewer than 100 employees, and many of the nation's largest companies are also active members. We are therefore cognizant not only of the challenges facing smaller businesses, but also those facing the business community at large.

Besides representing a cross section of the American business community with respect to the number of employees, major classifications of American business—e.g., manufacturing, retailing, services, construction, wholesalers, and finance—are represented. The Chamber has membership in all 50 states.

The Chamber's international reach is substantial as well. We believe that global interdependence provides opportunities, not threats. In addition to the American Chambers of Commerce abroad, an increasing number of our members engage in the export and import of both goods and services and have ongoing investment activities. The Chamber favors strengthened international competitiveness and opposes artificial U.S. and foreign barriers to international business.

Thank you, Chairman Inhofe, Ranking Member Boxer, and members of the Committee. I am Stephen D. Eule, vice president of the Institute for 21st Century Energy, an affiliate of the U.S. Chamber of Commerce. The mission of the Institute is to unify policymakers, regulators, business leaders, and the American public behind common sense energy strategy to help keep America secure, prosperous, and clean. In that regard, we hope to be of service to this Committee, this Congress as a whole, and the administration.

This hearing could not be timelier. As the international climate change meeting in Paris draws closer, it is import for policymakers to take a clear-eyed view of what a new climate change agreement might hold. Having spent many years attending and tracking these talks, both in government and the private sector, I can say there remains an air of unreality hangs over these negotiations that over time has led to unreasonable expectations about what countries will be able to deliver—including expectations about national greenhouse gas (GHG) emissions goals, technology readiness and commercial adoption, financial assistance, technology transfer, intellectual property, and loss and damage payments, issues that are among the most contentious in the international negotiations.

What I hope to do with this testimony is to strip away the rhetoric and provide an unvarnished, realistic view of the international climate change agreement now in the works and the U.S. commitment being offered.

Background

Climate change is among the most complex issues facing the international community. Negotiations are currently taking place under the United Nations Framework Convention on Climate Change (UNFCCC). The Framework Convention was adopted in 1992 and entered into force in 1994. The U.S. Senate gave its advice and consent to ratification of the agreement in 1992 by voice vote. This consent, however, came with the understanding that any future agreement pursuant to the UNFCCC that included emissions target and timetables would be subject to the Senate's advice and consent.

The ultimate goal of the UNFCCC is the "stabilization of greenhouse gas concentrations in the atmosphere at a level [undefined] that would prevent dangerous anthropogenic interference with the climate system." This goal should be "achieved within a time frame that would allow ecosystems to adapt naturally top climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner." More than 190 governments are Parties to the UNFCCC.

Since 1995, the Conference of the Parties (COP) to the UNFCCC have met annually, and in December of this year, the 21st meeting of the COP will take place in Paris, France in December with a goal of completing a new agreement.

From the very beginning, the structure of the UNFCCC has virtually guaranteed gridlock. Consider the notion of historical responsibility, which plays an oversized role in the dynamics between and among developed, emerging, and developing country Parties. Developing countries assert that as developed countries bear "historical responsibility" for most of the build-up of atmospheric carbon dioxide, they bear a greater responsibility to reduce emissions and to provide finance for reductions in developing countries.

Historical responsibility buttresses the UNFCCC principle of "common but differentiated responsibilities and respective capabilities" under which, ". . . developed country Parties should take the lead in combating climate change and the adverse effects thereof." In other words, developing countries are not expected to do as much as developed countries, which have greater economic and technological capabilities to curb emissions. This principle of common but differentiated responsibilities is on full display in the 1997 Kyoto Protocol, which only saddles developed countries only with binding obligations to reduce emissions.

Over the years, however, it has become readily apparent that developed countries alone cannot reduce global emissions by themselves—all countries have to participate. Developing countries, however, have been reticent to take on any substantial obligations for the reasons cited above and because economic development remains their priority. Paris is supposed to be the first agreement that would bring developing countries into the fold as full partners.

The first cracks in this UNFCCC wall separating developed from developing countries appeared in the Bali Roadmap that emerged from the UNFCCC talks in Indonesia in 2007, where developing countries agreed to consider "nationally appropriate mitigation actions" that are "measurable, reportable, and verifiable."

The Durban Platform for Enhanced Action, which was adopted at COP-17 in 2011, charged the Parties to adopt a "protocol, another legal instrument or an agreed outcome with legal force" at COP-21 and for it to "come into effect and be implemented from 2020."

Unlike the Kyoto Protocol, which was a top-down treaty, the Paris agreement is anticipated to be a bottom-up treaty, with each country setting goals based on their unique national circumstances. These Intended Nationally Determined Contributions, or INDCs, will form the basis of the country-specific commitments under the new UN climate treaty. It is also expected that periodic review of these commitments will be instituted along with measuring, reporting, and verification to ensure the integrity and ambition of the commitments.

Despite many negotiating sessions this year, there are still many issues that need to be ironed out before an agreement is reached, including financial assistance under the UNFCCC's Green Climate Fund, loss and damages, intellectual property and technology transfer, and a long-term global goal. These and other issues of particular interest to the business community are outlined below.

1. A Technology Challenge

As a practical matter, any long-range numeric goal makes assumptions about the pace of technology development and diffusion, an inherently unpredictable process. At its most fundamental level, reducing carbon dioxide emissions from energy is a technology challenge that, as a 2002 article in *Science* famously noted, "cannot be simply regulated away."[1] Neither can it be negotiated away.

The development of technology and its commercial adoption are among the most important factors determining how quickly and at what cost greenhouse gas emissions can be reduced. In many developing countries, providing citizens with energy services is a much more pressing need than addressing climate change. It is a simple fact that much of the energy needed to power economic growth will likely be supplied by fossil fuels. Many developing countries have large resources of coal, natural gas, and oil, and it would be unrealistic to expect them not to use it. However, the increased use of existing and advanced technologies can limit the environmental impact of using these fuels, reduce demand for them through efficiency, and provide alternate sources of energy.

Existing technologies can make a start, but they are not capable of significantly reducing greenhouse gas emissions on a global scale and at an acceptable cost. New, and in some cases revolutionary, energy technologies, many still years if not decades over the horizon, will have to be developed and adopted commercially along with the infrastructure to support them. But there is a great deal of uncertainty about how fast, or even if, these technologies will progress.

The Chamber puts a heavy emphasis on developing new technologies because it recognizes that unless and until alternate technologies can compete with traditional fuels on cost, performance, and scalability, they will not be used commercially to a great degree. That is why the Chamber will continue to support policies designed to lower the cost of alternative energy rather than raising the cost of traditional energy. Unfortunately, the Obama Administration has adopted an approach to raise the cost of affordable energy at home and in the international negotiations. As we will see, not only does this approach jeopardize U.S. competitiveness and growth going forward, it also will have a small impact on global GHG emission trends.

2. The U.S. INDC Lacks Basic Information to Allow a Rigorous Assessment of the Goal

The Obama Administration has set a goal to cut its net greenhouse gas emissions 26% to 28% from the 2005 level by 2025, with a "best effort" to achieve 28%. Its submission to the

[1] M.I. Hoffert *et al*. 2002. "Advanced Technology Paths to Global Climate Stability: Energy for a Greenhouse Planet," *Science* 298. Available at: http://www.sciencemag.org/cgi/content/abstract/298/5595/981?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=existing+technologies+can+contribute&searchid=1&FIRSTINDEX=0&resourcetype=HWCIT.

UNFCC is supposed to provide "information to facilitate the clarity, transparency, and understanding of the contribution." But rather than providing a clear roadmap to 2025, the INDC leads us instead into terra incognita.

This lack of transparency is all the more disappointing because the U.S. INDC claims that, "The target reflects *a planning process* that examine opportunities under existing regulatory authorities to reduce emissions in 2025 of all greenhouse gases from all sources in every economic sector" [emphasis added]. While regulatory proposals used to support the INDC are developed in a public process, the planning process the administration undertook to develop its international commitment did not allow for any opportunity to get input from the public, the business community, other stakeholders, and the Congress. This is despite the fact that the outcome of this process is sure to have far-reaching effects on the economy and employment.

A close examination of the INDC raises more questions than it answers. Nowhere does it explain how the administration intends to achieve the unrealistic goals it has set out. In the absence of a detailed explanation of how the administration intends to meet the goal, the Congress, foreign governments, and stakeholders here and abroad have no basis on which to assess its cost or achievability.

So how does the U.S. commitment add up? It does not. According to the Environmental Protection Agency's (EPA) most recent GHG inventory, net GHG emissions—which include sinks (e.g., removals of carbon dioxide from the atmosphere by forest growth)—were about 6.4 billion metric tons of carbon dioxide equivalent (TCO_2 eq.) in 2005 and about 5.8 billion TCO_2 eq. in 2013. To achieve a 28% reduction in 2025, emissions would have to drop to 4.6 billion TCO_2 eq. That represents a total reduction of about 1.8 billion TCO_2 eq. from the 2005 level, or 1.2 billion TCO_2 from the 2013 level.[2]

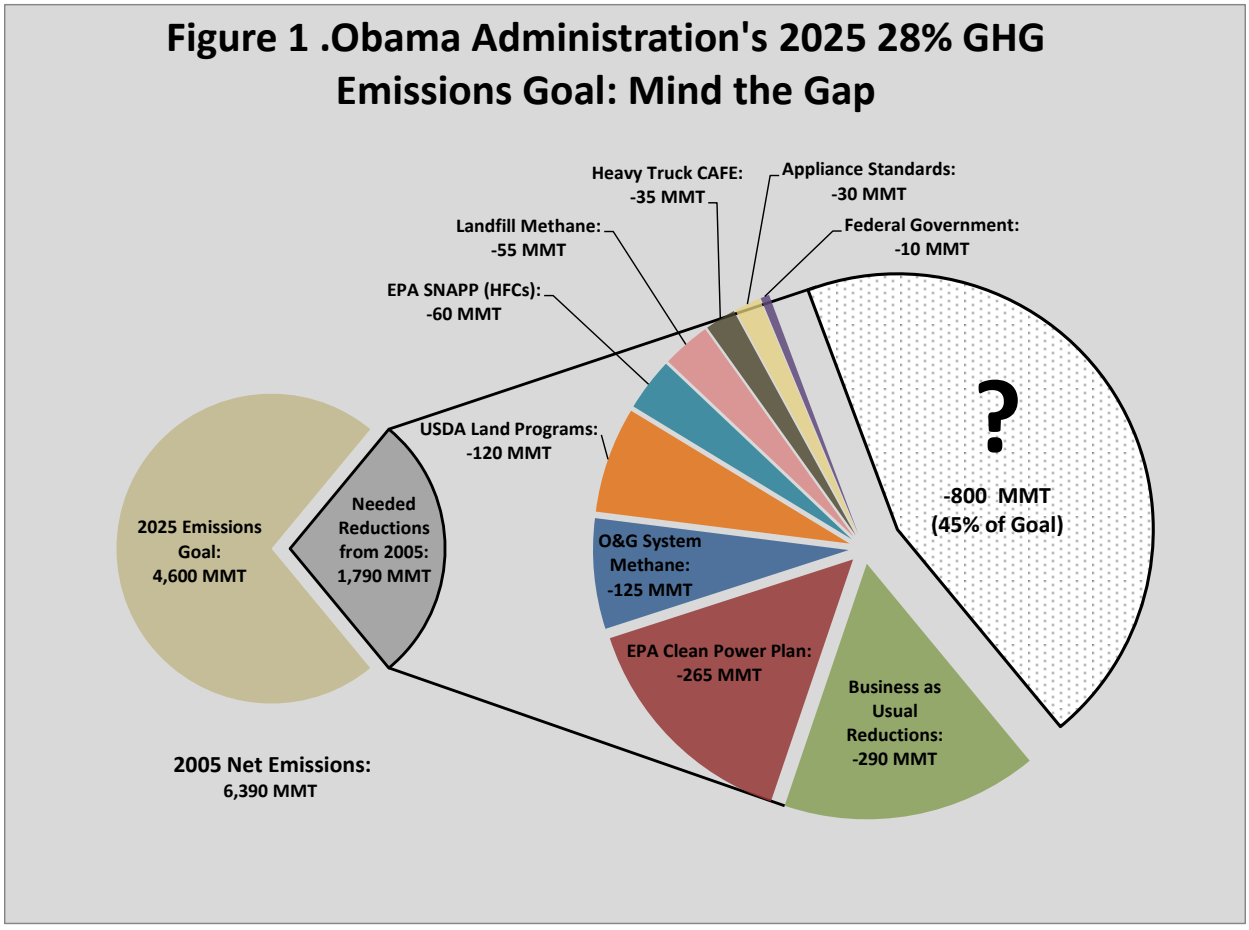
Reducing economy-wide GHG emission by such a large amount will be no easy task. Based on our analysis of the existing programs and programs announced by the administration—including programs covering existing and new fossil-fuel power plants, automobile efficiency standards and new standards for heavy trucks, methane emissions from oil and gas operations, appliance efficiency standards, hydrofluorocarbons, land use management, and other areas—we estimate that in 2025 total net GHG emissions would still be about 800 million TCO_2 eq., or 45%, short of the needed 1.8 billion TCO_2 in reductions needed to meet the President's 28% emissions target (Figure 1). Other analysts have come to similar conclusions,[3]

[2] For more detail on this analysis, see: Institute for 21st Century Energy. 2015. "Mind the Gap: The Obama Administration's International Climate Pledge Doesn't Add Up." Available at: http://www.energyxxi.org/mind-gap-obama-administrations-international-climate-pledge-doesnt-add.

[3] For example, see: D. Bookbinder. 2015 *Testimony of David Bookbinder before the Senate Environment and Public Works Committee*. Available at: http://www.epw.senate.gov/public/_cache/files/96e1aded-05af-485a-9e23-544f82e0f4bc/bookbinder.pdf.

Conspicuous by its absence in the INDC is any reference to emissions from industry. It is hard to imagine that the administration does not intend to get at least some reductions from energy-intensive industrial sectors. Indeed, EPA's fiscal year 2015 budget proposal notes the agency intends to begin considering new GHG regulations on the refining, pulp and paper, iron and steel, livestock, and cement sectors. None of this is detailed in the INDC.

As if these flaws are not enough, the centerpiece of the INDC, EPA's Clean Power Plan, has serious legal vulnerabilities (at a minimum). In its *Utility Air Regulatory Group v. EPA* ruling, the Supreme Court warned the EPA that, "When an agency claims to discover in a long-extant statute an unheralded power to regulate 'a significant portion of the American economy,' we typically greet its announcement with a measure of skepticism. We expect Congress to speak clearly if it wishes to assign to an agency decisions of vast 'economic and political significance'" [citations omitted].



Sources: Greenhouse gas emissions measured in million metric tons (MMT) of carbon dioxide equivalents. Excludes U.S. Territories. Estimates derived using EPA's *U.S. Greenhouse Gas Inventory Report: 1990-2013;* Energy Information Administration's *Annual Energy Outlook* (2015 and earlier); EPA's Regulatory Impact Analysis for the Clean Power Plan Final Rule; the *U.S. Climate Action Report 2014*; and programs announced or planned by the Obama Administration.

In using a little-used 300-word provision of the Clean Air Act to redesign fundamentally the nation's electricity markets, EPA goes far beyond the bounds of the regulatory authority granted to it by Congress. It is no wonder, then, that the Clean Power Plan is facing substantial legal opposition, with lawsuits filed by 27 states, 24 national trade associations (including a coalition of 16 trade groups led by the U.S. Chamber), 37 rural electric cooperatives, 10 major companies, and three labor unions.

Under these circumstances, it is difficult to see how the administration proposes to sell such an unrealistic, bare-bones plan to the international community, much less to constituencies here at home. Further, because the Obama Administration has decided to defy Congress and implement its climate plan through executive action, nothing it commits to at Paris, including the promise of billions of dollars in financial assistance, will be legally binding on any future administration. The legal limbo the administration's actions have created will have real consequences for business as it tries to plan for the future.

3. The Paris Commitments are Extremely Unequal

A new international agreement should take into account changing trends in global emissions and economic development. Developing countries will account for the vast majority of future GHG emissions globally. The International Energy Agency's (IEA) most recent mid-range forecast for energy-related carbon dioxide emissions, for example, suggests developing countries will account for 70% of global carbon dioxide emissions from energy in 2030 and 170% of the increase in those emissions between 2013 and 2030.[4]

If the world truly is serious about reducing GHG emissions appreciably, developing countries will have to take on meaningful commitments, something that, based on current evidence, they are not prepared to do. Not only are they not prepared to make meaningful commitments, but under the principle of "common but differentiated responsibilities and respective capabilities" enshrined in the UNFCCC, they are not obligated to do anything without financial and other support from developed countries. Moreover, the inescapable fact is developing countries have a much greater interest in pursuing economic growth and poverty eradication than they do in reducing GHG emissions. These mutually-reinforcing dynamics have led to large disparities in the level of commitments being offered between Annex I and Non-Annex I countries.

Take for example the INDCs being offered up by some of the world's largest and growing emitters of GHGs:

- China—the world's #1 GHG emitter—pledged to: (1) peak its carbon dioxide emissions at (an unidentified level) "around" 2030; (2) reduce its carbon dioxide emissions intensity 60% to 65% from 2005 to 2030; and (3) increase its share of non-fossil fuel

[4] IEA. 2015. *World Energy Outlook 2015*. Available at: http://www.worldenergyoutlook.org/.

energy consumption to "around" 20% of total demand by 2030.[5] An examination of the Chinese commitment reveals it to be little better than business as usual. For example, International Energy Agency (IEA) historical and forecast data show that carbon dioxide emissions from China already are expected to peak around 2030 at 9.5 billion TCO_2 and that zero-emitting energy will provide 18% of total energy demand.[6] IEA data also suggest that from 1990 to 2005, China reduced its carbon dioxide emissions intensity by 58% to 61%—essentially the same rate it is pledging for 2005 to 2030. In other words, business as usual.[7] In addition, China announced that it would begin to institute a national cap & trade system next year. (N.B. Estimates of China's recent past, current, and future carbon dioxide emissions will almost certainly be revised upward since it was revealed that the country has been underestimating its coal consumption by 17%.)

- India—the world's #4 GHG—has committed to reducing its GHG emissions intensity (emissions per unit of GDP) 33% to 35% between 2005 and 2030s.[8] We estimate that if it meets this goal, its emissions will grow from about 3 billion TCO_2 in 2010 to about 5 to 6 billion TCO_2 in 2030—at jump of at least 80%. Importantly, India's INDC is conditional on financial and technology assistance that it estimates could run to $2.5 trillion. (In the meantime, India announced that it intends to double domestic coal output over the next five years to fuel economic expansion.)

- The Russian Federation—the world's #5 GHG emitter—has proposed a 25% to 30% reduction in net GHG emissions by 2030 from a 1990 baseline.[9] Data submitted by Russia to the UNFCCC, however, show that in 2012, the country's net GHG emissions were 50% below their 1990 level. This means Russia actually is proposing to *increase* its emissions in 2030 from 900 million to 1 billion TCO_2 eq. compared to the 2010 level.

None of this should be taken as criticism of these INDCSs. Countries do not check their national interests at the UN cloakroom. Like many other developing and emerging economies, China and India will continue to use fossil fuels because they have an overriding interest in boosting growth and lifting their people out of poverty. Cutting GHG emissions will always take a backseat to these goals.

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[5] China INDC available at: http://www4.unfccc.int/submissions/INDC/Published%20Documents/China/1/China%27s%20INDC%20-%20on%2030%20June%202015.pdf.

[6] ExxonMobil's latest forecast shows Chinese carbon dioxide emissions peaking five years earlier, in 2025, at nearly 11 billion metric tons and declining thereafter. See: ExxonMobil. 2015. *The Outlook for Energy: A View to 2040*. Available at: http://corporate.exxonmobil.com/en/energy/energy-outlook.

[7] To put the IEA's emissions growth forecasts for China into perspective, the very large 413 million TCO2 eq. reduction in U.S. power sector emissions EPA estimates it final existing power plant rule would deliver in 2030 would be offset by estimated 2030 Chinese carbon dioxide emissions in roughly two weeks.

[8] India INDC available at: http://www4.unfccc.int/submissions/INDC/Published%20Documents/India/1/INDIA%20INDC%20TO%20UNFCCC.pdf.

[9] Russian Federation INDC available at: http://www4.unfccc.int/submissions/INDC/Submission%20Pages/submissions.aspx.

While the rest of the world continues to emit with abandon, the U.S. is proposing a goal of a 26% to 28% cut in net emissions by 2025 from the 2005 level and the European Union goal of a 40% reduction in emissions by 2030 from the 1990.

Given the wide disparity in goals, it was something of a surprise, then, to read on November 3 the comments of the Executive Secretary of the UNFCCC, Christiana Figueres, asserting that when it comes to addressing global warming, "The United States is actually playing catch-up to China." As fate would have it, on the same day Executive Secretary Figueres made this startling claim, the *New York Times* reported that China has admitted that in recent years it has been underestimating its coal usage by about 17%.[10] How big an emissions bump does this represent? Well, in recent years it amounts to a rise of between 900 million and 1 billion TCO_2 eq., about equal to the annual GHG emissions of Germany. This is not a rounding error.

This is not a situation unique to China—many other countries also do not know how much carbon dioxide or other GHGs they emit. This episode should raise serious questions about China's ability to deliver on national emissions trading system it plans to launch next year. Leaving aside the uncomfortable fact that China's anticipated cap and trade scheme will not actually cap emissions for some time (if at all), it is fair to ask how effective such a system could possibly be given the country clearly does not seem to have a handle on how much carbon dioxide it is actually emitting.

4. The Paris Commitments Will Not Result in a Carbon-Constrained World

In light of the wide disparity in ambition between developed and developing countries noted in the preceding section, it is not surprising that the commitments proffered by developed and developing countries thus far will not curt global GHG emissions and may not even slow their growth appreciably.

Earlier this month, the UNFCCC released a *Synthesis report on the aggregate effect of the intended nationally determined contributions*, its stab at analyzing the impact country pledges will have on global GHG emissions.[11] The analysis evaluated the 119 Intended Nationally Determined Contributions (INDCs), covering about 80% of global net GHG emissions, the UNFCCC received as of 1 October 2015.

The report found that even in the extraordinarily unlikely occurrence that each country fulfills its INDC to the letter—including unconditional as well as conditional elements—

[10] Chris Buckley. 2015. "China Burns Much More Coal Than Reported, Complicating Climate Talks." New York Times. Available at: http://www.nytimes.com/2015/11/04/world/asia/china-burns-much-more-coal-than-reported-complicating-climate-talks.html?_r=0.

[11] UNFCCC. 2015. *Synthesis report on the aggregate effect of the intended nationally determined contributions*. Available at: http://unfccc.int/resource/docs/2015/cop21/eng/07.pdf.

emissions in 2030 will be considerably higher (a median of about 8.6 billion TCO_2 eq.) than they were in 2010.

Based on the UNFCCC study and the INDCs submitted by developed countries, it is clear that all of the actual burden of reducing emissions would fall on Australia, Canada, Europe, Japan, New Zealand, and the United States, countries that accounted for just about 27% of total global GHG emissions in 2010. We estimate that if these countries met the goals laid out in their INDCs, their emissions would drop a combined 4.1 billion TCO_2 eq. from 2010 to 2030. If the U.S. INDC goal is reached, it would account for more than half of the 4.1 million TCO_2 reduction for this group of advanced economies.

In the meantime, emissions from the rest of the world would jump anywhere from 8.6 to 12.1 billion TCO_2 eq. from 2010 to 2030, a range equivalent to about 1.5 to 2.1 times total U.S. emissions in 2010. Again, this assumes the INDCs are fulfilled to the letter. If not, the emission increases from the rest of the world will be even larger.

Moreover, it is questionable whether the INDCs would even slow global emissions growth appreciably. The nearby chart taken from the UNFCCC report shows (Figure 2), when taking into account the broad range of possible outcomes, it is likely that even if countries fulfill their commitments, the resulting trajectory of global GHG emissions will not be all that much different from business as usual (or the "pre-INDC scenarios in the chart).

The UNFCCC analysis is confirmation of what we noted earlier and what many of the INDCs from developing countries state plainly: The priority of most countries remains economic development and poverty eradication, and that takes energy. The International Energy Agency estimates that about 1.3 billion people lack access to modern energy services, particularly electricity. For the poor to be able capture the benefits of greater energy use and escape the cycle of poverty, energy resources and technologies must be "scalable," that is, available in large quantities when and where they are needed and at an affordable price.

As the IEA's Executive Director, Fatih Birol, recently noted, "The importance of coal in the global energy mix is now the highest since 1971. It remains the backbone of electricity generation and has been the fuel underpinning the rapid industrialization of emerging economies, helping to raise living standards and lift hundreds of millions of people out of poverty."[12] That assessment is not likely to change anytime soon.

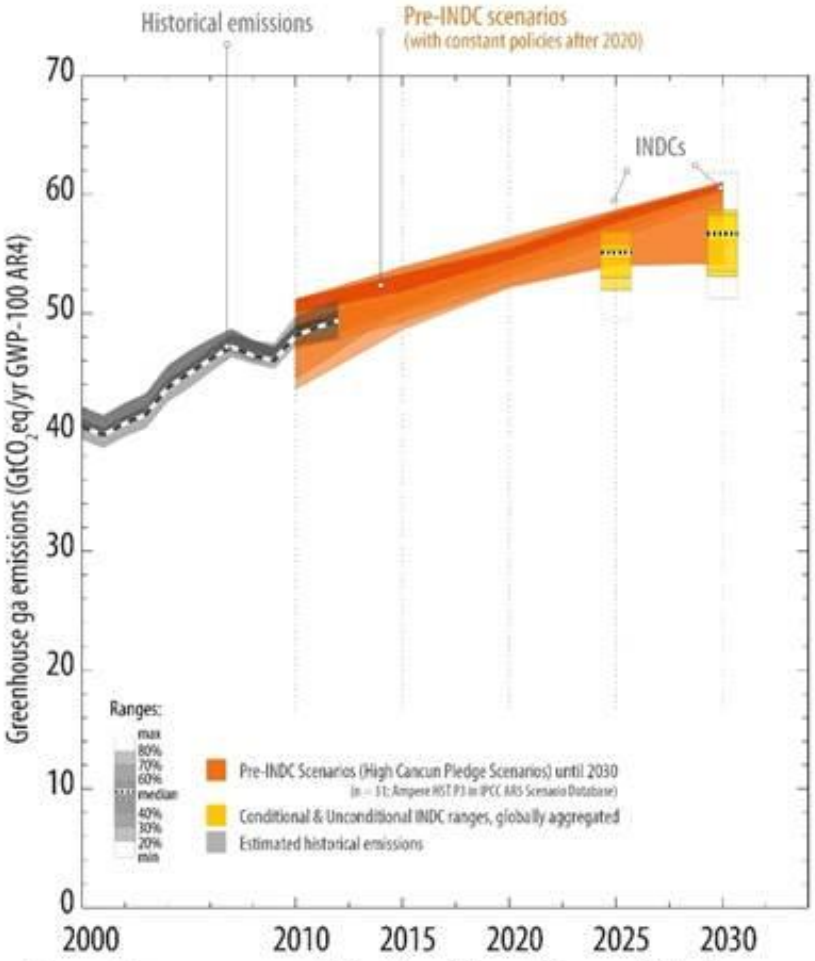
So what are countries actually doing on the eve of the Paris talks? Using data from Platts, we estimate that that nearly 1.2 terawatts—or trillion watts—of new coal-fired power plants are under construction or in the planning phase, accounting for nearly 40% of the total generating capacity of all technologies now under construction or planned (Figure 3). (Keep in mind that EPA projects that its Clean Power Plan will force the retirement of 29 gigawatts of

[12] Fatih Birol. 2015. "Coal's Role in the Global Energy Mix: Treading Water or Full Steam Ahead?" *Cornerstone*. Available at: http://cornerstonemag.net/coals-role-in-the-global-energy-mix-treading-water-or-full-steam-ahead/.

coal-fired power by 2025, meaning that for every 1 gigawatt of capacity expected to retire in the U.S., more than 40 new gigawatts are under construction or planned elsewhere.[13])

Figure 2.

Global emission levels resulting from the implementation of the communicated intended nationally determined contributions by 2025 and 2030 in comparison with trajectories consistent with action communicated by Parties for 2020 or earlier



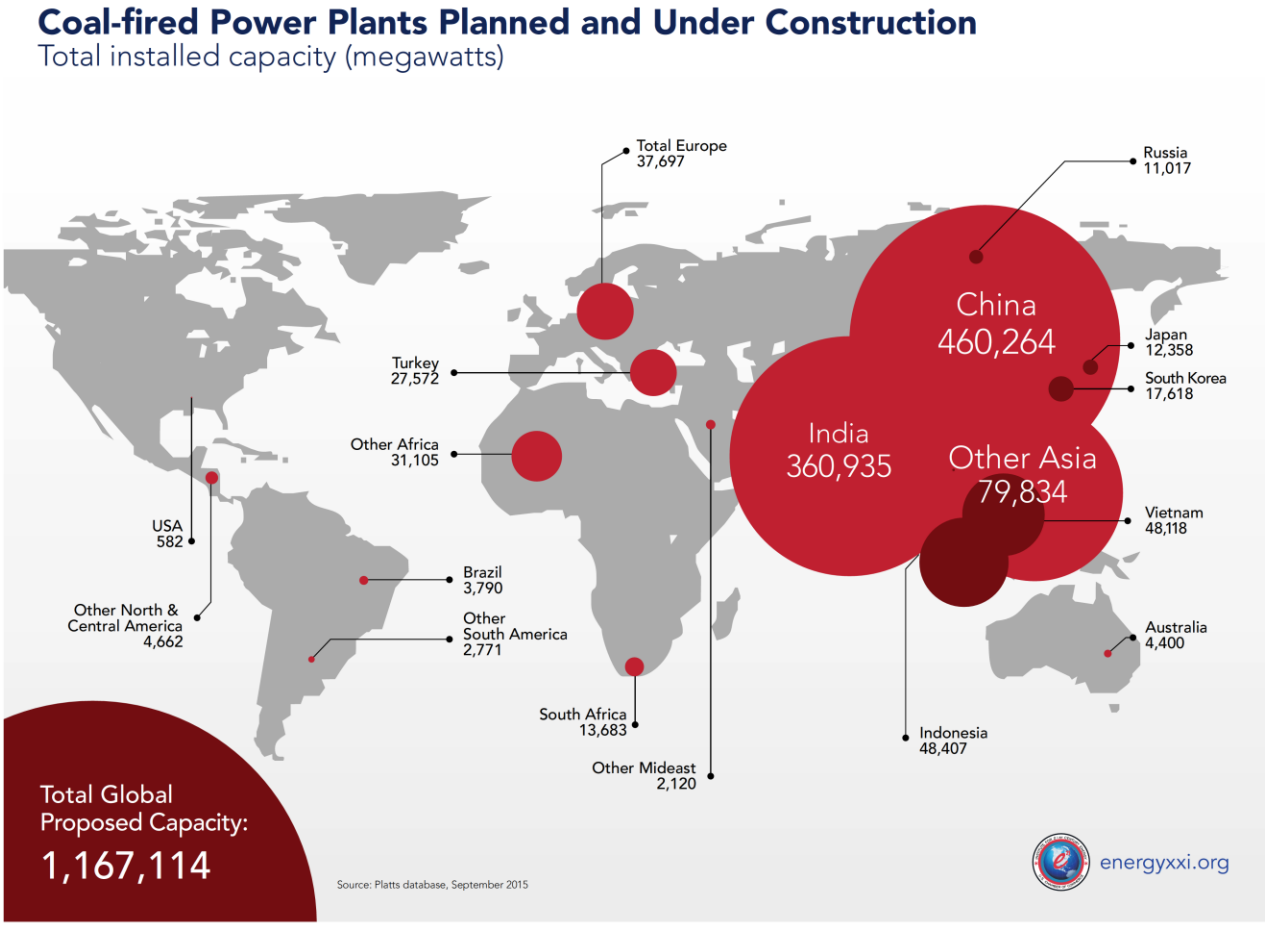
Source: Intergovernmental Panel on Climate Change Fifth Assessment Report scenario database and own aggregation.

Abbreviations: AR4 = Fourth Assessment Report of the Intergovernmental Panel on Climate Change, GWP = global warming potential, INDCs = intended nationally determined contributions.

[13] EPA. 2015. Regulatory Impact Analysis for the Clean Power Plan Final Rule. Available at: http://www2.epa.gov/sites/production/files/2015-08/documents/cpp-final-rule-ria.pdf.

China and India alone account for 70% of the total coal capacity under construction or planned, and Asia about 89%. The capacity of natural gas- and oil-fired power stations also is expected to grow considerably over the next few years, by about 565 billion and 50 billion watts, respectively. This building spree is not the kind of activity one would expect to see in a carbon constrained world—even green Europe is building coal plants (and is a growing market for U.S. coal exports).

Figure 3.



5. Under Administration's INDC, U.S. will Leak GHG Emissions—and Jobs and Industries—to Other Countries

It is important to note that despite these costs, EPA admits that its Clean Power Plan, the heart of the U.S. INDC, will have no discernible impact on the climate, and that all of the

benefits will come from reductions in other pollutants EPA already regulates within a margin of safety.

The administration's plan will be ineffective largely because any emissions reductions achieved will be more than offset by increases in emissions from other countries, in particular developing countries. Addressing climate change will be of considerably less interest to these countries, where the main priority of governments is poverty eradication.

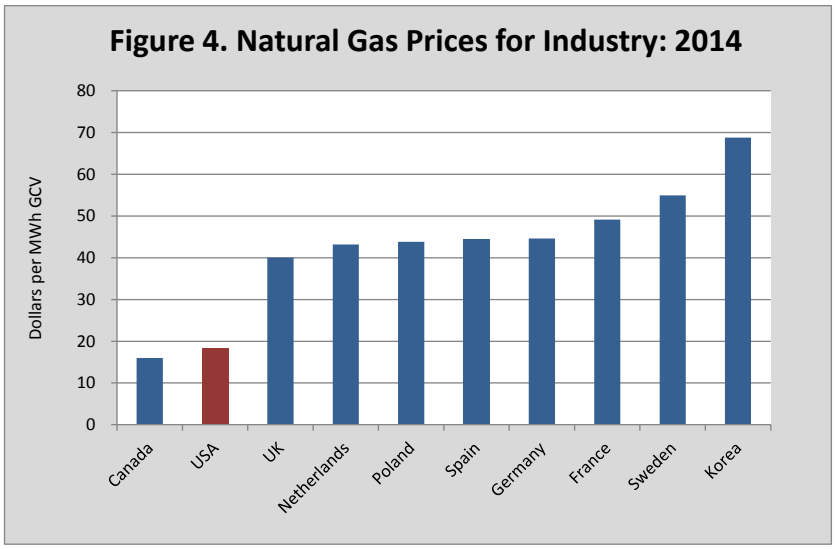
Another reason GHG emissions in these other countries would continue to grow is because of "carbon leakage" from the U.S. as energy intensive industries flee to more countries with less regulation and lower energy costs. It is well understood that America's abundance of affordable, reliable energy provides businesses a critical operating advantage in today's intensely competitive global economy. Figures 4, 5 and 6 illustrate the comparative energy advantage in natural gas and electricity prices for U.S. industry compared it its OECD competitors. Affordable and reliable fuel and electricity, supplied by a diverse mix of coal, nuclear, and increasingly natural gas, give American industry an enormous economic edge, and they are driving a manufacturing revival in areas of the country desperately in need of jobs and investment.

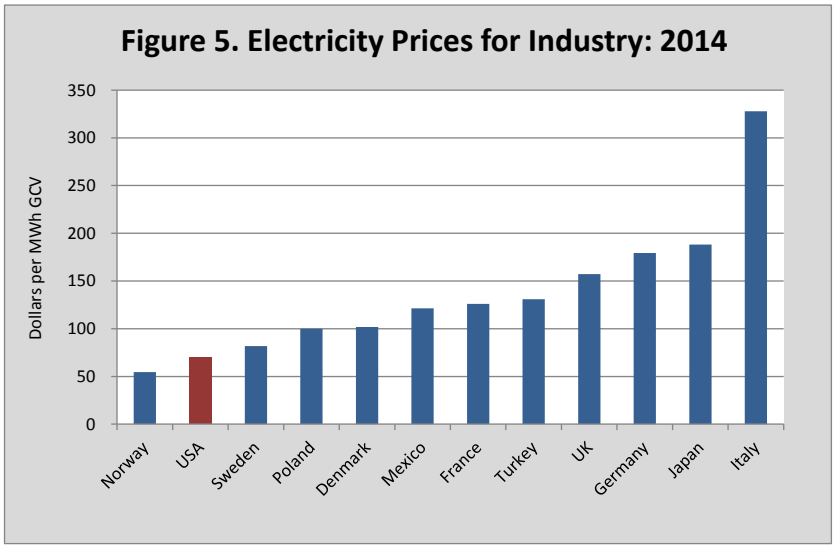
Unfortunately, EPA's Clean Power Plan and other burdensome EPA regulations threaten to throw away this national energy advantage. Instead of attracting foreign investment to the United States, EPA rules could repel this investment into the United States and perhaps even force U.S. companies to shift their investment focus overseas.

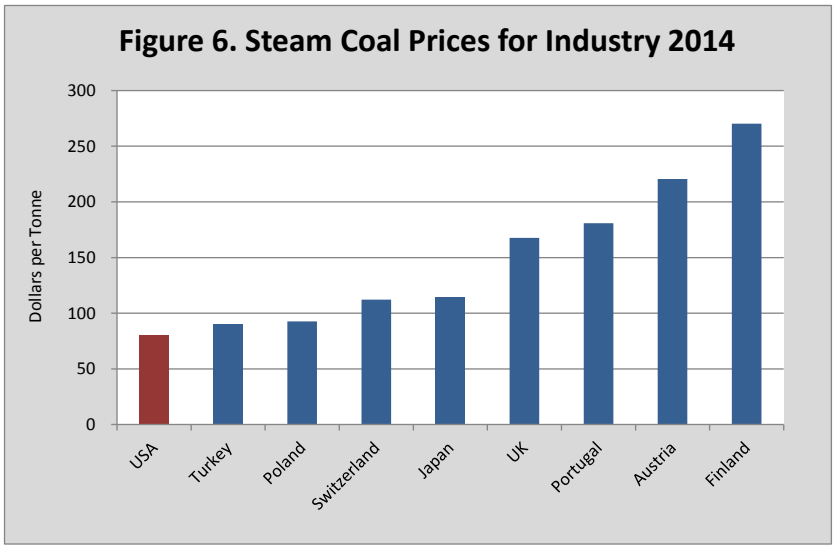
Because U.S. businesses compete on a global scale, the electricity and related price increases resulting from EPA's rule will severely disadvantage energy intensive, trade-exposed industries such as chemicals, manufacturing, steel, and pulp and paper. As a result, GHG emissions would not be reduced in the global sense, but simply *moved* to other countries that have not implemented similar restrictions.

Europe provides a cautionary tale. According to the Energy Information Administration, Europe's residential electricity prices have increased at a much faster rate than in the United States.[14] Regulatory structures—including the Emissions Trading System, taxes, user fees, large (and unsustainable) subsidies and mandates for renewable energy technologies, and the mix and cost of fuels—all conspire to make Europe's electricity prices among the highest in the world.

[14] Energy Information Administration. 2014. "European residential electricity prices increasing faster than prices in United States." Today in Energy. Available at: http://www.eia.gov/todayinenergy/detail.cfm?id=18851.







Source: International Energy Agency, *Key World Energy Statistics 2015*.

That continent's exorbitant energy prices, largely policy-driven, are ruining its competitiveness and turning energy-intensive industries into endangered species. More and more, we are seeing European companies fleeing sky-high energy costs and shifting production to the United States and other countries.

This is consistent with the conclusion of the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment report, which found that actions governments took to implement the Kyoto Protocol resulted in economy-wide leakage on the order of 5% to 20%, not insignificant amounts.[15] Similar results could be expected in the United States as a result of implementation of the U.S. in general, and EPA regulations in particular.

6. Trust but Measure, Report, and Verify Activities

An issue that does not receive the attention it deserves is measuring, reporting, and verification of climate policies. As things stand now, the system of MRV that is likely to come out of Paris will focus not on whether a country meets its emissions goal, but on whether it implements the policies and measures designed to meet its goal. In other words, MRV is more about process than results.

Most of the burden of MRV will, as it should, fall on governments. Like other developed countries, the United States has a long history of reporting on its climate change-related activities through its national communications to the UNFCCC. Where MRV is expected to impose or lead to obligations on companies, the UNFCCC should consult with business to design reliable MRV procedures. In particular, business would like to be able to count on existing experience and reporting procedures and to avoid redundant, overlapping, ambiguous, or needlessly expensive or burdensome requirements.

MRV will be especially challenging in developing countries. Transparency is a key to open markets and planning, and businesses will be reticent to invest in developing economies without assurances that its investments in emission reduction and offset projects are real and that government activities in support of INDCs have integrity.

As the recent revelation that the Chinese have been low-balling its coal usage demonstrates, however, that there is still a lot we take for granted. If a sophisticated country like China cannot keep track of something as rudimentary as coal consumption, what can we expect from other governments with fewer resources and capacity? And even the best MRV system will fall short if it is applied to countries whose social systems and economies that do

[15] IPCC Working Group III. 2007. *Climate Change 2007 - Mitigation of Climate Change*. Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Available at: http://www.ipcc-wg3.de/assessment-reports/fourth-assessment-report/.files-ar4/SPM.pdf.

not function under the rule of law and other legal and social norms that exist in advanced democracies.

7. Intellectual Property Rights Under Assault

The Convention also states that Annex II Parties, a sub-set of Annex I Parties that includes the United States, "shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention."

Developing countries have used this provision deftly to justify their attempts to weaken intellectual property rights (IPR) protections, ostensibly to remove the supposed "barriers" to technology transfer raised by IPR. Compulsory licensing and a fund supported by developed countries to buy down IP are two of many proposals being bruited.

For example, one option in the most recent (11 November) draft text of the Paris agreement says that ". . . developed country Parties shall provide financial resources . . . to meet the full costs of IPRs of environmentally sound technologies, know-how and such technologies will be provided to developing country Parties *free of cost* in order to enhance their actions to address the adverse effects of climate change" [emphasis added].[16] Similar optional language appears in other sections of the text, as well.

IPR serve as a fundamental catalyst of innovation, and study after study has shown that it is not a barrier to technology transfer. A weakened IPR regime such as that being proposed above would provide precious little incentive for companies to invest in advanced technologies if after years of research and development and millions or even billions of dollars invested, their inventions could be expropriated outright by companies in developing countries and manufactured and sold around the world at reduced cost. Under such a circumstance, some of the most innovative companies in the developed world would simply abandon the development of advanced energy technologies.

The United States should continue to encourage the proper environment for technology commerce, cooperation, and investment in developing countries—*e.g.*, transparent markets, the rule of law, property rights, *etc*. Developing countries must be convinced that intellectual property rights protections are in their interests as well as ours, and that technology commerce is technology transfer. The Chamber and other businesses and business groups have in the past urged U.S. negotiators to join with their colleagues from Europe, Japan, and other developed countries in declaring that any weakening of intellectual property would be unacceptable.

[16] UNFCCC Ad Hoc Working Group on the Durban Platform for Advanced Action. 2015. *Draft agreement and draft decision on workstreams 1 and 2 of the Ad Hoc Working Group on the Durban Platform for Enhanced Action*. ADP.2015.11.InformalNote. Available at: http://unfccc.int/resource/docs/2015/adp2/eng/11infnot.pdf.

8. Climate Finance—Show Us the Money

Financing issues are among the most controversial in the UNFCCC, and they could derail a Paris agreement. Many developing country INDCs, either in whole or in part, are conditioned on financial support and technology transfer (India's INDC, for example, carries a price tag of $2.5 trillion).

The Green Climate Fund (GCF) was proposed at COP-15 in Copenhagen in 2009, refined in subsequent meetings, and became operational in 2014. GCF aims to provide support to developing country efforts to reduce their GHG emissions and to adapt climate change. To date, about $10.2 billion has been pledged to GCF, with about $5.9 billion has been "announced and signed." The President affirmed a pledge of $3 billion over four years ago during the G-20 meeting in Australia in 2014, and his administration requested $500 million for the GCF in its fiscal year 2016 budget.

Developed countries in Copenhagen also committed to "mobilizing jointly USD 100 billion a year by 2020 to address the needs of developing countries." This is supposed to be "new and additional" money, not money moved from other funds. While many developing countries see most of this as government-to-government funding,[17] developed countries have implied that most funding will come from private sector sources leveraged by government money.

Moreover, developing countries view this $100 billion figure for 2020 as "only the starting point for the post-2020 period and not the ending point."[18] Draft negotiating text[19] suggests this sum should be scaled up predictably after 2020. How much? The text is silent on this, but submissions to the UNFCCC suggest some Parties are seeking quite a bit more than $100 billion. For example, the African Group supports ramping funding up to $600 billion by 2030.[20] China has proposed that, "Commitments by developed country Parties on providing finance, technology and capacity-building support to developing country Parties shall be of the same legal bindingness as their mitigation commitments," and it has called for developed countries to

[17] According to the Like-Minded Like-Minded Developing Countries (LMDC) group, "Public financing could leverage private finance and other sources but should remain the primary vehicle." See: LMDC. 2014. "LMDC Views on Identification of Elements in ADP Workstream 1." Available at: http://unfccc.int/files/documentation/submissions_from_parties/adp/application/pdf/adp2-3_lmdc_workstream_1_20131118.pdf. The LMDC group consists of Algeria, Argentina, Bolivia, Cuba, China, Democratic Republic of the Congo, Dominica, Ecuador, Egypt, El Salvador, India, Iran, Iraq, Kuwait, Libya, Malaysia, Mali, Nicaragua, Pakistan, Philippines, Qatar, Saudi Arabia, Sri Lanka, Sudan, Syria, and Venezuela.

[18] *Ibid*.

[19] UNFCCC Ad Hoc Working Group on the Durban Platform for Advanced Action. *OpCit.*

[20] African Group. 2014. "ADP Intervention on Finance." Available at: http://unfccc.int/files/bodies/awg/application/pdf/adp2-5_submission_by_sudan_on_behalf_of_the_african_group_finance_20140610.pdf.

provide the GCF "at least 1% of their GDP per year from 2020."[21] For the U.S., 1% of GDP in 2014 works out to around $170 billion.[22]

There is also the question of how this money will be spent. For example, should U.S. funds be used to support projects that increase the efficiency, and therefore the competitiveness, of state-run foreign firms that compete against U.S. companies? These sorts of concerns may become more pronounced as the GCF increases its activities over time.

However these issues and other finance are worked out in Paris, it is clear that a significant portion of the expected funds—certainly tens if not hundreds of billions of dollars over many years—would be coming from public sources and would have to be appropriated by Congress.

9. The Long-Term Global Emissions Goals being Proposed are Unrealistic

Although every expectation is that the Paris agreement will be a bottom-up treaty, a collective long-term goal is under discussion, too. Most of the proposals are in the range of a 40% to 70% reduction in global GHG emissions from the 2010 level by 2050, with net zero emissions being achieved within a decade or two after that. Characteristic of these is the European Union's proposal calling for a 60% cut in global GHG emissions below their 2010 level by 2050.

A global goal of such a magnitude is completely unrealistic. It would require cuts in emissions in developing countries that they are unwilling to make and developing countries would be would be unwilling to pay for. Even if, for example, all developed countries cut their emissions to "0" by 2050—which will not happen—total emissions from developing countries, which are expected to their combined populations grow by more than 2 billion people, would still have to be about one-third lower than they were in 2010, and so would emissions per capita.[23] But even that would not be enough. They also would have to avoid future emissions of around 30 billion TCO_2 eq. (more than five times current U.S. GHG emissions). Put another way, to reach a 60-by-50 goal even if developed countries emissions collapse to zero in 2050, all of the additional economic activity in developing countries in 2050 compared to 2010—all the energy use, industrial processes, agricultural activity, *etc*.—would have to be zero-emitting or have their emissions offset in some way.

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[21] Government of China. 2014. "China's Submission on the Work of the Ad Hoc Working Group on Durban Platform for Enhanced Action." Available at: http://unfccc.int/files/bodies/application/pdf/20140306-submission_on_adp_by_china__without_cover_page.pdf.

[22] Department of Commerce, Bureau of Economic Analysis. "Current-Dollar and 'Real' Gross Domestic Product." Available at: http://www.bea.gov/national/xls/gdplev.xls.

[23] See, for example: Institute for 21st Century Energy. 2015. "The European Union's 2050 Global Greenhouse Gas Emissions Goal is Unrealistic." Available at: http://www.energyxxi.org/european-unions-2050-global-greenhouse-gas-emissions-goal-unrealistic.

Large developing countries understand that accepting such emissions limits would have devastating impacts on their economic progress. Despite many opportunities, large developing countries have never agreed to a binding global emissions goal of this magnitude, and they are almost certain not to do so in Paris. That is unless developed countries pledge they are prepared to foot the bill, something that, given the trillions of dollars in costs involved, developed countries simply cannot do.

Developing countries, therefore, will carry on using affordable fossil fuels to boost economic growth and lift their people out of poverty. For them, cutting GHG emissions will always take a backseat to these goals.

10. The Paris Agreement—With or Without "Legal Force"—Should be Sent to the Senate for its Advice & Consent

The Obama Administration agreed at COP-17 that "a protocol, another legal instrument or an agreed outcome with legal force" would be the outcome of the process set up by the Durban Platform. Based on recent press reports, now it is not so sure, with Secretary of State John Kerry recently telling the *Financial Times* that the Paris agreement is "definitively not going to be a treaty."[24] Adding to the confusion was a subsequent State Department statement reversing course, saying, "Our position has not changed: the U.S. is pressing for an agreement that contains provisions both legally binding and non-legally binding." It has also been suggested that while the national commitments may not be binding, UNFCCC Parties would be legally bound to make such commitments.

COPs traditionally produce two types of documents: decisions and protocols. Would a COP decision in Paris have legal force and satisfy the Durban Platform's requirement? An analysis by Daniel Bodansky, Professor at the Sandra Day O'Connor College of Law at Arizona State University, suggests not:

> *In general, decisions by international institutions such as the COP are not legally binding unless their governing instrument so provides. The UN Charter provides a simple example. Article 25 of the Charter provides that member states shall carry out decisions of the Security Council, so this provision makes Security Council decisions legally binding. But otherwise, decisions by UN organs are not binding on the member states. Similarly, a COP decision could be legally binding if there is a "hook" in the UNFCCC that gives it legal force. For example, Article 4.1 of the UNFCCC requires parties to use for their greenhouse gas inventories 'comparable methodologies to be agreed upon by the COP'. But, otherwise, COP decisions are*

[24] Demetri Sevastopulo and Pilita Clark. 2015. "Paris climate deal will not be a legally binding treaty." *Financial Times*. Available at: http://www.ft.com/intl/cms/s/0/79daf872-8894-11e5-90de-f44762bf9896.html#axzz3rIYCX0pp.

> *not legally binding, so a COP decision, by itself, would not satisfy the Durban Platform's mandate that the Paris outcome have legal force*.[25]

Certainly, the Parties have not behaved as if COP decisions are in any way legally binding.

Protocols, on the other hand, tend to be internationally-recognized as supplements to existing treaties that require ratification. The 11 November draft Paris agreement text cited earlier[26] certainly contemplates a ratification process similar to those for the UNFCCC itself and the Kyoto Protocol. So if the Paris agreement is intended to have more legal force than a COP decision but less legal force than a Protocol, then what exactly will it be?

At any event, an agreement of such consequence to the U.S. economy and employment that would essentially set the broad outlines U.S. climate policy for more than a decade and might call for billions of dollars in assistance should be submitted to the Congress regardless of whether it has legal force or is merely political in nature. Without the Senate, at a minimum, reviewing the Paris agreement (and both the House and Senate weighing in on the U.S. INDC), it is hard to see how anything signed by the United States in Paris will be binding, either politically or legally, on future administrations and Congresses. We went down that road with the Kyoto Protocol, and it did not work out very well.

Conclusion

Business needs a predictable environment in which to operate and plan. Unfortunately, the administration's INDC adds to the already large uncertainty surrounding a new international agreement and would result in higher energy prices for American businesses and consumers. Its INDC does not provide any guidance in how it intends to meet its goal of a 26% to 28% reduction in net GHG emissions by 2025 from the 2005 level. By our estimates, emissions reductions due to existing and proposed regulations would fall short of the administration's goal by 800 million TCO_2 eq., or 45% of the total goal. Clearly, the administration anticipates that the industrial sector will have to make up for a big chunk, but by no means all, of this shortfall. But without any detail, neither domestic stakeholders nor Parties to the UNFCCC know how this gap might be filled.

Moreover, based on what we have seen so far, large emerging economies have shown very little interest in reducing emissions in any meaningful way, certainly nothing coming close to what the administration is proposing for the United States. An agreement locking such disparities in emissions pledges into place would jeopardize America's energy advantage and

[25] D. Bodansky. 2015. "Legally Binding versus Non-Legally Binding Instruments." In: Scott Barrett Carlo Carraro and Jaime de Melo, eds. *Towards a Workable and Effective Climate Regime.* VoxEU eBook (CEPR and FERDI). Abstract available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2649630.
[26] UNFCCC Ad Hoc Working Group on the Durban Platform for Advanced Action. *OpCit.*

leak U.S. industries, their jobs, and their emissions overseas. As a result, the U.S. will see no environmental gain for a great deal of economic pain.

And to what purpose? Christiana Figueres, Executive Secretary of UNFCCC, recently had this to say about the goal of the UNFCCC: "This is the first time in the history of mankind that we are setting ourselves the task of intentionally, within a defined period of time, to change the economic development model that has been reigning for at least 150 years, since the Industrial Revolution."

The same economic system the UNFCCC Secretary wants to discard is the same model that produced the largest flourishing of human health and welfare in all of human history. In the past two to three decades, in particular, there has been tremendous improvement in the lot of people throughout the world owing in large part to greater economic freedom and access to modern energy services. The rest of the world understands that affordable, available, and scalable energy is the not the problem, it is the solution.

Finally, the administration's insistence on not consulting with the Congress or with stakeholders ensures that U.S. political backing for the Paris agreement will remain weak. Back in 1997, the Clinton Administration disregarded clear guidance from the Senate, the Byrd-Hagel Resolution,[27] and signed the Kyoto Protocol, a treaty it knew was political poison and that it never bothered to submit to the Senate for ratification.

Judging from this latest episode in U.S. climate diplomacy, the Obama Administration looks set to repeat the mistake of signing onto a lopsided deal and making promises future presidents and Congresses may be neither willing nor able to keep. As the late, great Yogi Berra might have said, "It's déjà vu all over again."

[27] Senate Resolution 98. 1997. 105th Congress. Available at: https://www.congress.gov/bill/105th-congress/senate-resolution/98/text.

Biography of
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Stephen D. Eule is vice president at the U.S. Chamber of Commerce's Institute for 21st Century Energy (Energy Institute). Mr. Eule is an experienced voice on the nexus between energy, climate change, and technology. He travels around the world to speak with business, governments, think tanks, and the media in a variety of forums.

Mr. Eule oversees the collection and analysis of data on energy and climate and the impact of technology in the energy industry. He represents the U.S. Chamber in the UN Framework Convention on Climate Change and helped found the Major Economies Business Forum on Energy Security and Climate Change, a coalition of national cross-sector business organizations from major economies for which the Energy Institute acts as secretariat. Mr. Eule also is responsible for the Energy Institute's two annual and authoritative energy security reports—the *Index of U.S. Energy Security Risk* and the *International Index of Energy Security Risk*. These risks indices represent the first and most comprehensive efforts to quantify energy security risks over time and across a wide range of measures. They have been cited by the International Energy Agency and are used by universities and think tanks across the world.

Previously, Mr. Eule was director of the Office of Climate Change Policy & Technology at the Department of Energy (DOE). There he oversaw the development of the *U.S. Climate Change Technology Program Strategic Plan in 2006*, ran President Bush's Climate VISION program, and testified before Congress on DOE climate and energy programs. Internationally, Mr. Eule represented DOE as part of the U.S. government delegations to the Intergovernmental Panel on Climate Change, the G20, and other multilateral forums. He was lead chapter author on the *U.S. Climate Action Report—2006* and contributed to other government publications.

His prior experience includes a decade working in various public policy positions. He was a subcommittee staff director on the House Science Committee and served as legislative director for Rep. Nick Smith (R-MI). In addition, Mr. Eule was an environmental analyst in the Washington, D.C., office of New Jersey Gov. Christine Todd Whitman (R-NJ). Earlier, he worked for eight years as an Orkand Corporation consultant to the Energy Information Administration and worked at the Heritage Foundation.

Mr. Eule earned a Master of Arts degree in geography from The George Washington University and a Bachelor of Science degree in biology from Southern Connecticut State College.