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Climate Change: Building A Framework For The Future

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With the Group of Seven nations pledging earlier this year to decarbonize their economies by 2100, expectations are high that the UN Climate Change Conference in Paris from Nov. 30-Dec. 11, 2015, will produce a global treaty. Yet our memories are littered with failed climate change negotiations of the past, and many remain skeptical whether the forthcoming fortnight of talks in the French capital will be any different. So what would constitute a success and what would failure look like? And what should the world of business and finance expect from an agreement in Paris, at the 21st Conference of the Parties (COP21) to the UN Framework Convention on Climate Change?

Overview

- The aim of COP21 is to reach a global agreement that will combat climate change effectively and boost the transition toward a resilient and low-carbon global economy.
- A successful agreement would limit greenhouse gas emissions, forestalling a rise in the average global temperature by no more than 2 degrees Celsius.
- National and international regulations arising from such an agreement would have major repercussions for carbon-intensive sectors, in particular power generation and coal mining.
- Financing the transition will need to rely on private investment aimed at low-carbon technologies such as renewables and energy efficiency as well as carbon-pricing mechanisms to provide the necessary incentives.

Some have argued that success at COP21 won't be and shouldn't be a legally binding treaty to curb global emissions. Instead, they argue, success would be a flexible, high-level political framework that allows for bottom-up national pledges (the so-called intended nationally determined contributions or INDCs). Countries would then translate their pledges into national policies to decarbonize their global economies by 2100 (source: Carbon Tracker Initiative, "What will success for Paris, COP 21 look like?").

Many countries have made commitments to date, creating optimism about the chances for an agreement. However, as many commentators have noted, the sum of these commitments doesn't bring down carbon emissions enough to limit the average global temperature rise to 2 degrees Celsius, relative to pre-industrial levels.

As a mechanism to address this, the proposed agreement contemplates periodic revisions to the national commitments, say every five years, akin to those in recent EU environment and energy legislation. The rationale behind this mechanism is that in the meantime, developments in science, technology, and funding will allow for more ambitious commitments in the future.

Global Warming By Numbers

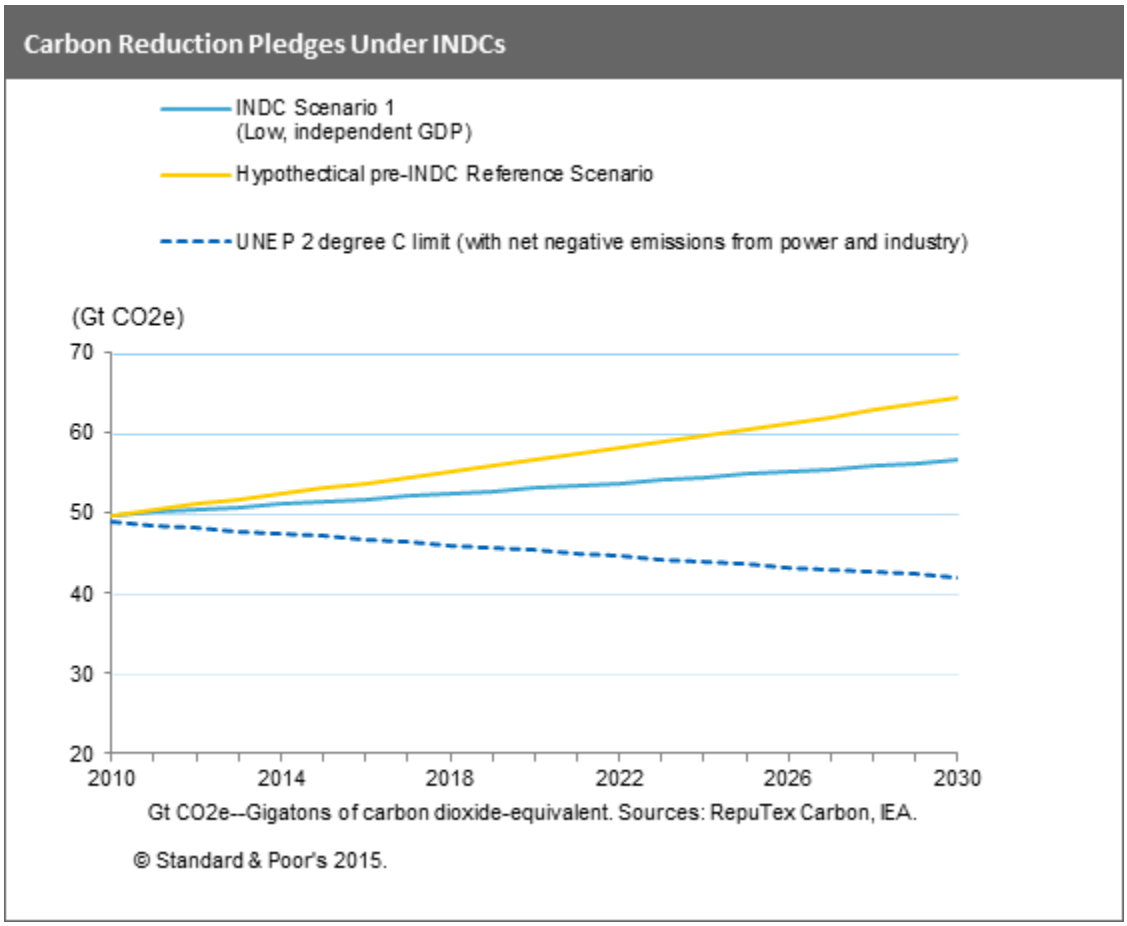
As of Oct. 30, 2015, a month before the start of the Paris talks, more than 150 countries, led by China, the U.S., and the EU, had released their INDCs accounting for 90% of global energy-related emissions. The UN estimates these pledges,

which are to be set in stone by world leaders attending the climate change summit, could limit the average global temperature rise to around 2.7 degrees by 2100. While the scientific consensus argues this is by no means enough, such a reduction is nonetheless is a lot lower than the estimated 4, 5, or more degrees of warming that many previously projected (source: "Synthesis report on the aggregate effect of the intended nationally determined contributions," UNFCCC, Oct. 30, 2015).

Global temperatures have already risen by nearly 1 degree since the industrial revolution amid increasing greenhouse gas (GHG) emissions that mostly come from burning fossil fuels such as coal, oil, and gas. The UN has been holding climate negotiations for more than 20 years to try to curb a steady rise in emissions that reached the equivalent of 49 billion tons of carbon dioxide in 2010.

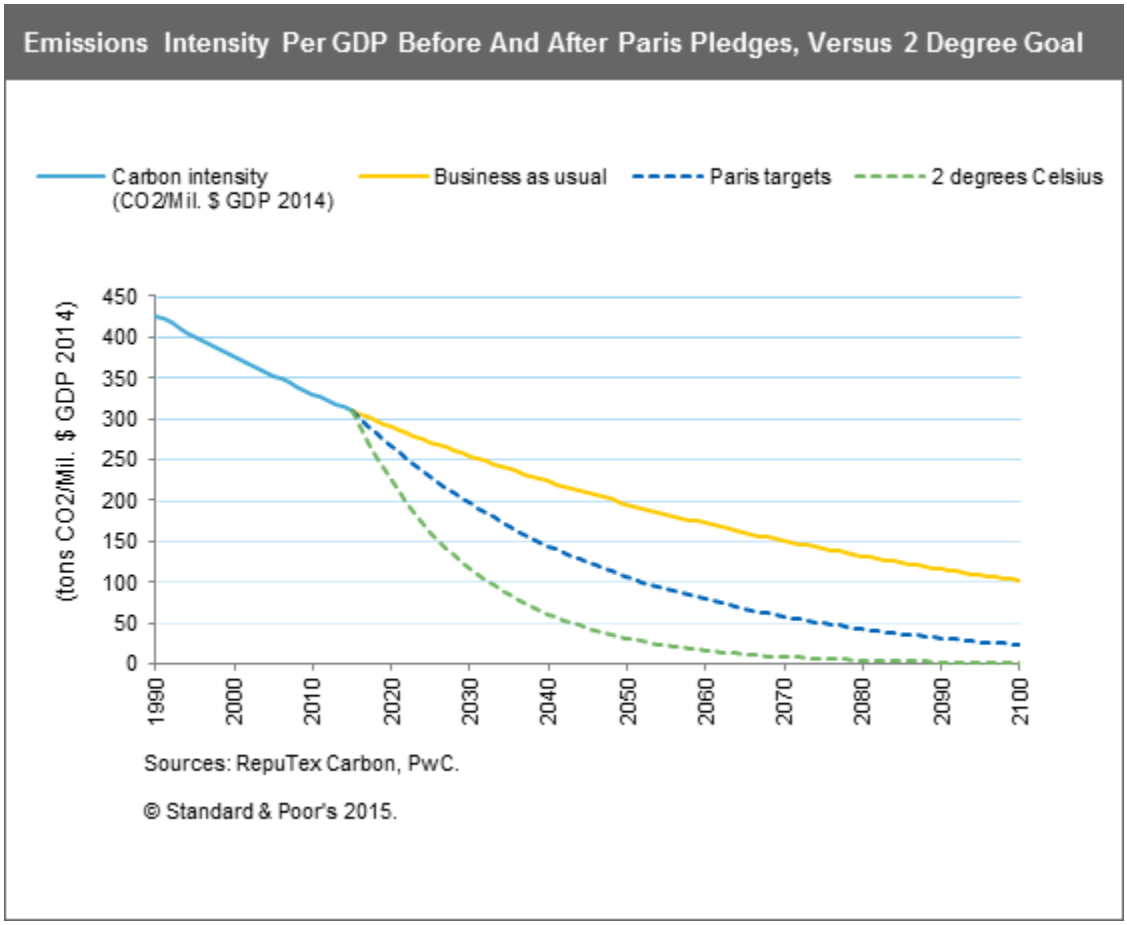
The pledges so far imply emissions rising to 56.7 gigatons of CO2-equivalent by 2030. That's nearly 4 billion tons less than without the INDCs, but still about 15 billion tons more than what the latest scientific report from the UN's Intergovernmental Panel on Climate Change suggests is needed to have a reasonable chance of avoiding 2 degrees of warming (see chart 1). To be sure, INDCs are a measurable improvement and may help global emissions peak sometime after 2030. However, reaching the 2 degree goal requires emissions to peak earlier than that.

Chart 1



Another way to portray emissions growth is the amount of energy consumed per unit of GDP, or emissions intensity, which has been reducing by about 1.3% a year over the past 15 years. It is argued that the rapid decoupling of emissions from economic growth is essential to avoid the worst impacts of climate change. The Paris pledges should further this reduction to about an annual 3%, whereas a carbon-neutral pathway by the end of the century would necessitate an annual 6% to 7% reduction (source: PwC, "Low Carbon Economy Index 2015: Conscious uncoupling?"; see chart 2).

Chart 2



The Drive Toward Decarbonization: The Implications

If we look at the 2020 emissions reductions pledges that China, the U.S., and the EU have made so far, China's don't go beyond the "business as usual" projections that the International Energy Agency has made (what it calls its "Central Scenario"). Although the EU doesn't need to take additional action to reach its 2020 target, the projections do show a significant gap against its 2030 target. The EU nevertheless plans to adopt more policies to comply with its Energy Efficiency Directive, implement structural reforms to the cap-and-trade program to revive the carbon dioxide (CO2) market price, and decide on a post-2020 CO2 target for carmakers. Europe's finance ministers have recently endorsed the EU's stance on climate finance ahead of COP21, reiterating the region's ambition to push for a strong signal to the

private sector to decarbonize investment as part of a COP21 agreement.

The U.S. has set the most ambitious 2020 target of the four main global emitters—which also include China, the EU-28, and India. However, the U.S. has not yet implemented policies to reach that target, including the Clean Power Plan that was finalized just last month as well as methane reduction targets. Beyond 2020, regulations issued by the government's Environmental Protection Agency (EPA) may not be enough, and the strong Republican majority currently in Congress makes any bold move on carbon-cutting policies very unlikely.

What's the possibility that some governments will up the ante? Some parties have said that they would set tougher targets, with the EU moving to -30% by 2020, instead of -20%, if COP21 reaches a binding and ambitious agreement. However, we believe that this is highly unlikely, considering that current 2020 targets are far below the levels needed to meet the 2 degree objective.

Energy production and use account for two-thirds of the world's GHG emissions, according to the IEA, meaning that the pledges made at COP21 must bring deep cuts in these areas, while sustaining growth of the world economy (source: the IEA's "World Energy Outlook Special Report," 2015). The use of low-carbon energy sources is already expanding rapidly, and signs point to a gradual decoupling of energy-related emissions and GDP growth. The IEA predicts the share of global low-carbon power generation will grow to almost 45% in 2030, resulting in a flattening out of power emissions--despite an increase in electricity demand by more than 40%.

What's becoming clearer is that many INDCs target fossil fuel producers--especially coal companies. Coal-fired power generation is coming under increasing scrutiny, as countries try to decarbonize, with many INDCs putting regulation of coal front and center—like China's. The country's stall in coal consumption is the main reason their emissions growth slowed in 2014, although recent reports suggest that coal-related carbon emission reductions may have been somewhat exaggerated. Nonetheless, the economic slowdown in China and the country's explicit policies to restrict coal use mean that the massive growth in coal demand that had been assumed until as recently as last year has all but evaporated from outlooks. As a result, China's emissions may reach its highest point well before their goal of 2030, which would help global emissions peak sooner rather than later. Although it is far too early to tell, some even hope that China's coal use may have already peaked, despite annual GDP growth of more than 7%. Although economic and emissions data must be treated with caution in China, it does appear that in 2014 at least, the country was able to decouple emissions from growth.

The IEA has recently laid out a Bridge Scenario for a peak in global energy-related emissions by 2020 that could provide the best chance to keep global warming below 2 degrees. It relies solely on proven technologies and policies, without changing the economic and development prospects of any region. The catch is that immediate action is required to 1) increase energy efficiency; 2) reduce the least-efficient coal-fired power plants and ban new construction; 3) increase renewable investment; 4) phase out fossil-fuel subsidies, and 5) reduce methane emissions. For such a scenario to work, coal use would peak before 2020 and then decline, with oil demand rising to 2020 and then plateauing. Importantly, China would decouple its GDP from emissions growth by around 2020, much earlier than expected. Others, like the U.S., would significantly accelerate the decoupling of economic growth and emissions under this scenario.

Financing The Transition

In its latest World Energy Outlook released this week, the IEA estimates investment of $13.5 trillion in low-carbon technologies and efficiency is required to 2030 just to meet the COP21 pledges to keep below 2.7 degrees of warming. A key question to be hammered out in Paris is the amount of financing that developed-country parties to the negotiations may be willing to provide to developing-country parties, and under what kind of terms. While no amounts have been floated in the run-up to COP21, the figure of US$100 billion a year from 2020 was proposed at COP15 in Copenhagen in 2009. While some commentators argue that this figure may be insufficient to cap the rise in the average global temperature to 2 degrees, it is promoted as essential in helping bridge the gap. As a way to decarbonize the global economy, the negotiators will also consider how big a role energy efficiency programs can play, how to lower the cost of capital for renewables and infrastructure (such as transport), and how to develop effective carbon-pricing mechanisms.

Several countries state in their INDCs that their level of commitment is conditional upon having access to an international carbon market, under negotiation for the immediate post-Paris era. Overall, nearly 80 INDCs mention the use of carbon markets, while over half submitted to date plan to use or are considering the use of market mechanisms.

An increasing number of jurisdictions are implementing domestic climate policies and, more specifically, are pricing GHG emissions. In most cases, carbon pricing policies take the form of an emissions trading system (ETS), but some jurisdictions have also implemented carbon taxes. To date, 55 jurisdictions, including 35 national and 20 subnational jurisdictions, have implemented an ETS as a way to put a price on carbon. By early 2015, jurisdictions accounting for 40% of global GDP had introduced an ETS (source: International Emissions Trading Association, "The 2015 Paris Agreement, Carbon Pricing and Markets: Connecting the Dots," November 2015).

Renewable energy, meanwhile, accounted for nearly half of all new power generation capacity in 2014, led by growth in China, the U.S., Japan, and Germany, with investment remaining strong (at $270 billion) and costs continuing to fall. Since 2009, the levelized cost of electricity from solar photovoltaic (PV) has come down by more than 60%, while that of onshore wind has fallen 15%.

Private-sector investors will, in our view, require strong incentives to finance the transition to a low-carbon economy. Among other things, this involves a carbon price that is high enough to re-orient funds from fossil-fuel heavy industries to low-carbon technologies and the clean energy sector. For this to happen, policies and regulation geared toward decarbonization would have to ensure that carbon-intensive assets effectively become regarded as "stranded," that is, have no future economic value.

The recognition of carbon as a significant risk and an integral part of financial investment planning has been acknowledged by the Bank of England and other organizations for some time. The negotiations in Paris will be followed very closely. It is an opportunity for political leaders to provide a vibrant sign of exactly how much and in what ways they expect the world's governments and economies to tackle the risk.

No Going Back

It has been argued that an agreement in Paris this December will mark a critical turning point in the effort to tackle climate change, where most countries in the world will accept the need to take action regardless of whether or not some other group or block of countries acts first. The expectation is that they will seal this consensus with a global political agreement.

If governments are to send strong signals in support of long-term strategies and priorities to support movement toward low carbon and resilience, then financing will be a key issue that must be unblocked for there to be agreement in Paris.

Commitments within an internationally agreed framework could provide the common norms that will allow actions by sovereign states to link up and unlock the finance necessary to decarbonize the world's economy. This could be through the promotion of linkages between established carbon pricing mechanisms and markets. Carbon market linkages allow for efficiencies in emission reduction activities to be identified beyond borders and can attract investment where emissions reductions occur at the lowest cost. This could accelerate clean energy investment at the scale needed to meet the world's ambitious decarbonization goals.

Paris may well usher in the necessary policy and regulatory infrastructure for action. While COP21 may not achieve a 2 degree outcome, the necessary impetus to get there is gaining momentum. That should be considered a success, of sorts.

Appendix: The UNFCCC and the Kyoto Protocol

Established in 1992, the UN Framework Convention on Climate Change provided a platform for sovereign states to consider how they could limit average global temperature increases. This was followed by the Kyoto Protocol, a separate international agreement adopted 18 years ago, which attempted to bind developed countries to emission reduction targets. The Protocol, which covered around 10% of global emissions, was neither universal in application nor ratified by the U.S. The Protocol's first commitment period started in 2008 and ended in 2012. The second commitment period began on Jan. 1, 2013, and will end in 2020.

Related Criteria And Research

- How Environmental And Climate Risks Factor Into Global Corporate Ratings, Oct. 21, 2015
- Climate Change Will Likely Test The Resilience Of Corporates' Creditworthiness To Natural Catastrophes, April 20, 2015
- For The U.S. Economy, Climate Change Is A Case Of Pay Now--Or Pay More Later, Sept. 18, 2014
- Climate Change Could Sting Reinsurers That Underestimate Its Impact, Sept. 3, 2014
- Dealing With Disaster: How Companies Are Starting To Assess Their Climate Event Risks, May 21, 2014
- Climate Policy And The Rise Of Carbon Markets, May 19, 2014
- Environmental Regulation Starts To Squeeze Utilities' Credit Quality, Nov. 14, 2012
- Credit FAQ: What The Durban Climate Change Talks Could Mean For Clean Energy Investment And Carbon-Intensive Industries, Dec. 21, 2011

- Q&A: Did The Cancun Summit Bring Global Action On Climate Change A Step Closer? Dec. 20, 2010
- Q&A: Successes And Shortcomings From Copenhagen's Climate-Change Conference, Jan. 12, 2010

We have determined, based solely on the developments described herein, that no rating actions are currently warranted. Only a rating committee may determine a rating action and, as these developments were not viewed as material to the ratings, neither they nor this report were reviewed by a rating committee.