CHINA'S CONTRIBUTION TO THE PARIS CLIMATE AGREEMENT

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On June 30, 2015, China formally submitted its intended nationally determined contribution (INDC) to the new global climate agreement to be concluded this December in Paris. China committed to the following actions by 2030:

- Peaking of carbon dioxide emissions around 2030 and making best efforts to peak early;
- Lowering carbon dioxide intensity (carbon dioxide emissions per unit of GDP) by 60 to 65 percent from the 2005 level;
- Increasing the share of non-fossil fuels in primary energy consumption to around 20 percent; and
- Increasing the forest stock volume by around 4.5 billion cubic meters from the 2005 level.[1]

Based on analysis by some of the world's leading energy institutes, China's INDC represents a significant undertaking beyond business-as-usual and will help slow the rise in global greenhouse gas emissions. According to the U.S. Energy Information Administration (EIA), International Energy Agency (IEA), Massachusetts Institute of Technology (MIT) and Tsinghua University, peaking carbon dioxide emissions around 2030 would reduce China's emissions by at least 1.7 Gt or 14 percent from the most optimistic business-as-usual (BAU) scenario (**Figure 1**).[2,3,4]

Figure 1 shows five carbon dioxide emissions forecasts. The top three lines represent different views of BAU, where no new policies are enacted and the status quo is maintained. In these scenarios, China's carbon dioxide emissions continue to rise for the next 20 years or more. By contrast, the bottom two nearly overlapping lines represent scenarios with strengthened or new policies. As a result, emissions peak or plateau at 10 billion metric tons about 2030, when BAU scenarios forecast between 11.7 and 16.5 billion metric tons.

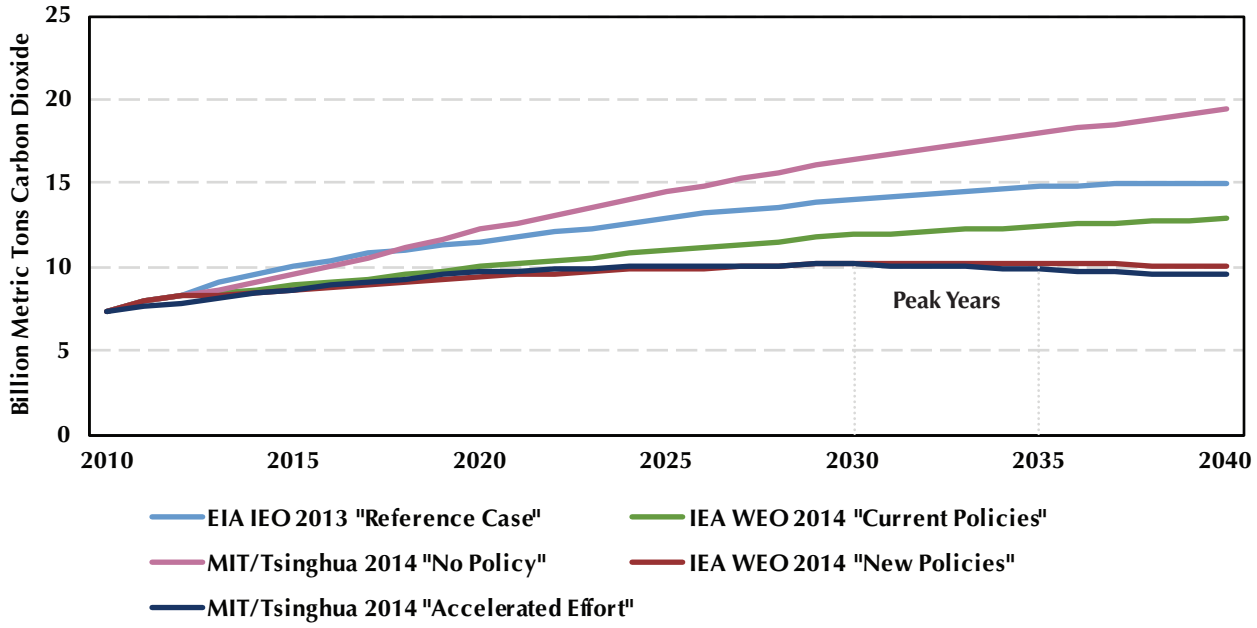
China has set goals to reduce its energy intensity in its last two five-year plans. Additionally, as a party to the Copenhagen Accord, China committed to reducing its carbon intensity (carbon dioxide emissions per unit of GDP) 40-45 percent below its 2005 level by 2020.[5] Its intended goal for 2030—lowering CO_2 intensity 60 to 65 percent from the 2005 level—builds on these goals.

Figure 2 shows how China's carbon intensity generally declines in all scenarios as it transitions from a predominantly manufacturing economy to a more service-based economy.[6]

The IEA's "Current Policies" and "New Policies" scenario, as well as the MIT/Tsinghua "Accelerated Effort" scenario, meet or exceed China's Copenhagen pledge, while only the IEA's "New Policies" and MIT/Tsinghua "Accelerated Effort" scenarios meet the carbon intensity target of the Paris INDC.

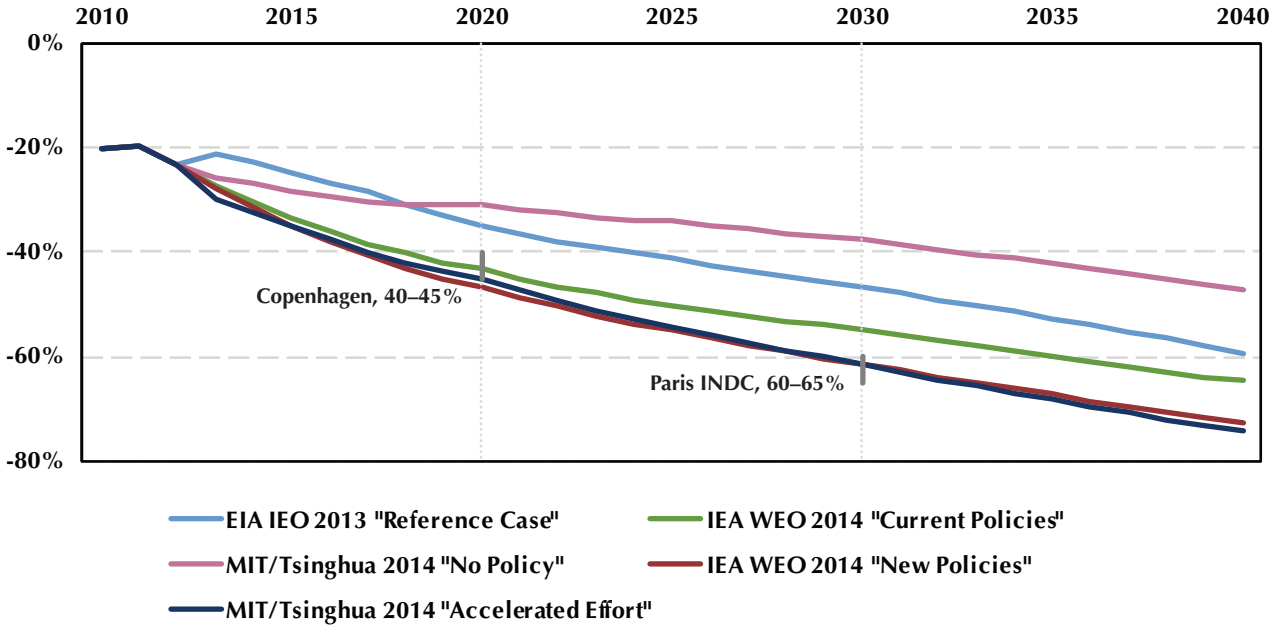
Meeting the Paris INDC requires significantly greater ambition than the most optimistic BAU scenario. China must pursue a wide range of policies to decarbonize and peak its emissions. Notably, China is aiming to peak its coal consumption by 2020 and is attempting to limit the growth of its oil consumption. It intends to grow its share of natural gas, nuclear, hydro and other renewables. Also, energy efficiency gains must be realized across all sectors of the economy. In reality, dozens of policies must be successfully adopted and implemented for China to increase the share of non-fossil fuels in primary energy consumption to around 20 percent.

FIGURE 1: Forecasting China's Carbon Dioxide Emissions



Source: U.S. Energy Information Administration, International Energy Agency, Massachusetts Institute of Technology, Tsinghua University

FIGURE 2: China's Carbon Intensity Reduction Relative to 2005 Levels, Historic and Projected



Source: U.S. Energy Information Administration, International Energy Agency, Massachusetts Institute of Technology, Tsinghua University, Organization for Economic Cooperation and Development Long-term GDP forecast (2005 USD, PPP)

ENDNOTES

1 United Nations Framework Convention on Climate Change, "Intended Nationally Determined Contributions (INDC) Portal." July 2015. Available at: http://unfccc.int/focus/indc_portal/items/8766.php.

2 International Energy Agency, "World Energy Outlook 2014." November 2014. Available at: http://www.worldenergyoutlook.org/publications/weo-2014/.

3 U.S. Energy Information Administration, "International Energy Outlook 2013." July 2013. Available at: http://www.eia.gov/forecasts/ieo/pdf/0484%282013%29.pdf.

4 Zhang, Xiliang et al., "Carbon emissions in China: How far can new efforts bend the curve?" Massachusetts Institute of Technology and Tsinghua University. October 2014. Available at: http://globalchange.mit.edu/CECP/files/document/MITJPSPGC_Rpt267.pdf.

5 United Nations Framework Convention on Climate Change, "Communications received from Parties in relation to the listing in the chapeau of the Copenhagen Accord." 2010. Available at: http://unfccc.int/meetings/copenhagen_dec_2009/items/5276.php.

6 Organization for Economic Cooperation and Development, "Economic Outlook No 95 – May 2014 – Long-term baseline projections." May 2014. Available at: http://stats.oecd.org/Index.aspx?DataSetCode=EO95_LTB#.

CENTER FOR CLIMATE AND ENERGY SOLUTIONS

The Center for Climate and Energy Solutions (C2ES) is an independent nonprofit organization working to promote practical, effective policies and actions to address the twin challenges of energy and climate change.

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