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March 23, 2016

China's Greenhouse Gas and Energy Proposals for 2016-2020

On March 16, 2016, China's National People's Congress adopted a 13th Five-Year Plan (FYP), for 2016-2020, that sets goals of tighter limits on polluting emissions and accelerating a shift away from coal-fired electricity supply toward greater efficiency and non-fossil energy. Questions remain on specific measures to achieve targets—particularly regarding electric grid interconnection and other policy reforms, performance data quality, and effective enforcement. Despite questions about data quality, it appears that China met related goals in its 12th FYP. Some in the U.S. Congress consider the value of U.S. greenhouse gas (GHG) reductions to be partly contingent on China's emissions performance.

Background

The legitimacy of the Communist Party of China depends on continued improvement in the well-being of the people. For decades, well-being was usually measured primarily by economic growth, such as increases to Chinese gross domestic product (GDP) per capita. The emphasis on GDP growth came at the expense of other aspects of well-being, such as healthful air. By the mid-2000s, in the 11th FYP (2006-2010), central policymakers publicly recognized the high costs to China's environmental quality and public health of a growth-at-any-cost focus. Three problems converged:

1. Increasingly severe domestic air, water, and soil pollution and regional water scarcity;
2. International pressure on China (which depends heavily on coal) to reduce its GHG emissions associated with global climate change; and
3. Growing dependence on foreign energy supply.

China's 13th FYP continues a shift toward limiting the adverse environmental consequences of economic development. In a recent press conference, Chinese Vice Minister of Environmental Protection Wu Xiaoqing stated that China "shall not trade environment for GDP growth in the short term, which is not sustainable" (http://news.xinhuanet.com/english/2016-03/07/c_135164022.htm).

China surpassed the United States to become the largest emitter of GHG globally around 2006. It releases more than one-quarter of all fossil-fuel-related carbon dioxide (CO_2) emissions. Halting the increase of atmospheric concentrations of CO_2 would be extremely difficult without China reducing its net emissions to near zero along with other major emitters. Other nations also require China's participation in GHG reductions to avoid adverse effects on trade competitiveness and "leakage" of emissions—that is, activities shifting to locations without comparable controls.

The Chinese government pledged to participate in a global effort to address GHG emissions. In the context of the 2015 Paris Agreement under the United Nations Framework Convention on Climate Change, China pledged to:

- "peak" CO_2 emissions around 2030, perhaps earlier;
- launch in 2017 a national GHG emissions cap-and-trade system covering electricity and five other industries;
- increase the non-fossil share of China's energy to around 20% by 2030;
- lower CO_2 emitted per unit of GDP by 60-65% compared with 2005;
- expand forest stock volume by around 4.5 billion cubic meters; and
- control emissions of hydrofluorocarbons ("HFCs")—another type of potent GHG—by 2020.

China's statement included a host of existing and planned measures to achieve these and additional targets.

Emissions and Energy in the 13th FYP

The 13th FYP ratchets up domestic targets affecting GHG emissions and related energy structures. Lower envisioned economic growth than in recent years—the "new normal"—will suppress the growth of demand for energy and related emissions, as will a promoted shift toward services and higher value-added production.

The 13th FYP lists "a better-quality, more efficient, upgraded economy" as the second among the five major national targets. It aims at GDP growth of 6.5-7.0% annually in 2016-2020. At the same time, the plan caps primary energy consumption at 5 billion metric tons of coal equivalent (compared with about 4.3 billion in 2015). The plan includes targets to:

- reduce CO_2 emissions per unit of GDP ("CO_2 intensity") by 40-45% by 2020 compared with 2005, cutting CO_2 intensity by18% (-3.9% annually) during 2016-2020;
- reduce energy consumption per unit of GDP by 15% (-3.4% annually) in 2016-2020; and
- increase the share of non-fossil fuels in the primary energy supply to 15% by 2020, compared with 12% in 2015.

The plan also proposes a ban on commercial logging in "natural forests." Overall, the 13th FYP would shift from boosting energy supply to achieving "the real low-carbon economy" by providing incentives aimed at enterprises, consumers, investors, and investments to promote technology advances. Identification of concrete measures are expected in a promised strategy to 2030 "for revolutionizing energy generation and consumption, push forward the transformation and development of the energy sector, and exercise control over both the total amount and

intensity of energy consumption." Enhancements of a "smart" electric grid allow greater utilization of existing renewable energy capacity and allow further development of distributed energy. Planned reforms would "apply an energy-saving low carbon approach to management of power distribution." At the same time, the plan announces an intention to "strictly control expansion of coal production capacity and of coal-fired power plants, ensure cleaner use of coal in non-industrial sectors, and substitute electricity for more polluting forms of energy, and promote renewable energy-generated electricity, and more quickly upgrade coal-fired electric capacity and fuel quality."

The 13th FYP states that new incentives would lift price controls in the power, petroleum, natural gas, and transportation sectors—including an expansion of "trial price reform" for electricity—and "policy for adjusting prices for electricity generated by environmentally friendly facilities." The 13th FYP also promises structural reforms for state-owned enterprises, reforms on taxes on resource-based products, and an environmental protection tax. Further plans include:

- increasing high-speed railways in service by 50%, to 30,000 kilometers, linking 80% of big cities;
- accelerating competitiveness of manufacturing "new energy" (i.e., electric) vehicles;
- promoting Green Cities as a component of continuing, massive urbanization; and
- increasing installed capacity of nuclear power to 58 million kilowatts and plants under construction to 30 million kilowatts by 2020 (http://english.gov.cn/news/video/2015/12/01/content_281475245821937.htm).

Measures would curtail the growth of coal use and force increases in coal use efficiency. The National Energy Administration aims to close more than 1,000 coal mines in 2016, having production capacity of 60 million metric tons, according to Reuters reports. Over two to three years, as many as 6 million jobs could be affected in the coal industry and energy-intensive sectors that currently have excess capacity (e.g., steel). The 13th FYP promises "rewards and subsidies" as part of "proper arrangements" to address displaced workers to ensure that they are "resettled and provided with employment." Reuters reported that China's leadership intends to spend 150 billion renminbi ($23 billion) for worker resettlement (http://www.reuters.com/article/us-china-economy-layoffs-exclusive-idUSKCN0W33DS).

The government announced plans to reduce subsidies for "green" vehicles so that companies do not become dependent on them to be competitive in the marketplace. Current subsidies would be cut by 20% before 2019 and 40% in 2019-2020 and eliminated after 2021. China is now the largest market for electric vehicles, with the United States as the second largest.

According to a central government website (http://english.gov.cn/news/top_news/2016/03/07/content_281475302915204.htm), Xu Shaoshi, minister of the National Development and Reform Commission, said the plan includes "guiding targets" and "binding targets." Binding targets include tasks assigned to various administrations overseeing government-run industries and to regional governments. The major environmental targets within the plan, such as energy intensity of GDP and CO_2 intensity, will be binding for all industry administrations and local governments.

Concerns About Data and Compliance

Questions remain about how China may achieve its targets, the quality of China's data, and its enforcement of targets and standards. In February 2016, China's chief climate change negotiator acknowledged flaws in the nation's GHG emissions statistics as well as the official intention to correct them: "It is a question of ability.... At every level of statistics there are exaggerations added to the data. Everyone knows that, and everyone is anxious [to fix it]. We have set up a system to calculate and monitor energy saving and emission reduction, and are gradually improving it" (http://en.ccchina.gov.cn/Detail.aspx?newsId=59081&TId=96%22%20title=%22China%27s%20climate%20envoy%20bullish%20on%20hitting%20reduction%20goal%20for%202020). Even so, China's pledges and 13th FYP have not been supported, yet, by official quantitative projections of how policies would achieve the targets.

In recent years, the Chinese government has strengthened policies to enforce its environmental laws and set rules with harsher penalties for violations. For example, reforms included incorporation of environmental targets in promotion standards for government officials. Many observers follow how well the new rules will be implemented by local authorities and whether penalties will be upheld by China's courts.

Preparing for a National Carbon Cap-and-Trade Program

The 13th FYP mandates that China will need to improve the institutional infrastructure necessary to make effective its announced national CO_2 emissions cap-and-trading system in 2017. The system will need a trustworthy national registry to track emissions and emission reductions and a firm legal underpinning to reduce risks to market participants regarding rules, rights, and reliability. Clarity on allocation of permits and effective monitoring and compliance assurance structures would also need to be in place.

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IF10379

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