China has been the world’s largest greenhouse gas emitter since 2006. Under the 2009 Copenhagen Accord, China pledged to reduce its emissions intensity by 40-45 percent from 2005 levels by 2020. In a joint announcement with the United States in Beijing in November 2014, China announced two new goals: peaking greenhouse gas emissions by around 2030, and increasing non-fossil sources to 20 percent of total energy by 2030. China later included these two goals in its intended nationally determined contribution (INDC) to the new international climate agreement to be concluded in Paris in December 2015, along with a goal of reducing carbon intensity 60-65 percent below 2005 levels by 2030.

GUIDING POLICY FRAMEWORK

China’s twelfth five-year plan (FYP), covering 2011-15, spelled out a number of reforms to domestic energy and climate policies. The headline targets were to reduce energy intensity by an additional 16 percent, and carbon intensity by 17 percent, by 2015. It has been widely reported that China is currently on track to meet these 2015 targets. The thirteenth FYP is expected to be announced in early 2016.

CAP-AND-TRADE PROGRAMS

In October 2011, China announced its intention to establish seven pilot carbon trading systems in five municipalities and two provinces across the country. On June 19, 2014, the seventh of these pilots was launched in the city of Chongqing. The pilots cover between 35 to 60 percent of emissions within their respective jurisdictions. Each operates under its own rules tailored to regional or local circumstances.

The sub-national pilots reflect China’s growing interest in the use of market-based instruments – and emissions trading in particular – to reduce greenhouse gas emissions. The experience gained through these pilot programs is developing familiarity with emissions trading among companies and regulators in large portions of China, and will inform the design of any future national carbon market.

RENEWABLE ENERGY

The twelfth FYP set a target of increasing non-fossil energy to 11.4 percent of total energy use by 2015. Hydroelectric power is the main non-fossil energy source in China, generating 14.7 percent of electricity in 2011. Indeed, China is the largest hydroelectric producer in the world. The government wishes to increase installed hydroelectric capacity from 230 GW in 2011, to 330 GW in 2017. Solar and wind energy deployment has increased at rapid pace – for instance, China installed 12.9 GW of solar photovoltaic (PV) in 2013 to reach a total capacity to 20 GW. The Chinese government announced targets to increase solar and wind capacity to 70 and 150 GW, respectively, by 2017.

COAL

After many years of rapid increases, the government is now taking steps to reduce China’s coal consumption. In 2013, 67.5 percent of energy consumption was from coal. In
September that year, following rising concerns about air pollution, the government issued the Air Pollution Prevention and Control Action plan with the headline target of reducing coal consumption to 65 percent of total primary energy by 2017. Bans on new coal power plants are now in place in three industrial regions: Beijing-Tianjin-Hebei, Yangtze River Delta and the Pearl River Delta.3

More recently, the Ministry of Industry and Information Technology announced plans to reduce coal consumption by 80 million tons by 2017, and 160 million tons by 2020—China’s total coal consumption in 2014 was approximately 2.8 billion tons.4 Furthermore, the State Council has announced plans to cap national coal consumption at 4.2 billion tons from 2020 onwards.5

NUCLEAR

Nuclear power will play an increasing role in China’s energy mix in coming years. Capacity will increase from 14 GW in 2013 to 48 GW by 2017. In total, there are 26 reactors currently in operation, and 28 under construction.6 The government has set a target of 58 GW of nuclear capacity by 2020.

ENERGY EFFICIENCY

Improving energy efficiency is critical to achieving China’s carbon intensity targets. In 2008, China passed the Energy Conservation Law to boost energy efficiency throughout the Chinese economy. In 2010, the NDRC implemented demand-side management regulations that require utilities to achieve electricity savings of 0.3 percent per year, and reduce peak demand by the same percentage.7 China also has sector-specific energy efficiency standards—for instance, new commercial buildings must comply with building codes on energy use.8 There are also energy efficiency standards for household appliances that become more stringent over time.9

TRANSPORTATION

In 2012 the China State Council approved a development plan for energy saving from the automobile industry up to 2020. The objective is to speed the development and roll out of more fuel-efficient cars and new energy sources. For manufacturers, China set target fuel economy standards for new cars of 5L/100km, approximately 47 miles per gallon (mpg), by 2020. Consumers were offered a reduction in the vehicle tax paid on energy saving vehicles by half, and eliminating vehicle tax altogether on electric cars.12
ENDNOTES

2 BP Statistical Review of World Energy 2014
4 Reuters, “China to cut coal consumption to reduce pollution: Ministry” March 6, 2015. Available at: http://www.reuters.com/article/2015/03/06/us-china-coal-cut-idUSKBN0M20V820150306
9 IEA Policies and Measures. April 2015. Available at: http://www.iea.org/policiesandmeasures/energyefficiency/?country=China
12 IEA Policies and Measures. April 2015. Available at: http://www.iea.org/policiesandmeasures/energyefficiency/?country=China