

Comment: Yang Hongwei

China makes headway on carbon target

The State Council executive meeting decided last year that by 2020 China will work to reduce carbon dioxide emissions per unit of GDP by 40-45 percent from the 2005 level. But to achieve what it calls a carbon intensity decline target, it must overcome major challenges in two specific areas.

First, let me say that this target will be reflected in the 12th Five-Year Plan (2011-2015) and subsequent national plans for social economic development. This indicates China's resolution and actions to address climate change.

But economic growth, energy consumption and carbon dioxide emissions determine the intensity of energy consumption and carbon dioxide emissions per GDP. These key factors are further determined by the nation's stages of economic development and resource endowment.

China is a developing country and with a population of 1.3 billion, China's per capita GDP is just over \$3,000. By United Nations' standards, 150 million Chinese live below the poverty line.

Economic development and improving people's livelihoods are top priorities for many developing countries, including China. China is currently in a crucial period of building *xiaokang* (well-off) society, an important stage during industrialization and urbanization.

China now shoulders the burden of a developing economy while improving people's livelihoods.

China will not follow the same path as industrialized countries who did not control emissions. It has taken active measures to control greenhouse gas emissions.

With economic development and an improvement in people's living standards, there will be a reasonable growth in China's greenhouse gas emissions. This makes the nation's efforts to control greenhouse gas emissions a challenge.

With intense international competition, exporting "Made in China" products means large offshore emissions. Exports account for about a quarter of total carbon dioxide



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emissions in China.

Meanwhile, China's urbanization level is only 45 percent. It will take 30 years to reach 75 percent given the growth rate of 1 percent per year.

Even more daunting for China is that from now to 2040, there will be an increase of 450 million Chinese into urban populations, which is equivalent to 1.5 times the population in the United States.

Rapid urbanization creates rising demands for construction of urban infrastructure and housing, employment, consumption and energy. Emissions will increase as people's consumption increases.

A system for China's industrialization needs to be established to maintain its economic growth, urbanization and domestic demand. Given the 100 square meters of buildings per capita - which covers residential houses and hospitals, schools and other public facilities - even if the buildings' lifespans reach 100 years, it implies that 1.4 billion sq m of new buildings will be needed every year.

Maintaining and retrofitting infrastructure and improving people's living standards add additional pressure to control greenhouse gas emissions in the future.

Along with economic and social growth and the improvement of people's liv-

ing standards, China must also shift from industrialization to modernization.

To achieve its carbon intensity decline target, the total non-fossil energy consumption would still reach 675 million tons of coal equivalent in 2020, with an increase of more than 500 million tons of coal equivalent compared to 2005.

By 2020, energy consumption per unit of GDP needs a further decline of about 30 percent based on the reduction of 20 percent reduction in the 11th Five-Year-Plan (2006-2010).

This will require China to better develop and utilize renewable energy and nuclear power and other non-fossil energies, and initiate policies and measures to improve energy efficiency.

During the 11th Five-Year Plan, in order to realize the 20 percent energy intensity decline target, China has eliminated plenty of faulty production capacities and shut down many small thermal power stations, iron and steel plants as well as cement plants.

At the same time, employment, social justice and poverty alleviation and other factors will increase social pressure on energy conservation and emissions reduction. According to statistics, during the first four years of the 11th Five-Year Plan, the shutting

down of 70 gigawatts of small scale thermal power capacity affected the employment of about 400,000 people. The government and workers at all levels bore the direct social costs of it.

During the transformation of China's economy and society, the economic and social costs for energy conservation and emissions reduction will create a challenge.

Despite the enormous challenges, China has chosen the sustainable development path, and is adopting positive and strong measures to control greenhouse gas emissions.

The level of efforts in China is much higher than many developed countries. For example, from 2006 to the middle of 2009, China eliminated more than 54 gW of small scale units with capacity of less than 100 mW, about 70 percent of the total installed capacity of the United Kingdom.

During the 11th Five-Year Plan, China's additional investments in achieving the 20 percent target in energy intensity has already exceeded a trillion yuan, and a further additional investment of 3.4 trillion yuan is still needed to reach another 20 percent reduction.

According to HSBC, 34 percent of China's total government investments for the international financial crisis

is investment in environment-related measures. China's rate ranked second in the world.

The carbon intensity of per unit of GDP in key developed countries fell only 26 percent during the 15 years from 1990 to 2005.

According to the current emissions reduction targets that developed countries have pledged, if only considering its energy-related carbon dioxide emissions, equivalent carbon dioxide intensity of per unit of GDP declined only by about 30-40 percent from 2005 to 2020. In the US, its carbon intensity declined by 32 percent.

The decline of the carbon dioxide intensity of per unit of GDP reflects an improvement in economic benefits created by unit of carbon dioxide emissions in the country. It also reflects the country's efforts to battle climate change within the framework of sustainable development.

The great effort made by China during the process of industrialization has exceeded efforts by many developed countries when they were in the same development stage. This shows that China is consciously aware, responsible and firm when it comes to climate change.

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