



China should aim for a total cap on emissions

A focus on carbon intensity alone will allow emissions to grow with the economy, argues Qiang Wang.

The big players in climate-change negotiations are starting to position themselves ahead of talks concerning a new global treaty in Paris next year.

Until now, the global deadlock on efforts to curb greenhouse-gas emissions has centred around the unwillingness of the United States to commit to a binding reduction target. This was shown most vividly by the nation's rejection of the 1997 Kyoto Protocol.

Many countries, China included, had little incentive to introduce policies to control carbon dioxide while the United States was not doing so. In June, the United States signalled a shift from that position when its Environmental Protection Agency (EPA) unveiled a new climate plan.

Using its authority under the Clean Air Act in lieu of congressional action, the EPA set a target to cut carbon pollution from power plants — the largest source of total US emissions — by 30% below 2005 levels by 2030.

Is the move a climate game changer? I believe that China will make some effort to react to the US plan. Exactly how is still unclear, but here is a suggestion: China, the world's biggest greenhouse-gas emitter, should upgrade its climate policy from reducing carbon intensity to setting a long-term cap on total emissions.

The difference is important. Carbon intensity is measured relative to gross domestic product, so while the economy is growing, so too can pollution. An absolute cap attempts to break that link: economic growth must not drive up carbon emissions.

In June, China's long-standing chief climate negotiator, Xie Zhenhua, gave the strongest signal yet that the country was considering such a switch. He told reporters at a meeting in Berlin that China was approaching a "peaking year" for its carbon emissions in the build-up to the Paris talks.

To agree on an emissions cap, China must be convinced that the link between economic growth and emissions can be broken. Here, there is another strong positive message from the United States. Nine states in the northeast of the country have started a cap-and-trade programme known as the Regional Greenhouse Gas Initiative, in which the government places a ceiling on carbon emissions and allows companies to buy and sell permits for those emissions. Since 2009, the states involved in the programme have cut their emissions by 18% on average, while their economies have grown by 9.2%. By comparison, emissions in the other 41 states fell by 4%, and their economies grew by 8.8%. Thus, the real challenge is not to set a cap for emissions, but to develop policies that make economic growth compatible with carbon reduction.

If China does not set a carbon cap, then it

could find it harder to continue to cut carbon intensity. With domestic coal demand in the United States expected to fall by 30% owing to the EPA rule, US coal firms — sitting on the largest recoverable reserves in the world — are pushing to increase exports to Asia, especially to China. Three new coal-export ports are being proposed for the Pacific coast, and are projected to ship up to 100 million tonnes of coal per year. The huge added supply to Asia will lead to cheaper coal and increased consumption. The European Union (EU) is a good example. Coal consumption has risen in the EU in recent years, and use of comparatively clean gas has fallen. This is partly because US coal exports to the EU sharply increased from 14 million tonnes in 2003 to 47 million tonnes in 2013.

It is unrealistic for China to switch immediately from cutting carbon intensity to a cap on emissions. A more rational and practical strategy is to make the transition in two steps.

First, China needs to obtain better data. Researchers must work out when Chinese emissions are likely to peak, assuming that the economy continues to grow as expected. This will provide a reliable baseline for any reduction target. It will require international scientific cooperation, because modelling for China must be informed by research results about the trajectory of emissions patterns in the EU, United States and other developed regions.

The peaking year is a complex issue and Chinese scientists and scholars differ greatly in their opinions of it. But the widely accepted view is that China's carbon output under the business-as-usual scenario will peak sometime after 2030.

Second, China needs to prioritize the use of 'bridging' fuel. It is no coincidence that the nine US states participating in the regional scheme have more nuclear energy and shale gas in their portfolios than most.

In 2011, nuclear energy accounted for less than 2% of China's electricity, but 12% of electricity globally and 21% in member countries of the Organisation for Economic Co-operation and Development. China's technically recoverable shale-gas resources are 31.6 trillion cubic metres, nearly double the United States' 18.8 trillion cubic metres. I advocate nuclear energy and shale gas as bridging fuels to a carbon-free future, if China can handle the safety and environmental concerns.

An absolute cap on China's emissions is in sight. But it will take political courage and practical changes to make it a reality. ■

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CHINA MUST BE CONVINCED THAT THE LINK BETWEEN ECONOMIC GROWTH AND EMISSIONS CAN BE BROKEN.

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