
China: Climate Change Superpower and the Clean Technology Revolution

Margret J. Kim and Robert E. Jones

Move over America. China has sprinted to the front of the pack in carbon dioxide (CO₂) emissions. Lost in the euphoria of skyrocketing stock markets and the debate over trade imbalances, poisoned pets, and toxic toothpaste and toys was the announcement that China now has the dubious distinction of being the largest producer of CO₂ in the world. Following closely on the heels of the International Energy Agency's prediction that China was expected to overtake the United States as early as the end of 2007, the Netherlands Environmental Assessment Agency announced that this milestone had already been reached. According to the Dutch report, "[t]he surging power demand from China's rapidly expanding economy caused CO₂ emissions to rise by 9% in 2006 . . . that increase, coupled with a slight United States decline, meant that China's emissions for the year surpassed those of the US by 8%." Press Release, Chinese CO₂ Emissions in Perspective, (June 22, 2007), www.mnp.nl/en/service/pressreleases/2007/20070622ChineseCO2emissionsinperspective.html. Despite a knee-jerk response by a high-ranking Chinese official disagreeing with the report and criticizing its measurement criteria, an official at China's Energy Research Institute remarked in a less bellicose fashion that Chinese researchers would study the report but that their estimates indicated that China would in any event surpass the United States by the end of 2007.

This revelation puts China front and center in the climate change debate. The sleeping giant has truly emerged from its century-long slumber to become not only the workshop of the world but the climate change superpower. The speed with which China has overtaken the United States is particularly worrisome. In 2005, China's CO₂ emissions were 2 percent lower than those of the United States; in 2006, they were about 8 percent higher at 6.2 billion tons compared with U.S. emissions of 5.8 billion tons. In fact, recent research from University of California Berkeley indicates that the Kyoto Protocol underestimated the magnitude of the projected increase of CO₂ emissions in China, and with her plan to quadruple gross domestic product (GDP) by 2020, greenhouse gas (GHG) emissions will skyrocket—possibly double—thus

Ms. Kim serves as China Program Director and Special Adviser on Energy, Environment & Climate Change to CARB and CalEPA in Beijing and may be reached at mkim@arb.ca.gov. Mr. Jones is president of EcoLinx Foundation, a California nonprofit assisting in China's transition to a more sustainable energy and environmental future, and may be reached at Robert@ecolinx.org.

negating any attempt at reduction by the rest of the globe.

The Energy Information Agency predicts that China will experience the largest growth in CO₂ emissions between now and the year 2030. While current emissions per capita are only about one-fifth of U.S. per capita emissions, China's economy continues its meteoric rise with an 11.9 percent GDP growth in the second quarter and a recent overtaking of Germany as the third-largest economy. The rise is fuelled largely by inexpensive, dirty coal-fired power with installation at the rate of two large 500 megawatt (MW) coal-fired units per week. As the world's largest producer and user of coal, China continues to depend on CO₂-heavy coal for nearly 70 percent of her primary energy consumption, and this will not change anytime soon. In addition, with the exponential growth in car ownership in China expected to reach 140 million by 2020 and the importance of the automobile industry as an engine of economic growth, vehicle carbon emissions are also expected to surge.

With the fast-approaching expiry of the Kyoto Protocol in 2012 and the absence of any successor framework, there is a new urgency to mount global efforts to combat climate change. Indeed, how China handles this new responsibility will have far-reaching repercussions for the world, especially in light of the Bush administration's official stance that it will not sign onto any emission reduction pact unless China follows suit with her own caps.

It's Not Fuzzy Science

Just four years ago, nobody talked about *quan qiu bian nuan* (climate change) and certainly not about the effects of climate change in China. The subject of climate change at that time involved no more than a handful of officials trying to determine how Clean Development Mechanism (CDM) investment could serve as a means to gaining much-needed technology. All that has changed. Climate change stories appear almost daily in the English language *China Daily News*. The 400-page *First National Climate Change Assessment*, drafted over a four-year period by scientists and officials from dozens of Chinese ministries and agencies, clearly shows consensus among a broad range of officials that global warming poses a clear and present danger to China's development. For example, rising sea levels threaten low-lying megacities such as Shanghai, the jewel in China's financial crown.

With extreme weather and other classic global warming manifestations occurring across the country, China sees climate

