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OTHER VOICES**China Is Key to Global Climate Solution**

By THOMAS P. LYON

China, cut the carbon.

WITH PRESIDENT BARACK OBAMA AND THE LEADERS of the new Congress on record supporting climate legislation, the U.S. should begin a public debate about what policy to pursue.

The political favorite is a "cap-and-trade" system, under which total emissions of greenhouse gases are limited by law and emitters allowed to trade emissions permits. In one version supported by the administration, emitters would acquire the permits in a government-run auction; in another, the government hands them out for free, as has been done in the European Union's Emission Trading System. In both versions, the permits can be traded at market prices after the initial allocation. Such a system, which helped reduce acid rain, uses free-market mechanisms to reduce emissions efficiently.

Putting a domestic price on carbon is badly needed. But focusing only on domestic carbon policy misses three critical points.

First, the U.S. bears responsibility for the largest amount of man-made greenhouse gases warming our planet today.

Second, more than the U.S. or any other country, China will determine the world's climate future.

Third, China is unlikely to forego the use of coal, its main indigenous energy resource and primary producer of carbon emissions.

These three points suggest that the most important way to curb global warming may be to capture the greenhouse gases from coal-fired power plants, wherever they may be, and store them in a fashion that keeps them out of the atmosphere. That process is known as "carbon capture and sequestration." It is absolutely critical for the U.S. to work with China to deploy carbon-capture and sequestration technology. Failing that, U.S. climate policy will be at best a limited success.

Carbon dioxide remains in the atmosphere for more than a century. The warming we experience today was created by the cumulative emissions over the past 100 years. From 1950 through 2005, the world's top greenhouse-gas emitters (in carbon-dioxide equivalent) were: the U.S. at 186.1 billion tons, European Union countries at 127.8 billion tons, Russia at 68.4, China at 57.6, and Japan at 31.2. As the richest nation in the world and the globe's

innovation leader, we should take the point position to solve the climate problem, creating new green industries and jobs in the process.



Dan Picasso

China continues to build one or two coal plants ever week. It probably already has passed the U.S. as the globe's No. 1 greenhouse-gas emitter.

But those emission rankings are changing. It is widely estimated that in 2006 China surpassed the U.S. as the No. 1 emitter of greenhouse gases, with current amounts already 14% greater than those of the U.S.

We should anticipate a world in which China continues to build one or two new coal plants every week. The U.S. Energy Information Administration projects that by 2030, China will be spewing out 11.2 billion tons of greenhouse gases; the U.S., 7.95 billion tons.

U.S. policy ends at its borders. Climate change doesn't. If China continues to rely on coal-fired electricity, even the best U.S. policy falls woefully short.

WORLDWIDE CARBON CAPTURE and sequestration will be essential. There are several ways of doing this, the best known of which is to inject carbon dioxide deep underground into depleted oil and gas wells or saline aquifers. Oil companies already do so, to extract more oil from existing reservoirs.

An alternative is "mineralization," by which finely ground minerals are heated and combined with carbon dioxide and water to produce calcium carbonate, a harmless compound that is the primary component of limestone. Either system would be difficult and expensive to implement, and their ultimate effectiveness remains uncertain, so extensive research and development is needed.

In addition to developing new technologies for carbon capture and sequestration, the U.S. must be prepared to transfer the technologies to the developing world, including China.

Prior to the recent elections, we were moving in the wrong direction. The Department of Energy decided in January 2008 to pull out of the so-called FutureGen project, an important federal research program on carbon capture and sequestration. A number of electric-utility efforts to develop "capture-ready" coal-fired power plants also were abandoned recently. The only one that continues is Duke Power's integrated gasification and combined-cycle plant in Indiana.

The Obama Administration is changing course. It proposes to build five commercial-scale coal plants using carbon capture and sequestration. This is an important step, and it is also important that the government make the resulting intellectual property publicly available to all, regardless of nationality.

Unfortunately, the well-known disregard of China for intellectual-property rights makes cooperative technology development difficult. What if the world's most populous nation expropriates the technology and uses it to compete with U.S. companies?

American companies may be willing to invest in research, development and demonstration of new technology with the understanding that they are doing a global public good, but only if they understand in advance what the U.S. is doing and why it is so important.

The U.S. should forge ahead with climate-friendly domestic policies. If we can't make carbon capture and sequestration work here, we have no hope of mitigating China's coal-fired emissions and no chance of forestalling most of the global warming that will be due to human activity.

The U.S. and China must collaborate to reduce emissions. This will require substantial government involvement and partnerships with the private sector. If we shoulder our moral responsibilities to lead in this way, we stand a chance of averting the approaching climate crisis.

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