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2. CHINA: Clean technology may trump tough emissions controls, joint U.S.-China study says *(08/17/2009)*

Annie Jia, E&E reporter

Focusing on the deployment of clean technology could be a more realistic approach to cutting greenhouse gas emissions than setting emissions targets for China and other developing countries, researchers at the **Center for Clean Air Policy (CCAP)** say in a new report.

The researchers said that hard emissions caps, or even caps on emissions per unit of gross domestic product, are difficult to actualize in developing countries because often, data simply do not exist or are not good enough.

"To be able to say we're going to improve our emissions intensity by 5 percent, that's a nice concept," said **Dan Klein, one of four authors of the report**. "But to be able to actually do that means ... you have the ability to measure industrywide what you're doing now and what you're doing after."

Heavy industries, some of which date from the 1950s, are responsible for much of China's greenhouse gas emissions.

The technology-based approach would, for example, set targets for how much of a given sector -- such as the cement industry -- would be using pre-selected technologies that are considered relatively energy-efficient. "It's not such a difficult thing to count the number of plants that have a certain technology," Klein said.

Klein compared it to an individual aiming to reduce her household's emissions. Setting a goal of cutting emissions by 10 percent would require measuring what emissions come from where. "On the other hand, if they said, if you put on these compact fluorescent bulbs, you can estimate that each will save a certain amount of CO2 or a certain number of kilowatt-hours."

Klein said that his team decided to write a report on the concept after recognizing that it was a more practical way to do things, though they had not been looking at it originally in their research on sector-based approaches to cutting emissions.

For the report, which focused on a few energy-intensive industries in China -- namely cement, and iron and steel -- the team from **CCAP, a private, Washington-based research group**, collaborated with researchers at Tsinghua University in Beijing. It is China's equivalent of the Massachusetts Institute of Technology.

Klein said their thinking became more practical-minded during their research, as they realized there was this major barrier against obtaining data.

"Our work has increasingly led us to look at a certain amount of flexibility in our thinking, to say, 'What could work here, given the data, given the industry, given the laws and regulations in place?' -- and that led us to this particular paper," Klein said.

Sizing up the cement industry

In the world of international negotiations, such a technology-based approach would also be easier to swallow for developing countries, said **Haibing Ma, policy associate at CCAP and another co-author of the report**.

"This kind of approach will have more buying power," Ma said. "They've shown a greater level of interest in this type of approach" than in energy-intensity or hard emissions cap approaches.

The Tshinghua University collaborators on this report are researchers who commonly advise the Chinese government on its energy and climate policy, Klein added, and the report was written with the intention of informing Chinese policymakers.

China would find such an approach more acceptable in part because its national planning already does it. Industrial development policies every few years set goals for technology adoption, Klein said.

A climate policy would, for example, raise the market penetration goal for an efficient cement plant from 70 percent to 80 or 90 percent.

For an industry-heavy country where technology is highly variable, this could have large effects, he said.

"China produces approximately half the cement in the entire world. It is huge," Klein said. "A lot of their plants are the most modern, state-of-the-art plants available, and they have some of the oldest, most high-emitting, inefficient plants, as well."

The report said that in the cement industry, the technology approach could cut carbon dioxide emissions by more than 200 million tons -- out of total cement industry emissions of 1 billion to 2 billion tons.

Ma also said that the approach would mesh better with how the Chinese think about energy -- focusing more on energy efficiency rather than on carbon dioxide emissions.

Not 'theoretically optimal' but 'reasonably practical'

This approach is not the first that focuses on technology rather than on emissions, however.

The Clean Development Mechanism under the Kyoto Protocol allows countries to gain emissions credits for individual clean-energy projects that are built.

But a major problem of the CDM is that there are large administrative costs, because every project must be assessed individually, said Annie Petsonk, international counsel at the environmental advocacy group Environmental Defense Fund.

Furthermore, she said, because emissions allowances are awarded, global emissions are not actually cut.

Petsonk said that because the goal ultimately is to cap emissions, a hard cap is the most efficient way to do so.

"If industrialized countries have caps on emissions and developing countries do not, that means that developing countries' emissions are increasing as business as usual," she said.

Klein said that the approach would involve less overhead than the CDM, because it looks at technology in a whole sector, not individual projects. It was unclear whether the approach proposed by the **CCAP** would involve allowances for technology increases.

So far, the idea is still new, he said. Previous papers only discussed a concept. The **CCAP** study is the first "proof of concept" study to look at the feasibility of the approach.

"I would describe this as an approach that could work," he said. "It's not theoretically optimal, but it is reasonably practical."