TRANSPARENCY IN ENVIRONMENTAL PROTECTION AND CLIMATE CHANGE IN CHINA

ROUNDTABLE

BEFORE THE

CONGRESSIONAL-EXECUTIVE COMMISSION ON CHINA

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PREPARED STATEMENTS

TRANSPARENCY IN ENVIRONMENTAL PROTECTION AND CLIMATE CHANGE IN CHINA

THURSDAY, APRIL 1, 2010

CONGRESSIONAL-EXECUTIVE
COMMISSION ON CHINA,
Washington, DC.

The roundtable was convened, pursuant to notice, at 2:04 p.m., in room 628, Dirksen Senate Office Building, Charlotte Oldham-Moore, Staff Director, presiding.

Also present: Anna Brettell, Senior Advisor, Congressional-Executive Commission on China.

OPENING STATEMENT OF CHARLOTTE OLDHAM-MOORE, STAFF DIRECTOR, CONGRESSIONAL-EXECUTIVE COMMISSION ON CHINA

Ms. OLDHAM-MOORE. Welcome. I'm so pleased to see the substantial crowd we have today.

Welcome to the Congressional-Executive Commission on China's [CECC] panel on "Transparency in Environmental Protection and Climate Change."

For those of you who have not been to our Web site, I encourage you to visit it at *www.cecc.gov*. The Commission posts daily analysis, and one can sign up to the Commission's subscription list. The Commission releases a monthly brief on rule of law and human rights developments in China and conducts hearings and roundtables. The Commission also issues an annual report on rule of law and human rights development in China, which is released in October. So, please do visit our Web site.

The CECC, today, has convened a panel of experts who will discuss government transparency in the areas of environmental protection and climate change in China. China has stated commitments to improve access to environmental and climate change data. These commitments include China's passage of the Open Government Information regulations in 2008, its revision of the People's Republic of China's statistics law in 2009, and its acceptance of the Copenhagen Accord in December 2009.

The question before us is whether there are mechanisms in place that encourage transparency so that one can determine whether China is indeed meeting its stated commitments. Chinese leaders have, since the 1990s, gradually increased the public availability of a wide array of data in the environmental protection sector.

Access to environmental data is a cornerstone of public participation and for ensuring enforcement of environmental laws. Public participation and demands for a cleaner environment are impor-

tant because they are typically necessary for any country to achieve environmental protection goals.

China's environmental groups—some closer to the government than others—have increased in numbers since the late 1990s and have become more effective advocates and more active in using the law to obtain environmental information, and they do this with an eye toward improving enforcement of environmental laws and promoting more progressive policies.

As citizens and environmental groups increase their monitoring activities, access to information becomes increasingly important. Questions remain, however, regarding the information available to these groups and to ordinary citizens in China, especially at the local levels.

In relation to climate change, China, among other promises, has pledged to endeavor to "lower its carbon dioxide emissions per unit of GDP [gross domestic product] by 40–45 percent by 2020, compared to its 2005 levels."

This pledge to cut China's carbon intensity is closely related to its previous commitments to decrease its energy intensity, and that's the amount of China's energy consumed per unit of GDP. In China, energy accounts for 85 percent of China's carbon emissions, so discussions about transparency in measuring and reporting China's carbon emissions is largely, although not solely, a discussion about transparency and energy data.

Since concerns about the reliability of China's energy data surfaced in the late 1990s and again in the early 2000s, China has tried to improve its systems for energy and climate data measurement, collection, and reporting. China also has agreed to participate in several cooperative programs to establish principles for improving data transparency and for developing a system to measure and report on all of its greenhouse gas emissions to the international community.

We are very fortunate to have a distinguished group of panelists who will discuss transparency in the environmental protection and climate change sectors from different perspectives. Barbara Finamore will open with a general overview of access to environmental information in China and China's environmental Open Government Information efforts, and discuss the relevance to implementation of China's climate and other environmental targets.

David Gordon will discuss the role of environmental groups in monitoring China's environmental performance and actions to address climate change.

Debbie Seligsohn will briefly introduce China's systems for measuring, monitoring, and reporting energy and climate data. She will then discuss the implementation of these systems, highlighting remaining gaps and foci of capacity-building efforts.

And Michael Wara, who has traveled from the west coast to the best coast, will discuss transparency issues in relation to energy projects in China that generate carbon credits for foreign investors. He will also discuss China's implementation of international Clean Development Mechanism [CDM] guidelines.

We are grateful that all of you have been able to join us today.

I want to briefly introduce Dr. Anna Brettell. She is our senior advisor on these matters, and will introduce the panelists with more detail.

Thank you.

STATEMENT OF ANNA BRETTELL, SENIOR ADVISOR, CONGRESSIONAL-EXECUTIVE COMMISSION ON CHINA

Ms. BRETTELL. Great. I'd like to start with Barbara Finamore. She's the Founder and Director of the China Program at the Natural Resources Defense Council [NRDC]. She leads NRDC's 25-member staff in Beijing, who work on a number of projects that focus on climate change, energy efficiency, green buildings, advanced energy technologies, open information, environmental law, public participation, environmental health, and responsible sourcing.

She has held several positions in the U.S. Government, and also the United Nations' Environment Program. She has been the president and chair of PACE [Professional Association for China's Environment], and is the co-founder and president of China-U.S. Energy Efficiency Alliance, which is a nonprofit organization that works on public-private partnership projects in China to reduce its greenhouse gas emissions. Ms. Finamore has had over 20 years experience working on China's environmental issues.

David Gordon serves as the executive director of Pacific Environment, an NGO that's based in California. They work with grassroots organizations in China, Russia, Alaska, and California. They help communities have a larger voice in environmental decision-making.

Mr. Gordon has helped Pacific Environment partner with Chinese groups since the mid-1990s. They have especially supported groups across China—all across China—to address issues of water pollution, environmental health, and marine conservation.

Deborah Seligsohn is the senior advisor to the World Resources Institute's [WRI] China Climate and Energy Program, as well as the advisor to WRI's Climate and Energy Network, chinafaq.org. Her focus is on deepening research collaboration and the development of policy tools to address climate change issues. She has also had experience in the U.S. State Department, working in several countries including India, Nepal, and New Zealand. Her most recent position was as the Environment, Science Technology, and Health Counselor on Beijing.

Michael Wara, or I should say Dr. Wara, is an Assistant Professor at Stanford University Law School, where he teaches environmental law and policy, and also international environmental law and property. His research focuses on the emerging global market for greenhouse gases in the post-Kyoto regime for reducing their emissions.

His research includes a focus on the carbon credit market in a number of countries, including China. He has testified before a couple of House committees in the past about carbon offsets.

So, I look forward to listening to everyone's testimony. So, Barbara?

STATEMENT OF BARBARA FINAMORE, FOUNDER AND DIRECTOR, CHINA PROGRAM, NATURAL RESOURCES DEFENSE COUNCIL

Ms. FINAMORE. Thank you very much, Charlotte, and thank you, Anna. It's my pleasure and honor to be here with all of you today. I'm delighted to see so many of you in the room to discuss these very important issues, because my 20 years of experience in China and 10 years before that in the United States have convinced me of the fundamental importance of public access to information on energy and environment as a key method for improving environmental performance, whether it be conventional pollutants, energy intensity, or climate change reduction.

Like many other countries—like the United States in fact, when I started doing environmental law in the United States—China has begun to realize, in an ever-increasing manner, that open access to environmental information is a way to bring in a variety of stakeholders to help with the process of improving enforcement of its environmental laws and policies. Also, it's a way to relieve the pressure on the already extended Ministry of Environmental Protection [MEP] and local environmental protection bureaus, and in fact to improve the quality of the information that is available.

Of course, as you heard from Charlotte, the really key development was in May 2008, when the State Council passed its first equivalent freedom of information act, its Open Government Information regulations.

Now, this came after about a decade of experimentation, with everything from the Green Watch program, which I was able to be involved in through PACE that had a color-coded method for rating factories' environmental performance, to provisions for allowing the public to comment on environmental impact assets and appear at hearings on certain environmental impact projects.

But this Open Government Information Regulation was really sweeping, applying to every government agency. Every government agency was, in turn, supposed to develop its own implementing regulations. The Ministry of Environmental Protection was the first out of the box. They came out with their own implementing regulations almost immediately after the State Council issued theirs.

Only a few other government agencies in China have followed suit, so that's the first area I just wanted to mention. There is room for improvement here for many other agencies to follow the good example of the Ministry of Environmental Protection in developing their implementing regulations. That's what I'm going to focus on, just very briefly.

The Ministry of Environmental Protection regulations require government environmental agencies, from the central government down to the provincial and local levels, to proactively provide all sorts of environmental information to the public and to respond to requests for such information.

It ranges from everything from how many permits they've issued, how many environmental impact assessments they have issued, what the impacts are, environmental statistics, environmental quality information, what letters of complaint or requests for information they've received from the public, all the way to information such as a list of violator companies that are way above their emis-

sion standards, what lawsuits have been brought for administrative penalties, and what have the resolutions been.

There is a time limit on responding, but typically within 15 days. There are exceptions, just like in our Freedom of Information Act, for things like state secrets, privacy, and commercially sensitive information, and there is a provision for appeal. This all is quite progressive, I think, and for those who have been working in China a long time, quite a surprise that this was implemented on a national level.

I'm sure you are all aware that information is at a premium in China, to say the least, so this was a very important step forward. But of course, the key is always: how are these regulations being implemented, how are they being enforced, what kind of information is being revealed?

NRDC, very soon after the Ministry of Environmental Protection and the State Council issued their regulations and measures, began a project with the Institute for Public and Environmental Affairs, Ma Jun's organization, whom I'm sure many of you know, to really track the progress at the municipal level, and we'll continue to do so. What we found was, basically, low levels of compliance overall, but very bright spots in each of the eight key areas that we did measure.

In fact, we discovered some really amazing, creative, and innovative ways that certain cities were implementing certain parts of these regulations, from searchable databases where people could go online and pick a point source, a polluting factory, and target and track its emissions, to things like putting on the Web site hourly monitoring readings of pollution levels. Other cities were very good at responding to requests for information and others were very forthcoming to talk about all the lawsuits and administrative proceedings that were being brought. No one city did a very good job on everything.

But what we're trying to do is similar to something that NRDC has been doing for many years in the United States. We publish an annual report on the conditions of our nation's beaches, in terms of certain pollutants. The first year we did that report, it was very bad all across the board. But the name and shame value was invaluable, and right away cities took action, beach communities took action to improve their performance for the next year because they wanted the tourists to come back.

We're already seeing that happen in China. Cities are looking at the performance of other cities and saying, "I didn't realize we had to do that," or "I didn't realize we could do that," or "I'd better do that, and if I do it's going to be safe, I'm not going to get into some kind of political trouble." So we will continue to do this year after year, and we are already getting inquiries from cities about each other. We're bringing cities together to discuss China's own best practices, and hope to foster them.

But there are obstacles to greater compliance. They're very similar to what we see in many other instances on environmental energy regulations: lack of capacity on the part of local officials who don't understand what to do or how to do it; the vagueness in the regulations.

Still, I'm happy to say that the Supreme Judicial People's Court has issued a draft judicial interpretation to clarify how these regulations should be followed, what is the scope, and what is the scope of the exemptions. They even ask for public comment on their draft judicial interpretations, so we hope that will provide more clarity. Most important, how well are local officials going to be held accountable for their failings to comply with the regulations?

Just really briefly, I'd like to provide four suggestions for ways in which the United States can help to promote China's efforts toward greater transparency in this, and other, areas. One—and this is already going on but it can be continued and strengthened—exchanges on the issues relating to, how do you set up the rules of the system, how do you refine the laws and the rules for environmental information disclosure? The United States has much depth of experience in this area that it can, and is, and hopefully will continue to, share.

Number two, the United States and China, as I'm sure many of you know, are already involved in a very large number of international exchanges and partnerships on all kinds of environmental and energy issues. One thing we hope will happen going forward is an effort to build into these partnerships, these projects, and these collaborations, efforts to ensure or to improve the release of information that's generated through these projects to the public, and also to develop the capacity of the local officials to make that information available.

Third, given the interdependency of our two economies and the increasing demand for information on the part of U.S. consumers and businesses on the environmental impact of the goods that they purchase, we think there is tremendous opportunity here for collaboration on approaches to greening the supply chain of U.S. industries. This benefits the consumers, gives Chinese environmental authorities support of powerful business allies, and ultimately helps to bring about a cleaner environment.

Finally, as we begin to look at how China is going to meet its climate commitments, we think there is tremendous room here for technical, non-political exchange between the United States and China on approaches on how to improve the methodologies relating to greenhouse gas emissions monitoring and verification. This is already going on: there is a memorandum of understanding between the U.S. Environmental Protection Agency and China's equivalent, Ministry of Environmental Protection, which has been going on for years. But again, this is an area we think is very fruitful and we hope it will be continued and strengthened.

I'll stop there. I look forward to our discussion and your questions. Thank you very much.

[The prepared statement of Ms. Finamore appears in the appendix.]

Ms. OLDHAM-MOORE. Thank you, Barbara.

Please, David.

STATEMENT OF DAVID GORDON, EXECUTIVE DIRECTOR, PACIFIC ENVIRONMENT

Mr. GORDON. Thank you very much. Thank you for the opportunity to provide comments to you today, and to the Commission for organizing this wonderful discussion.

Pacific Environment has worked in China for over 15 years, assisting local environmental organizations to grow a mature environmental movement that is effective at working together with the Chinese Government to address the most pressing environmental issues affecting China's development path.

The majority of our work in China has focused on water pollution issues and strengthening local non-governmental organizations to effectively work with local government agencies to address these critical issues. The lessons we've learned through these efforts have relevance to questions of transparency and environmental protection and can also help us understand how to promote transparency in dealing with climate change issues in China.

One of China's most critical environmental problems, as probably most people in the room know, is water pollution. In 2005, Chinese governmental officials indicated that over 360 million rural Chinese lacked access to clean drinking water, and over 70 percent of lakes and rivers are polluted. Major pollution incidents happen on a near-daily basis.

Now, I do want to point out, this is not meant to single out China for these problems. These are similar problems that have been dealt with in other parts of the world, including here in the United States, and that will be one of the key points of my talk, is that, in fact, many of the challenges that are being faced in China around transparency and around environmental governance are the same challenges that we face here in the States, and that offers some opportunities for collaboration and learning from each other on these issues.

We believe that improvements on issues such as water pollution will only be successful and sustainable if local, regional, and national environmental groups are able to establish themselves as strong watchdogs of, and advocates to, the government and private business and partner with them to find solutions.

Working with many partner and environmental groups across China, we've reached out to local communities concerned about water pollution, helping them to conduct public relations campaigns, reach out to the media, reach out to the government to find ways to make a difference. What's important to note is that the Chinese Government has recognized the significant nature and the severe nature of these issues.

There's been a noticeable shift in behavior by the Chinese Government as it pertains to environmental issues, particularly water pollution, as they've acknowledged that the environmental crisis, particularly for water, is coming earlier than expected. In this regard, they have looked to non-governmental organizations [NGOs] at the local and regional levels to help them address some of these issues.

Barbara did a wonderful job talking about the open government regulations and the ways that environmental groups are starting to use this transparency in environmental information to understand how to gather information about water pollution issues, so I'll skip over part of my testimony, with one comment that again this is very similar to the experiences that we have gone through here in the United States with the development of the Freedom of Information Act.

In the United States, years of precedent-setting litigation was required to ensure quality implementation of the Freedom of Information Act, and while we hope that a similar process is not required in China, I think we need to recognize that it will take time to build strong and transparent environmental governance and that there are ways that we can work together to do that to help ensure public trust in government information.

I'd like to comment on one important model where the transparency of government information has been used to create some very real environmental improvements. In this model, the Institute of Public and Environmental Affairs [IPE] in China has made great progress using open government data to publicize pollution sources through a national water pollution map. IPE then works collaboratively with business, government, and local NGO representatives to encourage third-party audits of polluting factories that can make recommendations for pollution reduction.

This model demonstrates how Chinese civil society can use publicly available information produced by the government to achieve environmental progress. IPE has now expanded its model to tackle air pollution issues, with evident applications within a climate change context.

So one of the critical questions that we've been asking is: how can the lessons learned from civil society's efforts against water pollution in China also be applied to climate change issues? We believe that public transparency of environmental information is a critical underlying component to appropriate and effective measurement, reporting, and verification [MRV] of climate change mitigation efforts.

Just as in water pollution, the Chinese Government has made a number of significant and encouraging statements about reducing greenhouse gas emissions, and we've already heard about some of these. A critical part of working with China on climate change issues is empowering China's civil society and environmental organizations. With the right information and tools, communities throughout China can advocate for better energy choices. Civil society organizations can encourage provincial and industrial leaders to reduce greenhouse gas and other pollutant emissions.

In the United States, we have seen similar actions at the local and state levels that have been remarkably successful in developing greenhouse gas emissions reduction strategies. Indeed, the shift to local- and state-level strategies represented an enormous breakthrough in the United States from shifting awareness into action on climate change issues, and we've seen some of the most innovative efforts developed at the city and state levels. In China, provincial-level strategies also have the potential to build local action around as yet unimplemented central government policies.

During the Copenhagen negotiations in December, concerns were raised about China's willingness to accept MRV requirements suggested by developed countries, including the United States. These concerns, I think we have to recognize, came about as a result of a fundamental lack of trust in official government statistics and action in China. These concerns are real and we need to find ways to address those. But China also raised a number of valid concerns

in its own right about how international MRV requirements can become an intrusion on its own sovereign rights.

So I'd like to suggest that there could be other ways that we can approach the MRV efforts, and that is to strengthen multiple systems within China that will verify data and information, and especially strengthen local systems within China. If these are systems developed within China, then this avoids the very tricky problem of intruding on sovereign rights.

A critical component to a healthy MRV system anywhere in the world, including here in the United States, is a healthy and independent civil society sector. A healthy and independent civil society sector can help ensure that the government provides and acts upon accurate information, that the sector can help partner with all levels of government to find environmental solutions.

So in conclusion, I would just like to say that we've seen a significant amount of progress in the last five years on water pollution efforts within China. We've seen civil society organizations, at the Beijing level and at the provincial level, start to make real progress in working together with local government agencies to shut down the most egregious polluting factories and to improve quality and standards at other factories. Over the long run, we'll see that this creates a lot of very important public health benefits within China.

I think the question we can ask today is, how can we take these lessons of how civil society organizations have helped to engage productively within China to partner well with the government, and how can we apply these lessons to climate change issues? The conclusion I'd like to leave you with, is I think there is a very large area for collaboration in strengthening the civil society sector, which in turn will help build an international public trust of government information within China.

Thank you.

[The prepared statement of Mr. Gordon appears in the appendix.]

Ms. OLDHAM-MOORE. Thank you, David Gordon. We appreciate your remarks.

Deborah Seligsohn, please.

STATEMENT OF DEBORAH SELIGSOHN, SENIOR ADVISOR, CHINA CLIMATE AND ENERGY PROGRAM AND ADVISOR, CLIMATE CHANGE AND ENERGY NETWORK, WORLD RESOURCES INSTITUTE

Ms. SELIGSOHN. Thank you very much, Charlotte. I'm delighted to be here today to discuss China's efforts to measure, monitor, and report on energy and climate data.

Over the last three decades, I've actually lived in China for more than 16 years. I was first a Foreign Service Officer, and then I'm now the Senior Advisor to the World Resources Institute's China Climate and Energy Program.

Part of my work involves helping Chinese universities, companies, and government agencies develop better ways of collecting and analyzing energy and pollution statistics. I'd like to outline just four main points right now. All of these are covered in much more detail in my written testimony.

First, what the United States and other countries need to assess the success of the Copenhagen Accord is national-level information.

We have that from China. In fact, China's overall energy and environmental data are quite strong by developing country standards. Over the last decade, the aggregated national-level numbers have become increasingly dependable. There are a couple of reasons for this. One, is that China does a very good job in tracking big energy producers and users. It pays close attention to companies like Huaneng, which is the world's second largest power producer, and to the biggest coal, steel, and petroleum companies.

Another reason is the majority of China's energy is consumed in its developed eastern provinces. They import their energy either from other provinces or internationally. Anything that moves across a boundary in China is captured more effectively in the statistics. These provinces have the money and the manpower to maintain strong statistical information systems. As a result, the provinces with the highest energy use have the best data.

Finally, the National Bureau of Statistics aggregates data from companies and from local and provincial governments. This allows the number-crunchers in Beijing to crosscheck and correct their figures. It becomes pretty obvious, for example, if power companies report burning more coal than the mining companies say they produced.

The system is not perfect. There are still problems with accuracy, timeliness, and transparency, but there is now a standardized system for issuing corrections, as we also have in the United States.

Here is an example of how this system works. In the early part of this decade, the China Statistics Bureau noticed a deep dip in coal consumption that did not align with other economic indicators. They fixed that problem and then issued revisions for prior years.

In 2007, we saw another example of this increased reliability. International observers mistakenly thought the Chinese had misreported a steep decline in electricity use after the global financial crisis. In fact, the statistics were right, as later confirmed by industrial output numbers.

This brings me into my second point. At the national level, China's energy statistics are already a robust indicator of its greenhouse gas emissions. Some three-quarters of China's emissions come from energy use. This is important because China's national commitment reported under the Copenhagen Accord is to control energy-related carbon dioxide emissions. So for the moment, we're not focusing on China's emissions from farming or chemical processes or other complexities.

The bottom line is that we can be confident that we are getting a good idea of how China's energy emissions are changing just by looking at the overall numbers.

My third point is that China is spending a lot of time and money to improve data collection systems. This will allow the government to better understand how specific policies and programs are affecting energy use and emissions. We know that over the last four years China has improved its energy intensity, in other words, the amount of energy used per unit of economic output. We also know, from detailed program evaluations, that almost two-thirds of those improvements came from two major programs: One closed small and inefficient industrial plants. The other targeted the thousand largest industrial enterprises for big efficiency improvements.

What China needs for better program management, and is developing now, is the same kind of data for smaller programs and for local governments.

My fourth point is that China is also moving quickly to improve its methods for collecting data on actual greenhouse gas emissions, not just energy use. In 1994, China produced its first national inventory of emissions with the help of the U.S. Department of Energy. Now it is working on its second inventory. And under the Copenhagen Accord China has agreed to report its emissions every two years. They are currently creating a system that will allow for much easier updates than was the case under the first national inventory.

Finally, I would like to note that moving from preparing just national-level inventories to collecting firm-level numbers is quite recent, even in the United States and other developed nations. The European system is only one decade old and the Unted States required firm-level reporting only last year. In China, under the new 40–45 percent carbon intensity target, we are likely to start seeing annual reporting from local and provincial governments during the 12th five-year plan, which begins next year in 2011.

In sum, China's national data is already good enough for us to evaluate its commitments under the Copenhagen Accord. At the same time, China is making significant efforts to improve the quality and quantity of the data it collects on energy use and greenhouse gas emissions.

With that, thank you very much.

[The prepared statement of Ms. Seligsohn appears in the appendix.]

Ms. OLDHAM-MOORE. Thank you, Deborah.

Professor Wara, please.

STATEMENT OF MICHAEL WARA, ASSISTANT PROFESSOR, STANFORD UNIVERSITY LAW SCHOOL

Mr. WARA. Good afternoon. Thank you for inviting me to testify before the Commission.

My testimony concerns the role that carbon markets, and in particular the Clean Development Mechanism [CDM], have played and can play in increasing transparency in energy and climate governance in China.

The Clean Development Mechanism is a carbon offset market created by the Kyoto Protocol. After the EU emissions trading scheme, it's the largest carbon market ever created. Approximately 12 million tons of carbon dioxide offset credits are issued every month in the program, and it's estimated roughly that around 800 million tons of offsets will be generated prior to the expiration of the Kyoto Protocol at the end of 2010.

Fifty-five percent, roughly speaking, of offset creation occurs in China, and that's because rapid growth of emissions, in practice, creates the best opportunities for emission reduction opportunities. So, offsets tend to follow or to go where there is emissions growth.

The CDM is widely considered to have increased transparency in energy and climate governance in China, both in terms of public knowledge of the detailed implementation of energy policies by the NRDC, and in terms of firm-level greenhouse gas emissions within China.

The CDM creates incentives for information disclosure. In order to get credits, project applicants—either energy or industrial facilities in China—need to show, need to prove within the CDM regulatory process, both an estimate of baseline emissions, i.e., the no carbon offset project emissions, and a measurement of actual emissions by the project.

In practice, both estimates—one an estimate, another a measurement—are checked by third party verifiers, internationally certified under the Clean Development Mechanism, and are checked again by the CDM's governing body, the executive board, which meets regularly in Bonn.

Thus, transparency of information is necessary in order to determine both whether a project is additional—that is whether the credits being generated represent real change in behavior from the baseline case. In order to know that, one needs to know what the baseline case was for a particular powerplant or industrial facility, and transparency is necessary in order to determine the level of credit generation that should occur. In order to measure the difference between actual emissions and the estimate of the baseline.

Overall, the extent to which information disclosure enhancing the transparency of the energy sector in China occurs is largely a function of the sense that project developers, carbon offset project developers, i.e., large electricity generators such as Huaneng Power have, that they must disclose this information in order to win approval of their project applications under the CDM, and subsequently to generate issuance of carbon credits once the projects have operated.

Thus, the extent to which projects are transparent and/or render transparent aspects of the industry in which they operate is largely a function of how stringent the third-party verifiers—essentially the policemen, the enforcers—of the Clean Development Mechanism are in enforcing the rules and in checking claims made by project applicants.

This process of disclosure and review by third parties, in practice, has worked modestly well. Many projects disclose information that would otherwise be unavailable to the public. A wonderful example of this has occurred in the renewable energy sector, in particular in the wind sector in China, where, prior to the CDM, the tariff rates allowed by NRDC for particular wind farms were confidential business information. That made it very difficult for new wind farms to understand where their negotiating position should be relative to NRDC and created uncertainty in the marketplace with respect to returns.

Subsequent to the CDM, because all project documents are placed on the CDM Web site and are available globally, there is much greater transparency information about business prospects for wind within China. At the same time, a large amount of information that would be pertinent to determining baselines, to determining the business-as-usual case without carbon offsets, changing incentives, has not been disclosed or has been disclosed imperfectly.

I think the best example of this would be dispatch and tariff policies for coal-fired powerplants, which really are at the base case generation for much of China. In part, that disclosure has not oc-

curred because the third-party verifiers and the CDM executive board have not asked for it.

Transparency of verification, transparency of the actual measurement of emissions from projects has been much better. In general, monitoring documents are available publicly on the Web, and those documents provide a wealth of information that would otherwise be unavailable with respect to the operation of individual facilities within China.

The United States is not a participant in the Kyoto Protocol and so has limited prospects for impacting the operation of the Clean Development Mechanism. That being said, there are a number of U.S. NGOs that are increasingly participating in the process, along with a number of European, and to a lesser extent developing country, environmental NGOs, and attempting to serve a watchdog role, attempting to, by commenting on their registration of projects, increase the amount of disclosure that does occur within the CDM, in particular with respect to baseline issues.

In order to increase scrutiny further, the United States is likely going to have to become a major participant in global carbon markets. Of course, that is a subject of substantial debate within the United States at this point, and of substantial uncertainty. However, were the United States to become a major participant, there are a number of avenues that might be pursued to increase the voluntary disclosure and transparency that has been created by carbon markets.

Because of the need to prove a baseline case and the need to measure emissions relative to that baseline case, there are tremendous opportunities for increasing transparency, both for citizens living within China and for the broader international community with respect to both Chinese energy policies and to the actual practice at the facility level of both operating powerplants and measuring and monitoring greenhouse gas emissions.

Thanks very much.

Ms. OLDHAM-MOORE. Thank you, Dr. Wara.

Now we are going to turn to the second part of the event, which is we'll open to questions from the audience. First we'll start with Anna Brettell, and after Anna offers a question to the panelists, we'll turn to the audience.

When you have a question, please raise your hand. Please direct your question to one panelist.

So Anna, please begin.

Ms. BRETTELL. Great. My question is probably for David and Barbara. I think David noted that there's been a shift in the Chinese Government's attitudes toward environmental protection over the last few years, but that to sustain the momentum toward reaching China's environmental goals, more participation by environmental groups are necessary in that process.

So I'm just curious. Besides the examples that you already mentioned in your testimony, are there other examples of groups that have been working in cooperation with the government to improve the environment and monitor polluters? Are there any stories where groups were able to make a difference in a policy outcome or where you could see that there was better enforcement and environmental quality improved?

Mr. GORDON. Thank you. Sure. Let me tell you about a couple of examples. One thing I think that's important to point out, is that when we talk about environmental groups in China I think people recognize that the political space within China for civil society is a little bit different than perhaps here in the United States, and that's important to understand and important to recognize.

The groups that we partner with have found ways to adapt their approaches in a way that they can work cooperatively with Chinese Government officials, and especially creating those partnerships, creating those relationships at the regional level, the provincial level, the municipal level has been one element that we have seen as truly critical to their long-term success and their ability to create real environmental improvements.

In terms of the examples that you're asking for, I'll give a couple of examples. One was an example in Anhui Province recently, where three chemical factories were shut down. These were chemical plants in what's commonly referred to as a "cancer village" along the Hui River that had been polluting the waterway for quite some time, and community efforts to raise these concerns to the local Environmental Protection Bureau had largely gone unheeded for many years.

The partner organization that we worked with in that province worked together with the local community members to help find avenues to bring it to the attention both of the regional Environmental Protection Bureau, as well as to the national Ministry of Environmental Protection. They also worked to get some media coverage of these issues.

Taken together, that helped lead the government to a decision, in early 2008, to shut down those factories. There was a period of time given for the relocation of those factories. True to their word, at the end of 2008, the government did follow through on its promise, which resulted in some very significant public health benefits and environmental benefits to the people living in that community directly.

Since that time, just to give another example from that same province, the partner group that we worked with discovered a polluting factory on Chao Lake, and just their work, together with the regional Environmental Protection Bureau and the local media, helped to get that factory to shut down as well because of their pollution practices.

These were factories that were far out of compliance with laws and norms within China, so, in fact, the relationships that our partner organization developed with the government have turned out to be very friendly because the government was relying on our partners to help them carry out these objectives of dealing with this level of pollution.

In one other example in Gansu Province, we have a partner organization that was attempting to use the Open Government Information laws and gain access to information. They approached the Environmental Protection Bureau early last year, in early 2009, at which point they were told that, well, with the financial crisis, now is a bad time to ask companies to provide more information.

However, even though they got an initial rejection in that way—which I think Barbara talked about, the time it takes for various

government agencies to learn how to implement transparency laws appropriately—the long-term result was positive in that, as a result of that correspondence and that engagement, our partner organization developed relationships with that department, with that bureau that has since led to the bureau inviting our partner organizations to assist them in environmental monitoring efforts with regard to specific factories.

So they've been invited to join in on government-sponsored monitoring efforts. They've tied that together with the work that I mentioned in my testimony to conduct third-party audits of factories. This has led to some specific improvements being made in at least one biochemical plant in the region, improved standards being applied there. So again, these are important examples to understand in terms of how local organizations can adapt some of these models to find ways to work effectively within the system. Thank you.

Ms. FINAMORE. That's a very interesting question. In addition to the examples that I gave in my written testimony, I'd also like to highlight a couple of small, but very promising developments in the use of the court system, both for enforcement purposes and for open information, in particular, development of a system—currently very tiny, but promising—for public interest lawsuits.

Now, I'm sure many of you know that there have been many years of lawsuits by groups like the Center for Legal Assistance to Pollution Victims, including some class action suits that have yielded damages for injured members of the public, particularly farmers and fishermen whose livelihood has been threatened by pollution.

But what has happened in the last year or so that's different, is, number one, the development of 11 environmental courts, mostly focused in three provinces, and interestingly enough, located in places you may never have heard of or wouldn't expect to see them. But these are areas where there have been severe environmental problems, most often water-related, and where there has been environmental unrest. This indicates very clearly the role that the government sees for environmental lawsuits as a way to help promote social stability, because the alternative is often social unrest.

Even more exciting to me as an environmental lawyer, is that two of the cases that have been resolved in these environmental courts have actually been brought by an environmental NGO, not on behalf of members of the public, but on behalf of the public as a whole. This is the kind of lawsuit that NRDC pioneered in the United States 40 years ago and the potential, if this is continued and expanded, for improving enforcement and environmental information cannot be overstated.

Now, I hasten to add that this environmental organization is what is often referred to as a GONGO, a government-organized NGO. It's the All China Environment Federation. This is a publicly, government-approved NGO. So I think that's part of the reason why these lawsuits were able to go forward.

One of them resulted in a settlement of a dispute that had been ongoing for 15 years, so that shows the power of these lawsuits. We believe that they set a precedent. Even though the plaintiffs in these two cases were not the types of independent NGOs that David was talking about, we think they set a precedent that is

going to make it possible for other NGOs to bring cases in the future.

Ms. OLDHAM-MOORE. Thank you.

Now we'll turn to the audience. Yes, please. Can you please stand? Please state your name, but project your voice. Usually we have microphones. Today we don't, so we've got to project.

AUDIENCE PARTICIPANT. I thank all of you for a very insightful set of discussions. Thank you. I'm (inaudible) with (inaudible) Strategies. Rather than tracking absolute emissions reduction, China wants to track emissions reductions through energy intensity targets. In your opinion—maybe directed to Debbie, but all of you could address this—will China really get where it needs to be in terms of absolute reductions? Are there any challenges with respect to the measurement, reporting, and verification that this presents?

Ms. OLDHAM-MOORE. Great question. Please, Debbie.

Ms. SELIGSOHN. Okay. So China's moving from energy intensity to carbon intensity in the 12th five-year plan, so both are intensity per unit GDP, but what they're measuring is going to change. It's going to be energy-related carbon dioxide emissions per unit GDP. So I think the reason the Chinese chose to use this metric is because the other alternative that a lot of developing countries have chosen to use is an offset from business as usual [BAU]. That gets you immediately into a lengthy and complicated discussion about what business as usual is.

I think Michael illustrated, in his discussion of this on the CDM market, that even in what is relatively simple and small-scale at the project level, determining what the baseline is and determining a BAU is very hard. So one of the tricks or advantages of using a carbon intensity metric is it's straightforward, it's CO_2 per unit GDP, and you don't have to worry about what the baseline is.

It's worth realizing, the CDM market is minuscule compared to China's overall emissions, so the type of approach that he talked about at the project level is not conceivably scalable, even in a developed country like the United States, much less in a developing country with resource constraints. So you need something that's fairly straightforward, and that's why they chose to go with this carbon intensity approach.

The reason you wouldn't use an absolute emissions approach at this point is because China is still a developing country. Remember, their per capita GDP is about $5,000 per capita, compared to $45,000 in the United States. They are still in the period of rapid build-out of infrastructure, rapid urbanization as people choose on their own to move from rural areas to urban areas seeking jobs, et cetera.

So I don't think there's any question among anyone who observes developing country emissions that China's emissions are going to continue to grow for quite some time, and there's no one in the climate world who thinks that it would be otherwise. So what you're looking for is a way to slow the rate of that growth, and then hopefully reach a peak and then hopefully find a way to get over to the other side and start declining.

So you want something that is a control on growth rather than seeking to decline from a baseline. That was recognized all the way

back in the U.N. Framework Convention in 1992, and it's clearly recognized, first in the Bali Action Plan, and then in the Copenhagen Accord. I think everybody understands that. So that's why you would choose it.

I think the other part of your question is, is the way China is going about this going to be sufficient? So when we look at that question we're really looking at where we're trying to get, both by 2020 and by 2050. The Chinese, for a lot of reasons, have said they have agreed to the 2-degree goal, to keep the global temperature within a maximum rise of 2 °C, but they mostly wanted to talk about actual practical measures up to 2020. I think that has a lot to do with being a rapidly developing country, where it's hard to know what's going to be going on beyond 10 years from now.

If we look at the International Energy Agency's [IEA] scenario for what you would need to keep the world within 450 parts-per-million carbon dioxide equivalent, which is what is hypothesized to be necessary to keep the world within 2 °C, China's carbon intensity target is basically in line with what they suggest would be needed under the 450 scenario up to 2020. What the IEA's scenario does is stabilize global emissions by 2020, and then look for significant reductions after 2020.

Now, to stabilize by 2020, developed country emissions need to be going down now. Remember, in the 1992 convention, what all of us as developed countries agreed to was that we were going to start reducing our emissions right away, and that was 18 years ago. So the IEA's scenario is basically all of the developed countries would be reducing now, and then you would have these various controls in developing countries trying to control the rate of increase.

China's carbon intensity target, as long as average economic growth does not go much above 8 percent over the next decade, would be broadly in line with that. If economic growth winds up being really high, I think they would need to re-look at it. If you still have the same carbon intensity target, you would definitely see much more rapid growth in emissions.

The U.S. target of 17 percent is a little shy of the IEA 450 scenario. It's close. For the United States, about 18 percent would fit the 450 scenario. I think the Chinese set that 40–45-percent goal with some concern that growth might actually be well less than 8 percent, and they're always pretty cautious in their planning and their predictions, assuming a somewhat lower growth rate than they actually wind up with.

There has been some disagreement among economists on where China is going to go in the next 10 years in terms of growth, but I think most people don't expect it to be much above 8 percent. There is a school of thought that thinks it will be less. So to some extent we'll have to wait and see. They have an opportunity, in the middle of the period, to reexamine and adjust because they're going to incorporate this target in their five-year plans, so they'll have two five-year plans to work with.

Ms. OLDHAM-MOORE. All right. Thank you.

Yes. The gentleman with the purple collar. Please.

Mr. Weis. Hi. Robert Weis with Global Resources Institute. My question is for either (inaudible). You both spoke about environ-

mental protection and climate change as being basically the same thing, or at least moving in the same direction. But recent research indicates that they are separate (inaudible) for example, sulfur dioxide and also CO_2.

Sulfur dioxide actually has a net cooling effect. In fact, our research indicates that aerosol (inaudible) sulfur dioxide and organic (inaudible) so there is somehow some synergies between (inaudible) and in some of them there is a (inaudible) we've seen of (inaudible) environmental benefits, but also considering climate considerations as well since (inaudible). What are some of the steps that China can take (inaudible)?

Ms. FINAMORE. I would hate to think that China's main tool for controlling its CO_2 emissions was to increase its sulfur dioxide emissions. I know what you're saying, though. Research has shown a cooling effect on the SO_2 emissions. When I was saying they were going in the same direction I was basically talking about the transparency issue, not the actual levels of pollutants, whether it be carbon or SO_2. So to me, in finding ways to reduce CO_2 there are synergies, of course. If it means using less coal you're going to reduce both and you're going to improve the health and economy of China. To me, that's the win-win situation.

One of the ways to do that is, of course, through renewable energy. I was just in Beijing last week touring some of the very exciting developments on solar power in China, including a whole city called Solar City that's designed to promote the solar hot water heaters that China leads the world in. But I was struck by the fact there and at other solar facilities, that the level of particulates in the air made it very difficult for the solar radiation to reach these facilities.

So here's an area where reducing coal is going to have an impact in several ways and it makes it more likely that solar can increasingly substitute for coal. So to me, that's the way to go rather than to say let's just focus on one pollutant and try to reduce that. In fact, that's one of, I think, the areas where China can improve its air pollution regulation.

In this current five-year plan it's focused so heavily on reducing SO_2, and it claims to have met its five-year target a year ahead of schedule, what we're hearing is that that focus on SO_2 reduction has meant less resources, less attention paid, less accountability for reducing a number of other air pollutants, so we're hoping that will change in the coming years.

But I think in general, my view is that a comprehensive approach is needed for all pollutants. We have promoted this four-pollutant strategy in the United States for many years. We believe it's cheaper for powerplants, in particular, to regulate SO_2, CO_2, NO_x, and mercury all at the same time rather than regulating them sequentially, which is going to cost more money and therefore be less likely to be implemented.

I would say also that the equipment that is often used to monitor the SO_2 in the powerplants can also be used for CO_2 reduction, another reason to put that monitoring equipment in place that can be used to monitor more than one type of pollutant. So in general, I think a comprehensive approach is the way to go.

Ms. OLDHAM-MOORE. Debbie, you wanted to say something?

Ms. SELIGSOHN. Yes. I, first of all, want to say that I absolutely agree with Barbara. We're certainly not suggesting, at the World Resources Institute, that we would use one pollutant to counter another. In fact, a lot of our work, in working at the company at the local level in terms of greenhouse gas emissions accounting is specifically to help companies and localities plan their energy efficiency moves in the hope that it does yield those co-benefits on both local pollution as well as on energy.

The other thing to note in addition to what you said, is that in fact a number of provinces have used their experience with continuous emissions monitoring of sulfur dioxide under the 11th five-year plan to add continuous emissions monitoring of NO_x as well at their powerplants. There are now three or four provinces that have mandated this, even though it's not nationally mandated yet.

I think we are going to see that mandated in the next five-year plan. It's with the monitoring of NO_x where you actually have to monitor an additional gas as a diluent, that you have to choose either carbon dioxide or oxygen. And therefore most places choose carbon dioxide. That's going to give you the actual continuous emissions data on CO_2 from powerplants, and potentially from other big installations.

So while I completely agree with you that there was this kind of mono-fixation on SO_2 in this five-year plan, some of the learning process from actually focusing on one pollutant and making a big dent in those emissions, which I think was the Ministry of Environmental Protection's philosophy in choosing to do this, has actually helped provinces start to think about other pollutants.

Ms. OLDHAM-MOORE. Yes, please.

AUDIENCE PARTICIPANT. Hi. My name is (inaudible). I have a question for Debbie (inaudible) about the majority of power use (inaudible). I wonder if any—we talked about (inaudible) energy sources (inaudible) of energy (inaudible) different as we see more development (inaudible)?

Ms. SELIGSOHN. I mean, I don't know that it's going to change the ratio, at least in the short to medium term, because the efforts to develop the west have been longstanding, and the east has continued to boom. What I think we've seen over time, is there's a learning curve on environmental issues where innovations tend to happen on the east coast.

Once provinces get wealthy, the governments get more focused on it and they get a lot more pressure from their citizens. As these lessons get developed, they get picked up sometimes directly by other provinces, but often by the national government that then decides to make them national policy. So while there has been this tendency globally for each country to have to go through its own mistakes and then learn from them, that seems unfortunate. It would be better if we could all learn from each other's mistakes.

Within China, there does seem to be sort of a learning curve from one place to the other, so that hopefully the lessons learned on the east coast can be transmitted to the west. But I think in each province, there's going to be sort of a period where there has to be some effort and some pressure from the center and from others to improve data, et cetera. But as what western provinces do

becomes more a part of the national economy, that data gets picked up better by national recordkeeping mechanisms.

AUDIENCE PARTICIPANT. Do you have any examples of (inaudible) that are (inaudible)?

Ms. OLDHAM-MOORE. Examples of western cities that are leapfrogging——

AUDIENCE PARTICIPANT. Or any examples of (inaudible) and implementing (inaudible).

Ms. OLDHAM-MOORE. Western cities that are making greater progress than anticipated, learning from eastern cities.

Ms. SELIGSOHN. I have to admit that most of the cities that I know of that are working are in the east or in the center. There are some in the center that are really focusing on it, like Baoding, which is not a wealthy city but has decided it wants to be like a low-carbon leader. But I don't actually know of any sort of far-west cities. I don't know if Barbara's survey has some.

Ms. FINAMORE. Well, in answer to your first question, two trends that I see of interest are, one, China's very heavy investment in what they call a strong, smart grid. A lot of that investment is emphasis on the strong. It's building the transmission lines that are going to help connect the renewable energy resources in the west to the sources of demand in the east. But the lessons to be learned from within China are how to connect the renewable resources to the grid. That's been a real problem, not just in China, but also in the United States. This is another area where I think there's tremendous interest and potential for collaboration.

The other area I note is that China's target for non-fossil energy of 15 percent by 2020 relies heavily on large hydro, a lot of which is planned or being constructed in the west and other parts of China. But what we're seeing and hearing is a lot of increasing concern within China based on all the droughts that are going on right now, and concern that even with the dams that they are planning to build, if they build them, there's not going to be the water in there to be able to generate the electricity at the high rates that are being planned. So these are two things to watch.

Ms. OLDHAM-MOORE. Yes, sir. Please. In the back.

AUDIENCE PARTICIPANT. I have a question for Barbara and Deborah. So what lessons has the United States learned from China in terms of data collection and data reporting process for energy (inaudible)? And a second question. What can you tell us about the progress in China in the second national communication in terms of factory inventory?

Ms. OLDHAM-MOORE. In terms of the inventory? Okay. Great. Of greenhouse gases. Thank you.

Ms. FINAMORE. Well, maybe I'll address the first question and Deborah can address the second.

I don't necessarily think this is an area where the United States can learn from China; I don't think it would work in our system. But I think it's important for people to realize that a new approach that China is taking to improve accountability, and therefore transparency and enforcement, is the job performance rating system of provincial governors and the heads of the large enterprises. Just for an example, the SO_2 target in the current five-year plan. There was a similar target, actually much larger, a 20-percent reduction

target, in the 10th five-year plan that was just not even close to being reached. Rather than going down 20 percent, SO_2 emissions went up about 27 percent in the period 2000 to 2005. What changed between the 10th five-year plan and the current one to enable China to meet that SO_2 reduction target? I think one of the main factors was the adoption of this new job performance rating system in which provincial governors and other leaders are rated not just by how well they grow their GDP, but by how well they meet the SO_2, the COD, and the energy intensity targets.

There's actually a very complex system, a scorecard that the government at the central level has put in place and that applies to every province and local government that rates these officials and determines what their career path is going to be, whether they'll get a bonus, whether they'll be transferred to Beijing for a higher level position, or perhaps even lose their job. This is almost unheard of; if you think of President Obama telling state governors that they're going to be rated on how well they meet certain of his environmental targets.

But China has a different political system and they are finding that this is a way of really motivating the local governments in a way that's never been seen before. So we hear that the carbon intensity targets will probably be added to that job performance rating system in the next five-year plan, and also several other air and water pollutants. Again, I'm not going to say this is something we should adopt in the United States, but people need to realize the power of this important new tool.

Ms. OLDHAM-MOORE. Thank you.

Anybody else? Debbie?

Ms. SELIGSOHN. Actually, I think there may well be some lessons, whether they're going to be for the United States or whether they're useful for other developing countries, because in certain areas China is innovating lower-cost ways to do things that we're doing. For example, the continuous emissions monitoring equipment that they're using, they've installed it in a way that's much less expensive than in the United States, and U.S. EPA is working with them on it. So if it turns out that it gets you as good data, or close enough to as good data, it would mean it would become much more useful not only in China, but elsewhere in the developing world.

The Chinese have already shown that they can produce scrubbers for powerplants that are slightly less effective than those that are used in the United States and Europe for radically less cost, and that may be an excellent trade-off for developing countries, or certainly in the short- to medium-term. So there are a lot of innovations there where I think there's a lot of cost-saving lessons that people are going to be able to take away.

On the inventories, we know they're actively developing them. They launched this project more than two years ago now. They have that new memorandum of cooperation with the U.S. EPA that they signed during President Obama's visit last October. It is specifically working on developing these systems so that the inventory is not a one-off exercise, but actually becomes something that can be updated every two years.

Because the big issue—and this was in all developing countries—was the way the first set of inventories were done in the 1990s, the first set of national communications, is that countries got some project financing and they did it once, and then they had no system for regular updating. So only one developing country has submitted a third national communication and less than a dozen have submitted two, so this is sort of a global issue. Again, hopefully some of the lessons that the Chinese and EPA, together, learn on how to get these systems set up for regular updating will be useful to other developing countries as well.

Ms. OLDHAM-MOORE. Thank you.

Will? Please.

Mr. CHESTER. Will Chester—Commission. My question is for Mr. Wara and Mr. Gordon. I think in the past, China has taken a few different approaches to a lot of environmental issues and pollution controls. There's the 2006 Green GDP (inaudible) sensitive (inaudible), and then recently in February, the Pollution Census was released. My question is, the Pollution Census, which was a large undertaking, that took two years, reported much higher rates of pollution than official numbers had shown currently.

My question is why there was such a discrepancy in the first place, if these figures are going to be reconciled going forward, and is there any acknowledgement by the government that there might be some discrepancies as to the current system?

Ms. OLDHAM-MOORE. Great. Thank you. Great question. Mr. Wara?

Mr. WARA. Well, my understanding of the cause of the discrepancies—and I will confess to not knowing all of the detail on this issue, is that the more recent estimates included agricultural inputs to water, like non-point source biological oxygen demand, whereas the earlier estimates did not.

In a context where the price of fertilizer is heavily subsidized, and it's a known issue that there's substantial over-fertilization, over-use of fertilizer in agricultural settings, it's not surprising that the numbers that include that input would be much higher. That may not be the whole story, but that's a piece of the story that I have heard.

Ms. OLDHAM-MOORE. Great. I'm sorry. Will, did you direct your question to somebody else?

Mr. CHESTER. To Mr. Gordon.

Ms. OLDHAM-MOORE. Oh. Excuse me.

Mr. GORDON. I would just add that I think the point I take from this is that it's an iterative process. I do expect there to be further versions of this, whether it be a new version of the Pollution Census or some further approach that is taken. Again, this is very similar to the kinds of processes we've seen work here in the United States, that not all the information is going to be accurate the first time around and it's impossible to expect that.

However, the more you have multiple systems of reporting the more you're able to verify, you're able to check between them. If those multiple systems are transparent, then you have plenty of options for raising some of the questions like you're raising now to try to refine those systems over time. I believe there's a very strong

commitment coming from government levels, especially the central government within China, to do that.

Ms. SELIGSOHN. May I?

Ms. OLDHAM-MOORE. Yes. Absolutely.

Ms. SELIGSOHN. The extraordinary thing about the Pollution Census was getting the active cooperation of the Ministry of Agriculture and getting the Ministry of Agriculture actually at that table announcing those results. I think that was a deliberate effort by the State Council, China's highest governing body, to get that part of the pollution picture that they've very much known is a big part of the picture, but getting different ministries working together and making it happen is always a difficult political process. I think the census was actually a major step forward and I think we'll start to see more collaborative action on agricultural pollutants, which of course are a major issue in the United States and every other agricultural country as well.

Ms. OLDHAM-MOORE. Great. Yes, sir?

AUDIENCE PARTICIPANT. I'm (inaudible) and I am a student at the University of Maryland School of Law (inaudible). My question relates to what you mentioned earlier that two of these cases have been brought by citizen environmental groups. Did the local rules that were passed extend to environmental groups based in the United States?

My question is two-part. First, is this the kind of (inaudible) you talked about earlier in terms of further (inaudible)? And second, is this kind of (inaudible) problem for the cooperation (inaudible) in terms of (inaudible)?

Ms. OLDHAM-MOORE. That's a fascinating question.

Ms. FINAMORE. Guiyang is one of the sites of the environmental courts. We've been working closely with them on these regulations. I did not mean to suggest that the window would open for NGOs based outside of China to bring lawsuits, I meant NGOs within China. NRDC, for example, has no plans or interest in bringing that kind of litigation within China, but we do think there is certainly a role for the many NGOs, especially in the local areas, that are concerned about their local sources of pollution, to take action on behalf of the community as a whole.

One problem I would mention that means this whole process is going to move slowly is that, even though these courts have been set up under some basic laws in China that allow local courts to be established, there is still no specific regulations or judicial interpretations in China that allow for the types of regulations that you're talking about. So we're now working with the higher level courts to try and get them to put these court experiments, such as they are, on a more legal footing. I think that has to be the next step.

Ms. OLDHAM-MOORE. Great. Thank you.

Anybody else? Oh, I'm sorry. David, are you going to respond? Oh, great. Terrific.

Mr. GORDON. Since some of the question was, I guess, addressed toward how will this affect our local partners, first of all, I very much agree with what Barbara said. Just to be on the record, Pacific Environment also would have no plans to start any lawsuits in China. It's not our role.

Now, it is a standard practice for legal systems, including the U.S. legal system, to have standards whereby a foreign NGO could, under appropriate circumstances, bring a lawsuit here in the United States. In fact, there are some efforts under way where that's being tried.

I would just comment that really the development of these public interest lawsuits and litigation practices in China are very important and they're part of the solution for local capacity and building local solutions to these problems.

The key point here is helping people within China to have standing, to have access to the courts, to have access to all of the legal ways to resolve any conflicts or differences so that the rule of law becomes the mechanisms that they use to resolve key pollution issues.

Ms. OLDHAM-MOORE. One final question and then we'll close. Please, sir. Actually, we have two questions. How about both of you ask a question, but just very quickly, please.

Mr. LITTLE. Maybe someone on the panel can respond to this, and that would be great. My name is Mark Little, House Regulatory Affairs. (inaudible) natural resources (inaudible) outside of China, so I was wondering, is there any interest by the Chinese Government to buy loans, maybe by Chinese banks, to get (inaudible) in Southeast Asia and in Africa on board with some of these kinds of——

Ms. OLDHAM-MOORE. That's a great question. External migration of good practices. Is that happening?

Ms. SELIGSOHN. Actually, the Export-Import Bank of China came out with its first set of principles on that about two years ago. It's an area where I think there's a lot more work that everybody wants to see done. It's an area where even some of the Chinese local NGOs have been talking to various ministries, including the Ministry of Commerce, about how to set up good practices for companies moving outside of China. The Ministry of Commerce has set some up on forestry, actually. It is an area that we are working on in terms of working with the IFIs [international financial institutions] and with other Export-Import Banks to try to work globally on this question, so I think it is a developing area.

I don't think it's going to be an easy one, necessarily, for China, as it has not been easy for other countries. I think people often overestimate how much knowledge the Chinese Government has of what its companies are doing when they go abroad, and there's an awful lot that is going on that involves small, private Chinese investors that the government may have no knowledge of. So it's definitely a work in progress, but it's something that is increasingly on their radar screen.

Ms. OLDHAM-MOORE. Thank you.

And sir—oh, excuse me. Did you want to say something?

Mr. GORDON. Just quickly, to add to that, that's all very much a work in progress and it's very good that the Export-Import Bank of China regulations were mentioned. It's an area that is getting a lot of attention right now. One important area worth mentioning is the Chinese Government has adopted rules to try to prevent financing of egregious polluters within China, and that's been an effective tool used to try to control pollution domestically. Many of

the NGOs see an opportunity to take that over into the international arena and educate the Export-Import Bank of China, and others, about that. It is going to be a long process but I think it's a very worthwhile one.

Ms. OLDHAM-MOORE. I cut you off. Please, young man. Thank you.

Mr. COATES. My name is David Coates. I'm with the Natural Resources Defense Council. This is a question for Michael Wara.

Dr. Wara, I was wondering whether you could share with us some lessons from (inaudible) regarding the concept of business as usual, or a baseline. This is something that's much more a mainstream question following China's announcement of its decision to reduce carbon intensity in the lead-up to the December Copenhagen Conference. What's tricky is kind of the lack of standard methodologies or accepted principles (inaudible). I was wondering whether the (inaudible) experience might (inaudible).

Ms. OLDHAM-MOORE. You have the last word.

Mr. WARA. I would tend to agree with what Debbie said earlier. To the extent that it's possible, baseline setting is an approach where we try to project far into the future some business-as-usual baseline. It's one that we should be very cautious about.

The CDM to this day struggles with this issue and it leads to some of the most difficult and controversial decisions that the executive board has to make. There are no signs that that problem is going away, is going to get any easier anytime soon. The same problem is likely to bedevil red programs, if and when they are implemented at scale. I think we saw some of the same issues coming up in Copenhagen with respect to base years from which to judge emissions reductions.

So it's a problematic concept because we do not know the future terribly well, especially projecting out 10 to 20 years. So I would just say that if there's one lesson the CDM teaches with respect to baselines, it's be careful, be cautious, and recognize the uncertainty that's inherent in an unobservable.

Ms. OLDHAM-MOORE. I want to thank the panelists for an absolutely fascinating discussion today. Thank you for traveling and being with us today.

Thank you to Anna Brettell for pulling this event together. You did a terrific job.

Have a great afternoon. Thanks.

[Whereupon, at 3:34 p.m., the roundtable was adjourned.]

A P P E N D I X

PREPARED STATEMENTS

Transparency in China:
Implications for the Environment and Climate Change

Testimony before the Congressional Executive Commission on China
Roundtable on Transparency in Environmental Protection and Climate Change in China

April 1, 2010

Barbara A. Finamore
Senior Attorney and Director, China Program
Natural Resources Defense Council (NRDC)[1]

Chairman Dorgan, Chairman Levin, Members of the Commission:

Thank you for the opportunity to present these remarks to you today. I am the Director of the Natural Resources Defense Council's (NRDC) China Program and have been working on environmental issues in China for nearly twenty years. NRDC was the first international environmental group to establish a clean energy program in China. From our humble beginnings in the mid-1990s, we have grown to a team of more than thirty people working out of our Beijing and U.S. offices on climate change, energy efficiency, renewable energy, responsible sourcing, sustainable cities and environmental governance.

NRDC's Environmental Law Project has been actively engaged in environmental transparency projects in China for nearly five years in an effort to improve the use of environmental information to strengthen implementation of China's environmental laws and policies, and to enhance public involvement in environmental protection. This is just one component of a suite of projects in China to improve environmental governance and to help China achieve its environmental and energy goals. Our other projects on governance and law include collaboration on environmental legislation, such as China's *Atmospheric Pollution Prevention and Control Law*, work with China's environmental courts, judges and lawyers, as well as efforts to build better environmental health and climate change governance.

Importance of Open Environmental Information

My experience in China over the last twenty years and many years before that working on environmental issues in the United States has given me a clear understanding of the fundamental importance of public access to accurate, timely environmental information as a tool for strengthening environmental protection. This has been a pillar of our work at NRDC in the United States, China and around the world for over four decades.

Open information mechanisms have been proven to reduce pollution and improve human health by driving better environmental protection. The first broad-based use of environmental information as a regulatory technique was the *Toxics Release Inventory* ("TRI"), established in 1986 in the United States in the aftermath of the Union Carbide chemical accident in Bhopal,

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[1] http://china.nrdc.org

India. In the past decade, signatories to the "Aarhus Convention"[2] ratified open information as a key tool for environmental protection and subsequently created the *Protocol on Pollutant Release and Transfer Registers to the Aarhus Convention*, which established the rules for TRI-like systems in the Aarhus signatory countries. More generally, disclosure of environmental information is now recognized as a core component of environmental regulatory regimes in countries around the world.

China's Recognition of the Importance of Environmental Information

Like many other countries, China has also begun to look to environmental information disclosure as a way to improve environmental protection. China's leaders recognize that open information is an important way to bring a variety of stakeholders – such as members of the public and businesses – into its environmental protection efforts, and to improve the quality of information needed to achieve the country's environmental and energy targets. Environmental transparency is also seen as having the potential to provide assistance to perennially overextended environmental agencies. China's shift towards greater transparency on environmental issues has created an opportunity for international cooperation and capacity building, and NRDC has been working with various stakeholders in China, including government agencies, environmental non-governmental organizations (NGOs), and local communities, to build a stronger foundation for environmental transparency in China.

I. China's Actions to Increase Environmental Transparency

In recent years, China has made a number of important moves towards greater transparency in general and environmental disclosure in particular.

Open Government Information Regulations

On May 1, 2008, China's first national regulation on freedom of information went into effect. The enactment of the *Open Government Information Regulations* ("*OGI Regulations*")[3] was a landmark for a country not known for a tradition of information disclosure. China's movement toward greater open government information has been driven in large part by the understanding that greater transparency will benefit economic development, curb corruption, improve government performance and generally improve the lives of its people.[4]

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[2] The "Aarhus Convention" is the common name for the 1998 United Nations Economic Commission for Europe's (UNECE) Convention on Access to Information, Public Participation in Decision-making, and Access to Justice in Environmental Matters.

[3] *Zhonghua renmin gongheguo zhengfu xinxi gongkai tiaoli* (中华人民共和国政府信息公开条例). A copy of the regulations is available at: www.gov.cn/zwgk/2007-04/24/content_592937.htm. An English version of the regulations translated by the China Law Center of Yale Law School is available online at: www.epa.gov/ogc/china/open_government.pdf. This English translation of the regulation will be referenced in this testimony.

[4] Jamie Horsley, "China Adopts First Nationwide Open Government Information Regulations", available at: www.law.yale.edu/documents/pdf/Intellectual_Life/Ch_China_Adopts_1st_OGI_Regulations.pdf.

Environmental Information Disclosure Regulations

Of all of China's government ministries, the Ministry of Environmental Protection ("MEP") has been the most enthusiastic adopter of information disclosure as a regulatory tool. MEP was the first ministry to promulgate implementing measures for the national *OGI Regulations*, and issued environmental information regulations on the same day as the *OGI Regulations*.[5] These environmental information regulations, called *Measures for Environmental Information Disclosure (For Trial Implementation)* ("*Environmental Information Measures*"), set forth relatively detailed environmental information disclosure obligations for environmental protection departments and certain enterprises throughout China.[6]

The enactment of the *OGI Regulations* and the *Environmental Information Measures* in 2008 arose from more than a decade of local experimentation with government disclosure and open environmental information. China has incrementally instituted various forms of environmental disclosure at both the central and provincial level since the late 1990s:

- In 1998, a pilot project, called the GreenWatch Program, was instituted in Jiangsu Province with guidance from the World Bank that established a rating system for factory-level environmental performance. The State Environmental Protection Agency ("SEPA"), the predecessor to the Ministry of Environmental Protection, subsequently issued non-mandatory guidance encouraging nationwide implementation of this rating system in all provinces. Where implemented, this system has often been an important tool for identifying polluting enterprises across sectors in different provinces.
- Since 2002, more than 30 provinces and municipalities across China have enacted "open government information" legislation.[7]
- The 2003 *Clean Production Promotion Law* (and the related 2004 *Interim Measures on Clean Production Audits*) required key polluting enterprises to disclose information about emissions and other environmental data.[8] This was the first law to require disclosure of factory-level pollution for a range of facilities.
- The 2003 *Environmental Impact Assessment Law* (and the related 2006 *Measures on Public Participation in Environmental Impact Assessment*) required partial public disclosure of Environmental Impact Assessment ("EIA") documents.
- In 2005, a key State Council document, entitled the *Decision on Implementing Scientific Development Outlook and Enhancing Environmental Protection*, which set forth guiding principles on environmental protection, stressed the importance of environmental

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[5] MEP was at that time known as the State Environmental Protection Administration ("SEPA"), but has since been elevated to full ministry status and accordingly been renamed the "Ministry of Environmental Protection."

[6] *Huanjing xinxi gongkai banfa shixing* (环境信息公开办法（试行）), available at: www.gov.cn/flfg/2007-04/20/content_589673.htm. An unofficial English translation of the *Environmental Information Measures* is available online at: www.greenlaw.org.cn/files/laws/open_environmental.pdf.

[7] Horsley, *supra* note 3.

[8] Key polluting enterprises are those enterprises that are required to implement clean production audits under Article 28 of the *PRC Law on Clean Production Promotion*, including: heavily polluting enterprises that violate pollutant emission standards or violate the quota of total emission of pollutants, and enterprises that use or emit toxic and hazardous substances during production.

information disclosure, public supervisory mechanisms, and disclosure of enterprise violations of environmental standards, among other things.[9]

The *Environmental Information Measures* enacted in 2008 built upon these experiments in environmental information disclosure. They require environmental protection bureaus to proactively disclose 17 categories of environmental information and to respond in a timely fashion to public requests for environmental information.[10] In addition, these regulations require that certain enterprises, whose emissions have exceeded national or local emission standards or exceeded total emissions quotas, disclose information such as the volume of pollution emitted by their operations that exceeds legal standards or prescribed limits.[11]

II. How is Access to Environmental Information Being Implemented?

Under the *Environmental Information Measures*, environmental protection departments at the national, provincial, municipal and city levels are required to comply with various environmental information disclosure obligations. Environmental protection departments are now required to proactively disclose, *inter alia*, information concerning:

- Environmental quality status, environmental statistics and environmental investigative information;
- Allocation of total emission quotas of major pollutants and their implementation;
- Issuance of pollutant emission permits;
- Acceptance of EIA documents for construction projects and the examination and approval status of the EIA documents;
- Collection of pollutant emission fees and the amounts paid by polluters;
- Letters, calls and complaints from the public about environmental issues or pollution caused by enterprises;
- Environmental administrative penalties, administrative reconsideration, administrative lawsuits and enforcement of administrative compulsory measures; and
- Lists of heavily polluting enterprises, enterprises that have caused serious environmental pollution accidents or events, and enterprises that refuse to enforce environmental administrative penalty decisions.[12]

Environmental protection departments must respond to requests for information within 15 working days of receiving them, with the possibility for a 15 day extension if the applicant is notified.[13] These disclosure obligations are subject to certain exceptions such as state secrets, commercial secrets and personal privacy.[14] In addition, if applicants believe the administrative

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[9] *See* State Council, "Decision on Implementing Scientific Development Outlook and Enhancing Environmental Protection" Guofa [2005] No. 39, December 3, 2005, available at: http://www.gov.cn/zwgk/2005-12/13/content_125680.htm

[10] *Environmental Information Measures,* Art. 11.

[11] *Id.*, Art. 20.

[12] For the full list of environmental information that must be disclosed, see *Environmental Information Measures*, Art. 11.

[13] *Id.*, Art. 18.

[14] *Id.*, Art. 12.

agency has failed to fulfill its obligations under the regulations, they may report it to a higher-level administrative agency. If applicants believe the administrative agency has infringed their lawful rights and interests, they may apply for administrative reconsideration or file an administrative lawsuit.[15]

These legal requirements regarding the disclosure of environmental information are a significant step forward for environmental transparency in China. However, the key lies in how effectively the measures are being implemented.

Study on Environmental Information Disclosure

NRDC partnered with the Institute of Public & Environmental Affairs ("IPE"), a Chinese research institute, to track the progress of implementation of the *Environmental Information Measures* since they became effective on May 1, 2008.[16] NRDC and IPE conducted a study of 113 municipal environmental protection departments to assess progress in implementing these regulations across China. After the first year of implementation of the regulations, our assessment shows that average compliance levels were low. Nonetheless, a number of cities performed well in each of the eight categories of information disclosure evaluated. Our study also uncovered a surprising range of innovative practices in information disclosure that can serve as a model for underperforming cities.

a. Disclosure of Environmental Information in Practice

Different cities are meeting their information disclosure requirements in a variety of innovative ways. For example:

- **Ningbo**, a city in Zhejiang province, ranked the highest in terms of its overall performance on environmental information disclosure. In 2008, Ningbo disclosed more than 600 documents regarding environmental enforcement and enterprise violation records on its website and did so in a relatively timely manner. Ningbo also has released all environmental complaints filed in sufficient detail and included the status of each complaint. In response to citizen concerns about emissions from area factories, the environmental protection bureau in Ningbo's Zhenhai district took various steps to improve environmental transparency, including releasing information on emissions of five pollutants not currently covered by any standards, establishing a public information display that lists monthly emissions data alongside the applicable standards, working with enterprises to improve monitoring, and holding quarterly briefings to respond to questions from area residents and news media. Zhenhai's environmental officials noted that although these efforts increased their level of work, they helped to resolve concerns from citizens at an early stage so as to avoid conflicts and increased the level of trust between citizens and government.[17]

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[15] *Id.*, Art. 26.

[16] For more information about this effort, see http://www.greenlaw.org.cn/enblog/?p=2027.

[17] "Zhenhai District in Ningbo City Fully Discloses Environmental Information: Small Pressure [on Officials] Resolves Large Issues" (宁波市镇海区全面公开环境信息: 小压力化解大问题) *China Environmental News*, March 24, 2010, available at: www.cenews.com.cn/xwzx/zhxw/ybyw/201003/t20100323_632305.html.

- **Weihai**, a city in Shandong province, captures real-time monitoring data for key enterprises and water treatment plants across the city, and discloses a monitoring database that provides daily reports with detailed hourly data. According to our research, the frequency of this reporting is the highest in the country.
- **Wuhan**, a city located in Hubei province in central China, has created a website that provides the public with searchable emissions data for a given day or time period. On this website the public can choose a point source, and then select the pollutant to be tracked for a selected time period. In addition, the website also provides real-time video of the waste treatment facilities, discharge pipes, or emission stacks at certain sites.
- **Fuzhou**, a city in Fujian province in southeastern China, has set up an online "Call Center" database that allows the public to make various information requests through its website or via email, text message, telephone, fax, letters to the Mayor and tape recordings. The website will post the public inquiry and the results will be handled by the corresponding department. The public is also able to search the information by time, type of appeal, and processing status.
- **Hefei**, a city in Anhui province, in response to our request for information, publicized on its website a list of enterprises in violation of rules and standards during the month of September 2008 and provided related links so that the list could be accessed by the public.

b. Responsiveness to Information Requests

Members of the public have begun to make information requests pursuant to the *Environmental Information Measures*. For instance, a Shanghai lawyer sought government information regarding the severely polluted Huai River. The lawyer contacted the provincial environmental protection bureaus in both Henan and Anhui provinces to retrieve the names of the enterprises that were polluting the river. In the end, the lawyer succeeded in obtaining the information he sought, and he is now considering initiating litigation against those factories that are consistently in violation of environmental regulations.

The yearly reports that environmental authorities are required to prepare regarding their open government information work for the previous year provides some idea of the number and type of information requests received. At the central level, the MEP received 72 requests for information in 2009, mainly concerning EIA, environmental monitoring data, and environmental laws and regulations. Seventy-one of these requests were timely answered, while the remaining one request was answered after an extension of time. The requested government information was not disclosed for four of the requests.[18] In the city of Guangzhou in Guangdong province, the environmental protection bureau received 17 requests for information in 2009, relating to issues such as EIA, environmental monitoring data, and environmental administrative penalties.[19]

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[18] Ministry of Environmental Protection, 2009 Report on Open Government Information Work (环境保护部政府信息公开工作 2009 年度报告), May 18, 2010, available at: www.mep.gov.cn/gkml/hbb/bgg/201003/t20100324_187222.htm.

[19] Guangzhou Environmental Protection Bureau, 2009 Report on Open Government Information, January 2010, available at: www.gzepb.gov.cn/root43/zfxxgkrb/201002/t20100201_4734.htm.

Obstacles to Greater Compliance

The responsiveness of environmental protection bureaus to public information requests and their proactive disclosure of environmental information have varied widely across the country. There are currently three key obstacles to widespread compliance with the environmental information disclosure measures: (1) a lack of capacity, (2) vagueness of the regulations, and (3) insufficient accountability for government officials.

- **Lack of Capacity.** Many lower level officials do not understand or are still unaware of the regulations and are ill-equipped to collect the information needed to execute such requests. We expect to see continued progress as time goes on and as environmental officials obtain more experience and training in dealing with information requests. There is a significant opportunity to improve information disclosure through enhanced training and education, and international cooperation can help facilitate such capacity building.
- **Vagueness.** Another primary obstacle to consistent implementation of the regulations is a lack of clarity regarding the scope of disclosure as well as the permissible exceptions, such as commercial secrets, personal privacy and state secrets. In November 2009, the Supreme People's Court ("SPC") issued a draft judicial interpretation to clarify the regulations and solicited public comments on this interpretation.[20] A variety of stakeholders (including NRDC) have provided suggestions on how to clarify these regulations, and we are hopeful that the SPC interpretation when it is ultimately released will provide a boost to information disclosure. MEP can also play an important role in clarifying the scope of information disclosure by developing implementation guidelines for the *Environmental Information Measures* as soon as possible.
- **Accountability.** Another obstacle is that local officials are not consistently held accountable for failing to comply with their disclosure obligations. However, there have been a handful of cases in which refusals to disclose were successfully appealed. In addition, there are efforts to hold officials accountable for their performance in meeting their information disclosure responsibilities. For example, according to a recent news report, after administrative departments in Shijiazhuang city in Hebei province were found to be violating their responsibility to disclose information, city leaders announced that performance in meeting information disclosure requirements would be included in the performance assessments of city officials.[21] The expansion of such practices around the country will be critical to the implementation of the open information regulations.

Although there is still much work to be done to improve environmental transparency, the progress made on environmental information disclosure in recent years is significant. China is still at the earliest stages of implementing its landmark *OGI Regulations* and *Environmental Information Measures*, but these have the potential to be truly transformative if implementation continues to move in the right direction.

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[20] Supreme People's Court, *Some Provisions on Hearing Administrative Cases related to Open Government Information (Draft for Solicitation of Opinions)* (关于审理政府信息公开行政案件若干问题的规定（征求意见稿）), November 2, 2009, available at www.chinacourt.org/wsdc/index.php?id=379436.

[21] "Shijiazhuang City Will Incorporate Open Government Information into Official Performance Assessments", Yanzhao Metropolis Daily, August 27, 2009, available at: news.sina.com.cn/c/2009-08-27/084918522478.shtml.

III. Conclusion: The Road Ahead

China is now at a crossroads. Given the pace and scale of change, China will constantly be faced with choices that have dramatic and fundamental significance for the future direction of the country. The area of environmental transparency is no different. The trend has been toward ever-greater openness in the environmental realm and there are many reasons to believe that this trend will continue; however, the choices made on-the-ground in China in the coming years on how to deal with the implementation challenges I have referenced today will mean the difference between a transparency system that truly helps China to achieve its environmental and climate change objectives or a system that exists mainly in the law books, but not in practice.

The main reason to believe that the trend towards greater transparency will continue is that transparency is viewed by many within China as an effective tool for solving serious environmental and energy challenges. Environmental authorities recognize that environmental transparency can bring in local communities and other members of the public as powerful allies in the enforcement of environmental laws and regulations. Greater transparency in China is enabling a wide range of efforts to strengthen environmental protection that are now getting off the ground. These include efforts by corporate purchasers to "green" their supply chains in China, initiatives to meet consumer demand for cleaner, healthier products, "green credit" efforts to limit loans to serious polluters, and of course the most basic of demands from local people for cleaner, more sustainable communities.

Transparency has also been utilized in the energy realm to promote implementation of China's climate change and energy efficiency efforts. China has, for example, disclosed the performance of provinces against their interim energy intensity targets in an effort to drive greater competition among different jurisdictions. Greater disclosure of energy and climate information has the potential to help China achieve its climate change and energy targets, just as it has begun to unleash a wide range of efforts that are helping China reduce conventional forms of pollution. For example, China has begun to develop carbon exchanges and other efforts to monetize greenhouse gas reduction efforts, but these nascent efforts will be hampered if the business community and the public do not believe they have access to quality information. Greater transparency also has the potential to spur competition among jurisdictions and companies within China to perform better than their peers in meeting government energy intensity targets.

The Implications for U.S.-China Cooperation

In practice, the United States can work with China on environmental and energy information disclosure in a number of areas of mutual interest:

- Exchanges on issues related to developing and refining the laws, rules and systems for environmental information disclosure will provide an invaluable boost to China as it builds its capacity and administrative structure to handle environmental information disclosure.

- The U.S. and China are already engaged in a number of international partnerships and collaborations on environmental protection, pollution reduction, and energy efficiency.

All of these can be made more effective by building in components related to the improvement of environmental and energy information and the development of capacity to generate, capture, and distribute such information.

- Given the increasing demand by U.S. consumers and businesses for information on the environmental impact of the products they purchase and the tremendous interdependence of the U.S. and China in international trade, there is significant space for international collaboration on approaches to "greening" corporate supply chains. This benefits consumers, gives Chinese environmental enforcement authorities the support of powerful business allies, and ultimately helps to bring about a cleaner environment in China.

- The U.S. and China are both exploring the best approaches to monitoring and inventorying their greenhouse gas emissions. Technical, non-political exchanges on approaches to improving the capacity and methodologies related to greenhouse gas emissions can serve to build trust and solve real technical challenges facing both countries in the battle to combat climate change.

Thank you and I look forward to answering any questions you may have.

Further information about environmental transparency in China is available at NRDC's China Environmental Law Project website, Greenlaw (www.greenlaw.org.cn/enblog).

PREPARED STATEMENT OF DAVID GORDON

APRIL 1, 2010

Thank you for the opportunity to provide testimony to you today on the subject of transparency in environmental protection and climate change in China.

Pacific Environment is a U.S.-based NGO that protects the living environment of the Pacific Rim by promoting grassroots activism, strengthening communities, and reforming international policies. Our successes over the past 20-plus years stem from a deep and abiding trust that local people, armed with the right tools and solid support, are the best hope for protecting the world's environment. As such, we support the development of grassroots organizations, prioritize community-based advocacy, and leverage international resources in service of our local partners. Together with these grassroots advocates, we have protected tens of millions of acres of wilderness, spearheaded campaigns to protect endangered species, launched efforts to fight water pollution, reformed environmental and social standards for export credit agencies, and publicized critical environmental issues around the Pacific Rim. We support communities in China, Russia, Alaska and California to have a larger voice on the critical environmental issues that affect them, including climate change which increasingly impacts their livelihoods.

Pacific Environment has worked in China for over 15 years, assisting local environmental organizations to grow a mature environmental movement that is effective at working together with the Chinese government to address the most pressing environmental issues affecting China's development path.

The majority of our work in China focuses on strengthening Chinese non-governmental organizations to address water pollution issues. The lessons we learned through these efforts have relevance to questions of transparency in environmental protection, and can also help us understand how to promote transparency in dealing with climate change issues in China.

One of China's most critical environmental problems is water pollution; In 2005, top Chinese governmental officials indicated that over 360 million rural Chinese lack access to clean drinking water; over 70 percent of lakes and rivers are polluted; and major pollution incidents happen on a near daily basis.

Water pollution not only strains the environment, but also severely impacts public health. Today, China has an alarmingly growing cancer rate, with hundreds of "cancer villages" sprouting up near polluted water sources. The World Health Organization recently estimated that nearly 100,000 people die annually from water pollution-related illnesses in China, and 75 percent of disease comes from water quality issues.

China's water pollution crisis made international headlines following a 2005 petro-chemical plant explosion which released 100 tons of benzene into the Songhua River, a major waterway in Heilongjiang Province and a water source for millions of people. Such spills are not rare in China, yet the accident and ensuing cover-up opened a new space for encouraging the Chinese government to change its approach to water pollution, specifically as it relates to public access to information, enforcement of pollution laws and accountability, and international information-sharing and cooperation.

Over the past several years, there has been a noticeable shift in behavior by the Chinese government as it pertains to environmental issues, particularly water pollution. Pan Yue, a Vice Minister of China's Ministry of Environmental Protection (MEP), openly acknowledged that "the environmental crisis, particularly for water, is coming to China earlier than expected."

Pacific Environment believes that improvements will only be successful and sustainable if local, regional and national environmental groups are able to establish themselves as stronger watchdogs of, and advocates to, the government and private industries.

Working with many partner environmental groups across China, Pacific Environment is reaching out to local communities concerned about water pollution and helping them to conduct legal, public relations, and advocacy campaigns to reduce the impacts of water pollution on public health and the local environment. Through these actions, our partners are playing a pivotal role to ensure clean water for China's future.

Just as in the United States, China's decades of economic and industrial growth have brought major environmental challenges, including pollution, deforestation, biodiversity loss, and desertification. In response to these ecological challenges, a public environmental movement has emerged and grown.

China's water crisis includes overall ecosystem degeneration and a lack of public access to clean drinking water. Despite strong national policies to address water pollution, lax implementation of these laws inhibits local progress. These policies can become successful and sustainable, however, especially if NGOs can establish themselves as resources and experts that assist regional environmental protection bureaus to monitor and report on water pollution. The time is especially ripe for this type of public involvement in the wake of the implementation of China's environmental information disclosure law—a powerful tool for environmental groups to assist their communities in accessing information on polluting enterprises and to ensure public participation in environmental decision making.

Using China's new Public Disclosure of Environmental Information law, groups can request pollution information from local enterprises and governments and achieve water quality improvements at the local level by using this information to ensure that polluters are accountable to the law and to local communities. This strategy helps communities to understand issues related to water pollution and engages them in local environmental issues. It also ensures that those working for pollution reductions are involved directly in local ecological and public health improvements and that they are accountable to local communities. Over time, increased public participation in pollution monitoring will result in governmental action to enforce pollution control and improve water quality.

The Public Disclosure of Environmental Information Law is, in many ways, similar to the U.S. Freedom of Information Act. Just like the Freedom of Information Act, it will take time for Chinese government agencies to learn how to fully implement the law. Last year, when a partner organization in China requested information from a local environmental protection bureau, they were told that the time was not right to provide information due to the economic crisis. However our partner used the opportunity to build closer relations with the local government agency and since has been invited by local government officials to participate in pollution monitoring.

In the United States, years of precedent-setting litigation was required to ensure quality implementation of the Freedom of Information Act. While our partners hope that litigation is not required within China, they recognize that it will take time and patience to encourage the release of environmentally relevant information to the public. We are already seeing progress. Public transparency of environmental information within China is a critical step toward ensuring public trust in government information.

In one important model, the Institute of Public and Environmental Affairs (IPE) in China has made great progress using open government data to publicize pollution sources through a National Water Pollution Map. IPE then works collaboratively with business, government, and local NGO representatives to encourage third-party audits of polluting factories that can make recommendations for pollution reduction.

This model demonstrates how Chinese civil society can use publicly available information produced by the government to achieve environmental progress. IPE has now expanded its model to tackle air pollution, with evident applications within a climate change context.

How can the lessons learned from civil society's efforts against water pollution in China be applied to climate change issues? We believe that public transparency of environmental information is a critical underlying component to appropriate and effective measurement, reporting, and verification of climate change mitigation efforts.

Just like the United States, China has the potential to either make the climate crisis more severe, or lead the world in finding solutions. As in the United States, climate change is impacting the people of China with increasingly erratic and severe weather patterns that create environmental and economic damage and reduce the amount of arable land. A significant portion of China's greenhouse gas emissions comes from major industrial development, which in turn pollutes waterways, dirties the air, and ruins ecosystems; these externalities are ultimately being paid by Chinese citizens.

China's central government has made encouraging statements about reducing greenhouse gas emissions. The National Development and Reform Commission stated that China aims to "integrate energy conservation, environmental protection, and control of greenhouse gas emissions into regional economic development." Despite such central government commitments, valid concerns remain about what actions are being taken at the local level to address climate change. To be effective, measures to reduce greenhouse gas emissions must be implemented both centrally and provincially.

Pacific Environment believes that a critical part of working with China on climate change issues is empowering China's civil society and environmental organizations. With the right information and tools, communities throughout China can advocate for better energy choices. Civil society organizations can encourage provincial and industrial leaders to reduce greenhouse gas and other pollutant emissions.

In the United States, actions at the local and state levels have been remarkably successful in developing greenhouse gas emissions reduction strategies. Indeed, the shift toward local and state-level strategies represented an enormous break-through in the United States from shifting awareness to action on climate change issues. In China, provincial-level strategies also have the potential to build local action around as-yet unimplemented central government policies.

During the Copenhagen negotiations in December 2009, concerns were raised about China's willingness to accept measurement, reporting, and verification (MRV) requirements suggested by developed countries, including the United States. These concerns were raised out of a fundamental lack of trust in official government statistics and action in China. These concerns are real and must be addressed. However, China also raised valid concerns about how international MRV requirements can become an intrusion on its own sovereign rights.

A different approach to MRV is to strengthen multiple systems within China that will verify data and information. A critical component to a healthy MRV system anywhere in the world is a healthy and independent civil society sector. A healthy and independent civil society sector can help ensure that the government provides and acts upon accurate information. A healthy and independent civil society sector within China is compatible with China's sovereign interests; indeed, the organizations with which we partner are very interested in collaborating with all levels of government to find environmental solutions.

Historically, both the United States and China have lacked credibility in international climate change negotiations. However, it is clear that we can make the most progress in mitigating climate change if both the United States and China lead by example within their own countries to set a high standard that other countries can meet. This can help build each country's international credibility and together we can work to save our planet from the climate crisis.

As we have heard today, China is emerging as a leader in clean energy production. China also needs to voluntarily ramp up its coal reduction measures and address short-lived climate forcers, if it is to both provide significant health and economic benefits to its population and combat climate change.

The key to mitigating the threat of climate change in China and around the world is to help China develop an independent civil society that will support the government in MRV, ensure that national environmental regulations are implemented locally, and improve the availability, credibility, and transparency of environmental information overall.

Thank you for the opportunity to address you on the important subject of transparency in environmental protection and climate change in China.

PREPARED STATEMENT OF DEBORAH SELIGSOHN

APRIL 1, 2010

Thank you for the opportunity to contribute to the deliberations of this Commission. My name is Deborah Seligsohn, and I am Senior Advisor to the China Climate and Energy Program at the World Resources Institute. The World Resources Institute is a non-profit, non-partisan environmental think tank that goes beyond research to provide practical solutions to the world's most urgent environment and development challenges. We work in partnership with scientists, businesses, governments, and non-governmental organizations in more than 70 countries to provide information, tools and analysis to address problems like climate change, the degradation of ecosystems and their capacity to provide for human well-being.

I am delighted to speak with you today about China's systems for measuring, monitoring, and reporting energy and climate data, how these systems have been implemented and the opportunities for continuing to build capacity and improve these systems.

Measurement and reporting systems provide information for a number of different purposes. It is important to distinguish the functions we expect the system to provide—both in the development of the system itself, and in the evaluation of the system's effectiveness and utility. Energy and climate data can be collected or disseminated for three purposes:

1. Measuring overall progress through national-level data. This is the essential level for evaluating any country's commitments to any international climate regime. It is the level at which we compare country commitments. It is also essential for the country's own purposes in considering energy and climate policy in the context ofoverall macro-economic policy.
2. Measuring the impact of specific programs or players—in other words the data needed for energy and climate policymakers to track progress toward specific policy goals. This includes measuring at the sub-national level since China allocates provincial and local quotas. It would include sectoral or company-level reporting to enforcement bodies (to the extent that enforcement is at those levels). Finally, it includes programmatic data—metrics collected to assess the progress of specific energy or climate programs.
3. Providing data that civil society can access (public transparency). The transparency function can occur at all levels from national to the local.

It is important to distinguish these three functions and the types of data needed to meet each goal, as well as the separate history of each type of data collection and dissemination in the international sphere.

1. NATIONAL LEVEL DATA

In contrast to traditional environmental pollutants, where in the developed world there is now a 40-year history of collection and dissemination of all three types of data listed above, in the energy area until very recently data collection has focused mainly on the first area—the development of national-level, aggregated data sets. China's history with collecting and producing energy data for an international as well as domestic audience is much lengthier than its focus on environmental issues. If one goes to the website of the National Bureau of Statistics (NBS) of China, one can find production data from 1952 and consumption data, starting in 1957. Over the years this data becomes substantially more sophisticated. Energy data in this regard is collected as part of overall national accounts data collection, an area that China has focused on during the past 30 years.

National-level energy data is relatively easy to collect—there are relatively few major suppliers and some very large demand centers—and production (from the major energy suppliers, coal and oil companies) and consumption data (power plants, major industry, transportation information) can be cross-checked. The consensus of scholars we have interviewed as part of our ChinaFAQs program both in the United States and China is that (1) it is unlikely that energy data will depart from reality for long before the gap between supply and demand numbers, which are collected through separate networks, becomes very clear and requires a correction, and (2) the best way to track Chinese data is to observe the trend rather than focus on an specific short-term result. The most recent data may well need to be corrected in the normal cycle (as is true in other countries, as well), and especially in China there are some rapid fluctuations (such as the precipitous rate at which electricity demand dropped immediately after the 2007 Financial Crisis) that really need more time and context to analyze.

Both of these points are illustrated in the most commonly raised concern about the quality of China's national energy data, a period between 1998 and 2001, where

the Chinese National Bureau of Statistics (NBS) substantially underreported Chinese energy data, primarily because of an underreporting of coal production and use. By 2002 data collection had improved sufficiently so that what had previously looked like a trend toward rapidly improving energy intensity instead looked like a peculiar dip followed by a rapid rise in consumption. NBS recognized the aberration, and published a correction, along with a revision to national accounts data in 2005. This incident shows the need to look at long-term trends and not rely on single year data, to recognize the ability of the Chinese system to self-correct, and the formal systems enabling such self-corrections to occur predictably. In 2005, NBS initiated a new program of 5-year economic censuses, specifically to assess and revise economic data.

It is worth noting that since the early 2000s there has not been a similar period of apparent drift in Chinese energy statistics and the variability in energy intensity improvements have been much more easily explained in terms of current policy or global economic conditions than was the case in the late 1990s. Moreover, the last period when Chinese energy and indeed GDP statistics were questioned by international analysts—directly after the global financial crisis in 2007—it turned out that China's statistics reflected the unusual way the crisis played out in China, with a rapid drop in heavy industrial demand that led to a short-term and dramatic drop in electricity generation, followed by a much more rapid and robust overall GDP rebound than in any other country.

These statistics can thus act as a reasonably reliable guide to national energy accounts and conditions, ones that can be used both by the Chinese national government in making policy decisions and by other countries looking to see how China is implementing its energy efficiency and renewable energy programs.

There is no doubt data could be improved. While NBS has become much more willing to revise its data sets—a practice standard in other countries, as well, (for example, US GDP figures have a cycle with three revisions)—Chinese revisions of recent-year data do not always include revisions of prior-year data, making time series analysis difficult.

In contrast to energy data, China has substantially less experience collecting and reporting greenhouse gas emissions data. China produced one Greenhouse Gas Inventory of its 1994 emissions, which it submitted in its First National Communication to the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat in 2004. This work was done with assistance from the U.S. government during the 1990s. China is currently in the process of preparing its Second National Communication, including a new inventory. During President Obama's visit to Beijing in October 2009, the United States Environmental Protection Agency (EPA) signed a Memorandum of Cooperation (MOC) with the Chinese National Development and Reform Commission (NDRC) for capacity building in preparing this inventory. Our understanding of the capacity building needs as perceived by both sides is that it is not in the area of data collection per se, but rather in data analysis, and in creating a replicable and updatable system, so that China can update and submit an inventory every two years as provided by the Copenhagen Accord.

One of the issues with national inventories not just in China, but in most developing countries, is that the first versions, conducted with project support from organizations like the Global Environmental Facility (GEF), were conducted as one-off exercises, rather than conducted with systems creation in mind.[1] As a result few developing countries that conducted these first inventories in the 1990s found them easy to repeat. Needless to say, there are other issues involved, including negotiating issues about who pays for inventories, but as a practical matter the first inventory exercises did not leave in place easily replicable systems.

Since China has not conducted regular inventories since 1994, its own GHG emissions figures that it uses for internal policy purposes are based on estimates. Since China's current national policy as reported to the Copenhagen Accord relates only to energ-yrelated CO_2 emissions, it can make reasonably good estimates based on its energy data. From interviews with Chinese energy researchers, we understand that the Chinese government has a complete set of local emissions factors (the amount of CO_2 emitted per unit energy, differentiated by type of energy and type of technology used to consume it) with which they use internally to make these estimates.[2] Its next inventory, currently underway, should enable it to assess the accuracy of overall GHG emissions estimates. It is not clear whether China will be publishing a new inventory in 2010 or 2011, but in the Copenhagen Accord it agreed to every two years.

2. TRACKING SUB-NATIONAL GOVERNMENTS, COMPANIES AND PROGRAMS

China can assess overall progress toward meeting its energy intensity, renewable energy and carbon intensity goals by looking at national-level data; however, to manage targets and influence the behavior of sub-national governments and firms, the Chinese government requires more detailed data. Over the last several years, the Chinese government has developed its energy information systems to track this data in a more detailed manner than was previously the case. Changes include more frequent reporting—up to twice a year for China's largest companies—as well as detailed auditing procedures.

China's programs for promoting energy intensity and the greater use of renewable energy are complex and to some extent overlap. For example, a program to improve industrial boiler efficiency will assist some companies in the 1000 Enterprise Program, but might also assist smaller companies outside the scope of that program, and both programs serve the overall energy intensity goal. At the level of the national targets these do not cause double-counting, but tracking individual programs is more complex. Table 1 below details some of the major programs that contribute to controlling carbon dioxide emissions. There are dozens of other programs. Some of the successful national programs have been replicated at the provincial level, and there are also separate provincially-initiated programs, making a comprehensive list almost impossible to compile.[3]

TABLE 1: MAJOR CLIMATE-RELATED PROGRAMS AND ASSESSMENT MECHANISMS

NAMA	Scope	Metric	Reporting Mechanism	Assessment Mechanism	Time Frame
Five-Year Plan	National comprehensive planning document	Qualitative evaluation of policy implementation	Annual work report by Premier and by each Ministry	Monitored and assessed by standing committee of National People's Congress	New targets set every five years
Energy Intensity	National, with targets given to each province, locality and stateowned enterprise	Energy used (MTCE/ Unit GDP)	Calculated by NBS and published in a semi-annual statistics bulletin	Collected from multiple sources to ensure cross-checking	Five year goal. Many data are tabulated monthly. Provinces are required to report semi-annually
Renewable Energy	National, with targets given to provinces and power generation companies	Renewable energy portfolio standard (specified percentage of renewable in total output)	Energy Bureau aggregates data from NBS, various Ministries and industrial associations	Internal data quality assurance system within various Ministries and cross-checking	Goals to year 2010 and 2020, calculated annually

TABLE 1: MAJOR CLIMATE-RELATED PROGRAMS AND ASSESSMENT MECHANISMS—CONTINUED

NAMA	Scope	Metric	Reporting Mechanism	Assessment Mechanism	Time Frame
The Thousand Enterprise Program	National, targeted at 1,000 largest enterprises	Energy Intensity per unit output	Enterprise to local DRC to NDRC	NDRC inspection teams	5-year program with annual targets; progress reports twice a year
Individual Industrial Sector Targets	Set by Sector Energy	Intensity per unit physical output	Industrial association to NBS/ NDRC	Aggregated data from individual companies	Annual and 5-year reporting
Program to Close Small Enterprises	National, specified closures in electricity and other sectors	GW capacity for power, tons of production capacity in industry	Provincial government and related enterprises reporting to national NDRC	NDRC conducts onsite verification	5-year targets, annual progress reports

Much of the effort in the 11th Five Year Plan (2006-2010) was focused on the large programs that would yield the energy intensity improvements needed to meet the national targets, in particular the 1000 Enterprise Program, whose enterprises use one-third of China's primary energy, and the closure of small and inefficient enterprises. From our own work with local researchers and an upcoming assessment of the 11th Five Year Plan by the China Energy Group at Lawrence Berkeley National Laboratory, it is clear that the data from these programs is significantly better than that related to other programs. For these programs not only can specific program-related targets, such as setting up energy plans, or closing specific units be tracked, but they can also be related to a specific amount of energy savings. While for other programs, the specific program elements might be tracked (for example, number of compact fluorescent light bulbs distributed), they might not be linked back to the actual amount of energy saved. The challenge is that programs were established without necessarily being linked to the metrics collection needed to assess program outcomes in terms of energy use. The programs that have the best metrics used fairly labor-intensive evaluation techniques, in particular regular inspections. Table 2 below provides the evaluation metric used by inspectors to firms in the 1000 Enterprise Program and shows the level of detail national officials could focus on for such large energy users. The State Statistical Bureau is focused on improving statistical approaches, which would be beneficial.

TABLE 2: EVALUATION SCORE SHEET FOR 1000 ENTERPRISE PROGRAM

Energy conservation target (40 points maximum)	100 percent of target achieved: 40 points; 90 percent achieved: 35; 80 percent achieved: 30; 70 percent achieved: 25; 60 percent achieved: 20; 50 percent achieved: 0
Energy conservation measures (60 points maximum)	Energy conservation leading group: 3 points Energy conservation management department: 2 Decomposition of target to unit and person 3 Assessment of energy conservation target 3 Reward and punishment system 4 Energy efficiency performance in 1000 enterprises: 10 for top 10 percent and 5 for top 50 percent Energy conservation R&D fund 4 Annual energy conservation plan 4 Closure of backward equipment 7 Retirement of outdated equipment Implementation of local regulation 2 Implementation of energy consumption norm 4 Norm management for energy consuming equipments 2 Implementation of energy conservation design 2 Energy audit and monitoring system 2 Energy statistics manger and account 3 Energy monitoring appliance 3 Energy conservation training 2

Further developing these program evaluation approaches might help China in addressing its future carbon mitigation targets and programs. As it moves from energy to carbon targets, there will be a need for integrated carbon accounting at the enterprise and possibly at the municipal and provincial level. The World Resources Institute has been working with Chinese partners on enterprise-level greenhouse gas accounting for four years. We have focused mainly in heavy industries, and our standards have been adapted for the cement and petroleum and petrochemicals sectors and are now being adapted for the power sector. These types of tools will enable Chinese enterprises and the Chinese government to better track their greenhouse gas emissions.

It is also likely that the Chinese government will assign carbon dioxide intensity targets to provincial and local governments. The current energy intensity target is distributed to each of the provinces. The challenge for provinces is tracking all the economic activity within their boundaries, a much more difficult task in all countries than tracking national data, since provinces do not have enforced borders, control of a currency or customs agents. Current provincial energy data actually derives in part from bottom-up data from localities and local enterprises, but also top-down data from the central government, which receives data directly from many national-level companies.

This complexity will continue to exist with the move to carbon intensity. Calculating CO_2 emissions at the sub-national level is more difficult that accounting at either the national or the firm level, because the "boundaries" of the organization are not so clear. A program like the European Union Emissions Trading System (EU ETS), for example, accounts at the national and the firm level. Because of the need in China, a number of international groups are working in this area. We at WRI are currently examining the existing tools available internationally, including the French Ministry of Environment's Bilan Carbone (Carbon Balance), and a tool produced by Local Governments for Sustainability (or ICLEI) to provide advise on how to best address this need.

NBS is actively developing its carbon dioxide reporting requirements for China. These are not yet public, but from presentations at various conferences it seems clear that they are carefully studying the European system as well as the EPA's GHG reporting rules. One area in which they seem to be looking closely at the EPA's rules is in monitoring CO_2 from coal-fired power plants. The EU system is an estimation system, based on energy use and emissions factors. EPA requires continuous emissions monitoring on coal-fired power plants, because of difficulties in measuring coal input as well as variation in the coal itself. While we do not yet know what China will choose to do, we know that researchers have been considering

the costs and complexity of adopting the U.S. approach. In the last two years China has required continuous emissions monitoring for SO_2 from coal-fired power plants, and now a few provinces have introduced monitoring for NO_χ. The equipment that monitors NO_χ also measures CO_2, but as yet it is limited to a few provinces. US EPA has provided some assistance to Chinese localities in areas such as calibrating SO_2 monitors. If China were to rapidly deploy NO_χ/CO_2monitors, more technical assistance of this sort might help the program significantly.

What types of metrics China will need for domestic implementation, as opposed to overall national accounts described above, in the future will be determined in part by the types of mechanisms it chooses to use. In our current research with Tsinghua University we are looking at the different requirements needed if China were to choose at some point to use a cap and trade system, a carbon tax or additional emissions standards, in contrast or in addition to the current emphasis on quotas. While both cap and trade and carbon tax require regular monitoring and reporting, a carbon tax, for example, offers the choice of imposing it upstream or downstream in the energy production chain. These two would both require more facility-level verification—at whatever level the allotments or tax is being imposed. In contrast, standards will require separate systems for different types of standards verification, a seemingly more complex option, but one where China already has significant experience.

3. PROVIDING DATA TO THE PUBLIC (TRANSPARENCY)

Traditionally energy data is treated quite differently from environmental data. Energy agencies like the U.S. Energy Information Administration aggregate data, and the public are unable to see specific firm-level or facility-level information. Firms have traditionally viewed this data as confidential business information, which they give to governments, but governments then protect. Aggregated data is widely available and used, and in the energy area this aggregation was never considered a barrier to transparency.

In recent years there has been a movement for transparency in climate data, which WRI supports. Transparency is a principle of our Greenhouse Gas Protocol, which we began to develop with the World Business Council on Sustainable Development in 1998.[4] The earliest public mandate to provide facility-level climate data is within the European Emissions Trading, a system only established in the past decade.[5] The U.S. EPA GHG reporting rule went into effect only in 2009. With an EPA requirement, this information is now public, but as you can see, this is very new.

Private groups have also promoted the idea of carbon transparency. In particular, the Carbon Disclosure Project (CDP) surveys companies listed in 29 stock indices around the world. 2009 marked its seventh annual report.[6] Participation rates range from 8 percent in Central and Eastern Europe to 95 percent among the UK's FTSE 100.[7] The China 100[8] reported 10 firms or 10 percent reporting in 2009, double the number in 2008. While China's number was quite low, it reflected a broader trend, with Russia and India also both below 20 percent; even Japan had only a 37 percent reporting rate. The idea of GHG transparency in the Asian region is clearly just beginning.

The general argument for making pollution data available is so the public can know the risks they are exposed to. Since climate change has global impacts, global totals are the best indicator of the public's risks, and national-level data the best indicator of how each country is contributing to mitigating the risk. However, CDP's argument is that investors need to know a company's climate change risk (including both risks from dependence on GHG-generating energy and processes and from impacts) as part of the transparent information needed for a healthy market.

Transparency can also facilitate better analysis and can actually help promote innovation in GHG mitigation. As noted above China has an uneven record with program assessment. Freely available data sets that enabled academics and others to develop new approaches to assessing and evaluating data would assist national and local level policymakers. At present much of the information needed for companies to make independent assessments, such as access to the actual emissions factors the government uses, are also difficult to access.

Greater access to disaggregated data could thus facilitate investor and others' evaluations of specific companies, innovation in the use of the data and tools, and the companies' own efforts to manage their GHG emissions. This issue is not directly related to national-level accounting for inventory purposes, where national-level energy data can be used to calculate energy-related CO_2 emissions, but rather is related to program assessment and once sub-national targets are assigned to target enforcement.

In summary, there is a difference between calculating energy and emissions data at the national level to track how a country is doing overall and the country's own needs domestically for implementing, assessing and enforcing specific domestic programs and mandates.

China has a long history of national-level energy accounting, and the reliability of this data has increased significantly, especially in recent years, when new systems were put in place to implement the energy intensity target under the 11th Five Year Plan (2006–2010). GHG Emissions accounting is relatively newer, going back to 1994, but China is actively involved in improving its systems in this regard, and because its international commitments are for energy-related CO_2 emissions, it will be able to fully use the dataimprovements in its energy information systems to support its GHG data collection and analysis.

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[1] Taryn Fransen, "Working Paper: Enhancing Today's MRV Framework to Meet Tomorrow's Needs: The Role of National Communications and Inventories," The World Resources Institute, June 2009.

[2] From interviews with the Energy Research Institute we understand these emissions factors to be more technology specific and less aggregated than the type that would generally be released to assist companies in making their own accounting.

[3] This information and the table are drawn from, Fei Teng, et al "Working Paper: Mitigation Actions in China: Measurement, Reporting and Verification," the World Resources Institute, June 2009.

[4] See www.ghgprotocol.org for details on the program.

[5] Information on the EU ETS is available on the web at http://ec.europa.eu/environment/climat/emission/index—en.htm

[6] Carbon Disclosure Project 2009: Global 500 Report. www.cdproject.net

[7] The CEP is a voluntary report and the level of participation varies with many companies submitting full GDP accounting, while others provide only much more general information.

[8] This appears to be CDP's own selection of 100 top companies. It is not one of the standard stock indices, in contrast to the others in CDP's compilation.