Comments on the Atmospheric Pollution Prevention and Control Law (amendment draft)

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We appreciate the opportunity to review the amendment draft of the Atmospheric Pollution Prevention and Control Law of the People's Republic of China (hereinafter, "air pollution law") and are honored to be able to consult with you as you consider approaches to improving air pollution regulation and management in China.

This memorandum focuses on top priorities for the air pollution law. Our comments are based on the positive and negative lessons from air pollution control in the United States and how we think those lessons best apply to the conditions in China. Our goal is to help China avoid the mistakes of the United States and make full use of China's unique characteristics to move more quickly and efficiently to a healthy and sustainable environment.

All of our comments are based upon the presentations and discussions from the workshop held by the Ministry of Environmental Protection (MEP) in Beijing on November 3, 2008. This policy recommendation is divided into three parts: an executive summary, a set of comprehensive comments, and an appendix of itemized, suggested statutory language for important articles in the amended air pollution law.

EXECUTIVE SUMMARY

Based on the U.S. experience and our understanding of China's air pollution control system from the workshop, we believe the revision of the air pollution law should emphasize the following concepts and principles:

First, fully integrate energy and environmental policy making and management, and improve and develop present practices through legislation. The goals of energy development and protection of the environment are closely related, but environmental protection is currently only considered at the project level. A mechanism should be established to allow environmental protection bodies to also participate in the establishment and implementation of relevant energy strategies, policies and measures. China has already accumulated rich experience in this regard, including through utilization of generation performance standards in the electricity industry,[4] environmental dispatch, and so forth. This trend should be fully promoted and institutionalized.

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[4] Measured on a kilogram per kilowatt-hour basis (or electricity output-basis rather than a heat-input basis).

Second, restructure the relationship between the central and local governments with respect to their management of environmental quality, and strengthen central government regulatory powers. The revision of the air pollution law provides a good opportunity to strengthen the implementation of national environmental regulatory policies at the local level. The new air pollution law should give the State Council or the department responsible for environmental protection under the State Council greater regulatory powers over local air pollution control, through planning, policies, and other means, such as evaluation of local environmental achievements, and financial guidance and support, in order to achieve effective regulation.

Third, fully integrate the various regulatory mechanisms and establish an integrated, comprehensive air quality management system whose components work together in a coordinated manner. The revised air pollution law should clarify the relationship between air quality standards, air pollutant discharge standards, the total emissions control system, permits, monitoring and reporting, and provincial and city-level air quality plans. Environmental quality should be the basis for and end goal of target setting, planning, and implementation processes, and all measures including local environmental quality management plans should be aimed at promoting effective management of air quality.

Fourth, establish a regional air quality management system and cooperate to solve regional air pollution problems. At present, serious regional air pollution problems in China have already appeared. China should establish a regional air pollution management pilot as soon as possible, cooperate to solve regional air pollution problems, and continue to explore paths for stronger central supervision of local areas, and strengthen environmental pollution management.

Fifth, establish a long-term policy approach to multi-pollutant regulation in order to control pollution in the most economical way. Based on the experience of developed countries in controlling air pollutants, one can predict that as China's economy and living standard increase, the air pollutants regulated by developed countries will also come to be regulated by Chinese regulators. China should establish a long-term policy framework that from the beginning considers the current and future scope of pollutants to be controlled. This is a key strategy based on China's later development, and is also an important experience and lesson from the European and U.S. experience. As there are a few substances for which there are no set emissions limits (such as particulate matter, mercury and greenhouse gases), placing these in a long-term policy framework allows those choosing pollutant control systems to consider technologies with the greatest synergistic results, therefore controlling pollution in the most economical and effective way.

Sixth, adopt Best Available Control Technology as the basis for emission standards in order to push enterprises to continually improve their environmental performance. We recommend that China adopt "best available control technology" (BACT) standards for all emissions sources. BACT standards set forth emissions limits and technology requirements for new and modified sources based on the best available control technology, taking cost into consideration. BACT standards should include indirect emissions (i.e., emissions associated with power supply) and the best production technology (as opposed to simply governing pollution control technology).

Seventh, improve the total emissions control system and make it an effective tool for achieving air quality standards. We recommend that the law clearly specify the goal of the total emissions control system is to attain compliance with China's air quality standards. The experience from the acid rain program in the U.S. and other similar programs makes clear that a cap on

industries is a way to focus regulatory control on those industries that cause the most serious air pollution. In addition, pollutant discharge allowances should be sold and not allocated for free. The revenues from selling allowances should be used to invest in cost-effective pollution control, energy efficiency and clean energy programs.

Eighth, strengthen transportation-related air pollution control through a "systematic approach" that coordinates fuel quality standards and automobile emissions standards. We recommend that the air pollution law expand the scope of regulated mobile sources (for example, to include non-road mobile sources), and authorize the department responsible for environmental protection under the State Council to set fuel quality standards and regulations for clean fuels. A systematic approach that coordinates automobile emissions standards and fuel quality standards will make it possible to more quickly, economically and effectively regulate mobile sources.

Ninth, deepen and strengthen open information and public participation, and ensure that the public can obtain environmental impact assessments and other important environmental information. International experience makes clear that information disclosure measures are an important supplement to traditional governance measures that can improve public understanding, support enforcement of environmental laws, and strengthen the "scientific" basis, transparency and reasonableness of policy making and management. For a number of years, China has had several national and local-level requirements to increase the transparency and disclosure of environmental information. At this point in time, release of environmental impact assessments is an important key to promoting professional and orderly participation of the general public and supervision of enterprises.

Tenth, strengthen the deterrent value of the air pollution law and strengthen implementation and enforcement of the air pollution law. The punishment measures of the present air pollution law lack the necessary deterrent value against environmental violations. We recommend that the deterrent force of the law be strengthened in three ways to improve enforcement of the law: protect the quality of environmental data by increasing the punishment for false reporting of environmental data or refusing to allow on-site inspections; gradually implement "fines on a per day basis" and other measures to make increased punishments more common, causing the cost of non-compliance to be greater than the cost of compliance; and encourage officials and the public to fully use the courts to exercise environmental supervision and enforcement rights.

We set forth the following concrete recommendations for improving the air pollution control system and operation:

1. Fully integrate energy and environmental policymaking and supervision.

Energy and environmental goals are closely linked. China has already accumulated rich experience on this front, including utilization of generation performance standards in the electric industry; environmental dispatch; differential pricing; and retirement of older, inefficient coal-fired plants smaller than 50MW. This practice needs to be fully promoted and institutionalized to cover the legislation and implementation of more policies and to realize the goal of controlling air pollution. Therefore, the first of our key recommendations is to fully integrate energy and environmental policies in the revision to the air pollution law and to further institutionalize existing practices in this regard.

The systems that need to be more fully integrated and institutionalized include: in cooperation with the electricity supervision system, improved emissions data quality, data sharing, and improved environmental protection enforcement; incentives for demand side management (DSM) to spur end-use energy efficiency; transmission planning and investment to encourage renewable energy development in remote areas; generation market rules and policies to promote integrated gas combined cycle (IGCC), polygeneration, and combined heat and power (CHP); and modification of the environmental dispatch rule if competitive generation markets take a bid-based approach to dispatch.

We also understand that under China's current circumstances, energy mix is one of the important causes of urban air pollution. Therefore, we strongly support the air pollution law revision's adoption of provisions to adjust the energy mix and increase the use of renewable energy sources to solve air pollution problems. We also note that Articles 3, 61, and 68 of the draft air pollution law address these concerns, which we strongly support.

We have the following recommendations for the revision to the air pollution law:

- Institutionalize coordination between the energy regulatory and environmental regulatory departments.
- The department responsible for environmental protection under the State Council should fully participate in the establishment of all energy laws, regulations and policies, to ensure the full consideration of environmental problems, e.g., EIAs for electric transmission plans and future clean energy development benefiting rural areas.
- Include specific energy efficiency standards in the EIA requirements for all new large-scale, high-energy-consuming industrial projects.
- Any cap-and-trade systems should be coordinated with energy policies and consider the need to control future GHG emissions.
- Emphasize the optimization of the energy mix and development of renewable sources of energy to address air pollution problems such as climate change.

[Recommended Provisions: Art. 2, 6, 15, 25, 36, 68[5]]

2. Ensure that the State Council or the department responsible for environmental protection under the State Council has strong authority to regulate local air pollution.

The U.S. experience has shown that the most effective air pollution programs have been those administered by the federal Environmental Protection Agency (EPA). Even where States play a significant role in establishing and implementing plans to address their air pollution problems, the federal government plays a crucial supervisory role. For example, in the U.S., States typically oversee permitting and enforcement at specific factories. However, States are subject to EPA oversight, and the EPA has independent enforcement authority to enforce against a factory even if a State does not enforce. In China, one can use similar measures to achieve these goals, such as evaluation and approval of local plans and guidance of local government finances, such as with the development of pilot projects, to support local environmental projects, and R&D into technology and energy sources.

[5] See recommendations # 1, 3, 9, 15, 21 and 32 in the Appendix-Statutory Language Chart.

We recommend that the new air pollution law should give the department responsible for environmental protection under the State Council the below policy tools to improve supervision of local government air quality management:

- Establish comprehensive plans for solving pollution problems that cross a single administrative district or region.
- Provinces and key air pollution control cities should establish detailed air quality management plans and report these to the department responsible for environmental protection under the State Council for approval. Alternatively, provincial-level plans should be reported to the department responsible for environmental protection under the State Council for approval, and plans for key air pollution cities can be reported under specific circumstances to the department responsible for environmental protection under the State Council for approval.
- Temporarily suspend approval of EIAs for new construction projects that will increase the discharge of atmospheric pollutants in areas that do not meet standards (Article 14 of the draft air pollution law).
- Review allocation of provincial, autonomous region, municipal and county-level TEC quotas, to ensure that allocations can solve local and regional air pollution problems.
- Assess and supervise provincial and municipal enforcement of air pollution prevention plans, including the permitting system, and monitoring and reporting systems; and, more importantly,
- Clarify the responsibility and evaluation system for officials in provincial and key air pollution control cities.

[Recommended Provisions: Art. 14, 15, 17, 23, 24, 42, 65a and 66[6]]

Regional air quality management systems are an important tool for promoting stronger implementation of environmental regulations at the local level. Developed urban areas such as the Beijing-Tianjin-Tangshan area, the Yangze River Delta and the Pearl River Delta regions have experienced rapid economic development and dramatically increased energy consumption. They already exhibit serious, complex regional air pollution problems. However, the present air pollution law only covers control of air pollution at the city-level, and does not focus on the regional air pollution problems in these urban "city groupings." The U.S. experience with regional air quality efforts provides a clear demonstration of the need for and potential effectiveness of regional approaches. Therefore, we strongly support Article 66 of the draft Air Pollution Law, which addresses control of regional air pollution, and recommend clarification of this system to:

- Authorize the department responsible for environmental protection under the State Council to designate air pollution control areas comprised of one or more provinces, cities or autonomous regions, to improve comprehensive scientific research and establish comprehensive regional air quality management plans.
- Provide that provinces, autonomous regions and directly-controlled municipalities in the same air quality management region should work together to solve regional pollution problems.

[6] See recommendations # 9, 10, 13, 14, 23, 30 and 31 in the Appendix-Statutory Language Chart.

- Authorize the department responsible for environmental protection under the State Council to establish coordinating bodies in areas implementing regional air pollution control.

[Recommended Provisions: Art. 15, 66[7]]

3. Perfect the present air pollution control system by creating an integrated and comprehensive air quality regulatory framework.

The draft air law should make clear that air pollution controls are aimed at regulating air quality, and deepen and clarify the role of existing measures such as: (1) atmospheric environmental quality standards; (2) pollution discharge standards; (3) total emissions control; (4) permitting; (5) monitoring and reporting; and (6) provincial and municipal implementation plans. These mechanisms are all crucial components of an integrated and comprehensive air regulatory framework, and the details of how these components work together are essential to effective air pollution regulation.

Based on our experience, scientific atmospheric environmental quality standards based on health and environmental criteria form the foundation of the air regulatory system. The other regulatory mechanisms are all geared toward achieving these quality standards. Technology-based pollution discharge standards for different industrial categories with costs taken into account will help to push towards achievement of these environmental quality standards, but will not necessarily lead to attainment of these standards. The total emissions control cap allocations on certain pollutants serve as an additional mechanism for gradually pushing down pollution emissions – particularly for the most polluting sectors or the largest polluting enterprises. The pollution discharge permit system mandates permits for enterprises that specify actual discharge requirements (over different time periods) and set forth allocation of any caps, as well as monitoring and reporting requirements. Provincial and municipal implementation plans promote higher-level strategic planning and aid in regional air management as well. The U.S. experience shows that all of these elements must work in concert if air pollution reduction goals are to be achieved.

3.1 Environmental quality standards: Set ambient air standards based on protection of public health and the environment, and update them as necessary to reflect the latest scientific knowledge.

The U.S. Clean Air Act provides that ambient air quality standards should be established for all important air pollutants, and health and environmental considerations should be used to determine the important air pollutants to be regulated and the acceptable pollutant levels. This provides a scientific basis for setting atmospheric environmental quality standards and lends the standards a greater legitimacy and rigor. Scientific research of environmental health and wider public participation can guide long-term environmental policymaking and the regulation of technologies used by polluting enterprises. Also, the law should clearly set forth the place and role of air quality standards in the air quality regulatory framework.

[7] See recommendations # 9 and 31 in the Appendix-Statutory Language Chart.

Therefore, we recommend that the air pollution law clarify that:

- Atmospheric environmental quality standards shall be based on current scientific understanding of the effects of air pollutants on human health and the environment and be set at levels necessary to protect human health and the environment. These standards should be updated as necessary to reflect the latest scientific research on pollutant effects on health and the environment.
- Atmospheric environmental quality standards are the starting point and end goal of air quality regulations.
- Public participation and comments are permitted in setting atmospheric environmental quality standards.

[Recommended Provisions: Art. 7, 10[8]]

3.2 Emission standards: Plan and establish a forward-looking emissions standard framework.

Adopt a long-term policy framework covering more pollutants. We recommend that a comprehensive, multi-pollutant regulatory approach be adopted when setting atmospheric environmental quality standards and pollutant discharge standards; setting total emissions control caps; issuing pollutant discharge permits; monitoring and reporting of emissions; and developing provincial and municipal implementation plans. The pollutants that should be addressed would include but would not be limited to SO_2, ozone, NO_X, particulate matter (PM), volatile organic compounds (VOCs), lead, mercury, CO_2 and other relevant greenhouse gas emissions.

Adopt output-based generation performance standards (GPS) for power plants. China has already started to make progress on this front by employing an output-based power plant emissions standard (based on a kilogram per kilowatt-hour basis rather than a heat-input basis) to set environmental regulations for the electricity industry. Output-based GPS standards for power plants (an approach that would also be appropriate for other industrial facilities) should be expanded and gradually transformed from a voluntary to a mandatory requirement. From a pollution prevention and total emissions perspective, this will promote cleaner, more efficient generation and investment choices.

Set emissions standards based on the emissions levels achievable using the best available control technology (BACT), especially for Beijing, Tianjin and other important cities, cities that do not meet air quality standards, or highly-polluting industries. For areas or industries using emissions standards based on BACT, emissions standards should be set based on the emissions levels achievable using the best available technology at the time, taking cost into consideration.[9] The concept of best available technology should not be limited to pollution control technology, but can also include production technology, using best available technology standards to encourage and promote the constant innovation and improvement of production and pollution control technologies.

[8] See recommendations # 4 and 6 in the Appendix-Statutory Language Chart.

[9] These standards should be expressed, not only as concentration standards, but also as output-based limits on permissible rates of emissions.

This basic policy should be extended to industrial processes and configuration. For example, new cement plants should be required to have the best available pollution control system to address direct emissions and maximum waste heat recovery and CHP to reduce indirect off-site emissions associated with power production to fuel the plant. The rapid growth in China's power and industrial sectors makes this approach especially important.

In addition, the above standards should apply equally to new, modified and existing facilities, in order to constantly dispose of backward technologies. The U.S. Clean Air Act has always had problems in this area, with old enterprises using outdated technologies for several decades, resulting in pollution levels remaining high. China has the opportunity to avoid the mistakes of the U.S. through revision of the air pollution law.

With regard to emissions standards, we recommend that the air pollution law:

- Fully consider a multi-pollutant, long-term pollution control strategy, allowing for the best decisions to be made by the government in making policy and by manufacturers in planning investments and choosing technologies.
- Give the department responsible for environmental protection under the State Council appropriate authority to set and use output-based generation performance standards, and change these standards from voluntary to mandatory standards.
- Encourage the use of standards based on best available control technology, especially in important cities, cities not meeting air quality standards, and highly-polluting industries.

[Recommended Provisions: Art. 2, 8, 23, 24, 38, 42, 68[10]]

3.3 Total emissions control: Improve the total emission control system to address atmospheric environmental quality standards.

Total Emissions Control (TEC) can be a powerful tool for helping to achieve atmospheric environmental quality standards only if it is clarified that:

(i) The goal of the TEC system is achieving atmospheric environmental quality standards;
(ii) TEC should be well coordinated with the other regulatory mechanisms set forth in the draft air pollution law, such as provincial and municipal pollution control plans, construction and operating permits, and pollution discharge standards; and
(iii) TEC should be coupled with clear monitoring and reporting requirements, and strong enforcement measures that deter cheating and non-compliance.

We note, however, that the TEC system is complex and evolving. There is no mechanism in the U.S. exactly like the TEC system. We suggest China explore ways to simplify administration of TEC**.** The TEC system in the draft law requires each level of government to allocate caps, which is a very labor-intensive task and will result in the details of the system varying from place to place. This may reflect the government's effort to consider the circumstances of each industry and even each enterprise when allocating TEC caps, but the resulting system is not transparent or predictable, which undermines the effectiveness of the

[10] See recommendations # 1, 5, 13, 14, 22, 23, and 32 in the Appendix-Statutory Language Chart.

system. We suggest the law give the department responsible for environmental protection under the State Council the flexibility to experiment with better, more efficient approaches to TEC, and to ensure the strict enforcement of other regulatory mechanisms, such as monitoring and reporting, emissions standards, and regional pollution plans. We also strongly recommend that transparency and public participation procedures be incorporated into the allocation process to ensure that it is scientific and objective, and to provide consultation to government departments and help the government to carry out its responsibility for allocating the caps.

As you move forward with TEC, certain lessons can be learned from the U.S. acid rain program (with its system of allocations and emissions trading) and the State Implementation Plan (SIPs) program (which sets forth pollution control planning requirements). The top lessons from the U.S. are as follows:

- A sectoral approach is important to focus regulatory efforts on the parts of the economy that are the most significant contributors to air pollution. The U.S. sulfur dioxide program was aimed first at the electric utilities industry, the leading source of air pollution in the U.S., and moreover, the first phase of implementation focused on the dirtiest, most polluting of those electric utilities. As China has done with its Top 1000 program to address energy consumption, air pollution regulation and the TEC program can be made more efficient by targeting the largest, dirtiest industries and enterprises first – such as coal-fired power plants; concrete, steel and chemical plants; and oil refineries. We believe this sort of prioritization of efforts for TEC is critical to the effectiveness of the system and appropriate for China's current stage of development and resources. Just as allocations under the U.S. acid rain program were administered by the EPA, we recommend that TEC allocations to different sectors be allocated by the department responsible for environmental protection under the State Council.
- The department responsible for environmental protection under the State Council should have strong oversight over TEC allocations. If China decides that provinces and lower levels of government have a role to play in allocation of allowances, the department responsible for environmental protection under the State Council should play a strong supervisory role in reviewing and advising on the allocations made to provincial and local governments and enterprises and work units in order to ensure that they are strict enough to achieve the overall pollutant caps. Lessons can be learned from the U.S. EPA's SIP Review Process, which gives the EPA similar authority. If a State Implementation Plan is inadequate or incomplete, the EPA can establish a federal implementation plan and penalize the State.
- Moreover, transparency (*i.e.,* notice to the public of planned allocation of allowances) and public participation (*i.e.,* the right of the public to comment on planned allocation of allowances) is important for making the allocation of allowances more fair and rational. The CAA requires that certain sulfur dioxide allocations (see CAA section 7651(b)) and all proposed SIPs go through a process of reasonable notice and comment before adoption.
- China has the opportunity to leapfrog U.S. mistakes in allocation of allowances. Allowances should be allocated on an output basis, rather than by using formulas based on baseline fuel consumption and specified emissions rates at a given point in time (which rewards inefficiency). More importantly, U.S. experience with the acid rain program and other similar programs shows that pollution allowances should be sold and

not given away. Revenue from the sale of allocations should be targeted at the most cost-effective pollution reduction, energy efficiency and clean energy opportunities.

- The U.S. CAA has a complex regime for preventing significant deterioration of air quality in areas with air quality better than required by environmental quality standards. We recommend that the TEC allocations be set in a way that prevents significant deterioration in areas of China with air quality better than required by environmental quality standards.

In addition, based on our understanding of China's situation, emissions trading is not a near-term top priority for us. We believe trading, in some situations, is a useful tool that can reduce the cost of emission reduction or reduce the amount of emissions. However, the effectiveness of such a system will depend on a variety of pre-conditions, including the establishment of robust and reliable monitoring and reporting. Where China continues to experiment with cap and trade systems we emphasize the following points:

- Cap and trade is one small part of an overall air pollution control strategy.
- Part of the benefit of a cap and trade system is how it partially internalizes environmental costs. But even when taken together with pollution fees, permit fees, and other taxation policies, the environmental costs of all emissions will not be fully internalized. U.S. experience shows that the pollution reduction that comes from targeted use of the funds made available from these sources far exceeds the pollution reduction from the price effect of the fees. This means allowances in a cap and trade system should be sold (such as through an auction), not given away, and the revenues from the sale should be used to reduce emissions through investment in pollution control, energy efficiency and clean energy programs.
- The U.S. cap and trade system was designed before the power sector was restructured and it was designed specifically for SO_2. It was also the nation's first cap-and-trade system so many compromises were made to address stakeholder concerns. Since then we have gained experience with NOx cap and trade and with regional GHG cap and trade systems. Overall, our experience with the system has been very positive but if we were designing the system today for China we would design it very differently. Specifically, we would (i) design the allocation system to avoid costly windfalls to generating companies, (ii) use a common platform to address SOx, NOx and CO_2, (iii) design the system to encourage investment in end-use energy efficiency and clean energy options, and (iv) require steady reduction of the cap over time.

[Recommended Provisions: Art. 8, 15[11]]

3.4 Permits: Establish an effective nationwide pollution discharge permitting system.

A permitting system is an invaluable enforcement tool. In the United States, permitting has served as an effective means of setting pollutant discharge standards and quotas, specifying monitoring and reporting requirements, and determining the necessary pollution control measures and implementation plans at the facility level. Permitting can be linked to a central review process to ensure that national level regulations are met and due penalties are in place

[11] See recommendations # 5 and 9 in the Appendix-Statutory Language Chart

and enforced. Good permitting can also give the public a role in supervising and enforcing against environmental law violations.

We recommend that the new air pollution law:

- Strengthen the construction permitting system, integrating it with China's current EIA and "Three Simultaneities" construction programs, to prevent enterprises from starting construction projects without an EIA.
- Include all key requirements in the permit, including emissions limits, TEC caps, and monitoring and reporting requirements.
- Establish strong supervisory powers for the department responsible for environmental protection under the State Council with regard to local issuance of permits, including examination and filing of permits.
- Allow the public to participate in procedures for issuing permits and accept public comments.

[Recommended Provisions: Art. 17[12]]

3.5 Pollution source monitoring and reporting: Strengthen the efficiency of monitoring, ensure the accuracy and reliability of monitoring data, and fully develop the function of public monitoring.

In order to fulfill the requirements of permits, the air pollution law should strengthen monitoring data and the reporting system for pollution sources. We propose several amendments aimed at strengthening the efficiency and reliability of China's monitoring and reporting system:

- Invest funds and resources to clarify the requirements of enterprises to monitor, record and report emissions data, in order to strengthen the force of penalties for false reporting. U.S. law establishes a variety of monitoring, recordkeeping and reporting requirements to help ensure the accuracy of such self-reporting and to deter cheating.
- Expand the scope of continuous emissions monitoring and the pollutants monitored, and monitor CO_2 based on the 11th Five Year Plan's directive to "increase the capacity for monitoring and reporting of greenhouse gases." CO_2 monitoring is already being implemented in the U.S. and is a technology available for a very low additional cost. CO2 monitoring is especially valuable in providing a means of verifying other pollutant data and as a means of monitoring power plant fuel use and thermal efficiency.
- Require public disclosure of monitoring information, which will provide environmental officials with valuable support from the public in supervising polluters.

[Recommended Provisions: Art. 17, 18, 23, 24, 42[13]]

[12] See recommendation # 10 in the Appendix-Statutory Language Chart.
[13] See recommendations # 10, 11, 13, 14, and 23 in the Appendix-Statutory Language Chart.

3.6 Local air quality implementation plans

Article 58 of the draft air pollution law presently requires key air pollution cities to develop implementation plans for meeting national standards for atmospheric environmental quality within set time limits. Experience in the U.S. has shown that state-level implementation plans and federal supervision and approval of those plans have been effective in improving planning and strategy for achieving ambient air quality standards. In the U.S., such plans must include information such as emissions limitations and other control measures, schedules for implementation, plans for monitoring and analyzing air quality, enforcement measures, permit programs, and so forth.

We recommend that:

- In addition to the key city implementation plans, the draft air pollution law incorporate a requirement for provincial-level implementation plans to set forth provincial strategies for meeting environmental quality standards. Such a requirement would promote higher-level strategic planning and aid in regional air management as well.

[Recommended Provisions: Art. 65a[14]]

4. Regulate non-road engines and other mobile sources and set low-sulfur fuel standards.

In the U.S. and other developed countries, automobile pollution is one of the most important areas of air pollution control. These countries have accumulated experience in regulating vehicles and fuel standards, and in regulatory methods. In China, given the important contribution of mobile sources to air pollution, it will be important to expand the scope of mobile sources covered by law to include sources such as nonroad engines, and to require the development of low-sulfur fuels that are necessary for stricter emissions standards to be effective. Lower emissions standards are not effective without the concurrent phasing in of higher quality fuels. In the last ten years, the U.S. and EU member countries have all taken a "systems approach" to lowering vehicle emissions. Based on this method, these countries have coordinated fuel quality and vehicle emission standards, rather than regulating these separately. Compared with regulating fuel quality and emissions problems independently, use of a systems approach allows for faster and more economic reduction of emissions. In addition, the U.S. has continuously come out with policies promoting new, more effective vehicle pollution control technologies. With regard to cars and small trucks, present technology and cost are not considered in setting emission standards, a lesson worth heeding.

Just as the department responsible for environmental protection under the State Council has promoted the development of clean energy by electricity transmission planning, the prevention of transportation-related emissions should also start at the source, emphasizing city planning and the development of public transportation.

[14] See recommendation # 30 in the Appendix-Statutory Language Chart.

We recommend that the new air pollution law:

- **Expand coverage of vehicles and strengthen regulation of mobile sources not currently within the ambit of the air pollution law**, such as heavy-duty vehicles (e.g., trucks and buses), nonroad engines (e.g., construction, agricultural and industrial mobile sources), locomotive and marine diesel engines, and aircraft.
- **Require clean, low-sulfur fuels.** Lower emissions standards are not effective without the concurrent phasing in of higher quality fuels. We recommend that the department responsible for environmental protection under the State Council be given the authority to regulate fuel quality in order to lower emissions standards while simultaneously regulating clean fuels.
- City plans should undergo EIA to ensure that the city planning process fully considers the development of public transportation.
- Ensure the revised air pollution law provides for an article establishing strong mandatory emissions technology standards for the vehicle industry.
- Strengthen regulation of vehicle production and ensure that vehicles in use meet applicable standards.

[Recommended Provisions: Art. 43, 44, 45, 48, 55, 56[15]]

5. Air pollution information disclosure and public participation.

International experience has shown that informational techniques are a powerful supplement to traditional command-and-control regulatory techniques. China has recognized this for many years and has gradually been instituting various national and local level requirements for greater transparency and disclosure of environmental information. Informational techniques have the power to create downward pressure on polluting enterprises to address their pollution on their own initiative, bring into play market forces such as the desire of many purchasing enterprises and consumers to purchase goods and products from businesses that comply with environmental laws, and can give critical assistance to overburdened environmental enforcement authorities by giving the public the ability to serve as an important supervisor and enforcer of environmental pollution violations. Experience shows that such disclosure mechanisms can also improve public understanding of local pollution situations, reduce misunderstandings that can lead to social instability, and lead to the public undertaking the task of supervising and correcting environmental violations.

We recommend that the revised air pollution law increase public disclosure of environmental information and public participation in the following ways:

- Clearly specify in the law the disclosure requirements for relevant government environmental information, such as emissions data and EIA reports, to improve the effectiveness of the EIA system.
- Ensure public participation in the standard setting process, TEC quota setting process and permitting process, to improve the scientific basis, transparency and reasonableness of the policy making process.

[15] See recommendations # 24, 25, 26, 27, 28 and 29 in the Appendix-Statutory Language Chart.

- Enterprise environmental performance. China has had good experience in Jiangsu Province with a system for disclosure of enterprise environmental performance, and we recommend that China require such a system nationwide.
- Toxics release information. We also recommend the creation of a system similar to the U.S. Toxics Release Inventory to require that information regarding emissions, use and storage of toxic chemicals be disclosed initially to the government and, as conditions develop, gradually require disclosure to the public. This would help reduce the potential for both chronic and accidental releases of toxic chemicals and improve the capacity of local governments to respond to chemical accidents.

[Recommended Provisions: Art. 3, 13, 18, 29, 30, 32, 35a, 42, and 70[16], and Art. 7, 8, 15, 17[17]]

6. Strengthen deterrence in the enforcement system:

Although we did not have the opportunity to review Chapter Five of the draft air pollution law, concerning legal responsibility, from the discussion at the November 3, 2008 meeting, we note three important points, which we describe in more detail below.

6.1 Increase penalties and strengthen the authority of government authorities to punish for falsification of data and obstruction of government environmental inspections. Accurate, reliable environmental data is essential for environmental authorities to perform their legally required duties effectively. Strong penalties, including criminal penalties and personal financial liability, deter falsification of data and obstruction of government inspections. Strong penalties in the law will send a signal that this sort of behavior is not acceptable and will not be condoned in China.

Under the U.S. CAA, knowingly falsifying air quality data, including tampering with a monitoring device, is a criminal offense punishable by a fine and/or imprisonment of up to two years.

6.2 Make the cost of non-compliance higher than the cost of compliance through *fines per day of violation*, fines to remove economic benefit gained from non-compliance, injunctions against violators, higher penalties in general, etc. One problem with the current air pollution law is that the cost of violating the law falls far below the cost of compliance. The predictable result is that many enterprises choose simply to absorb the cost of non-compliance into their business costs. Strong penalties for non-compliance are first and foremost a deterrent to non-compliance. The ultimate goal is for the environmental authorities not to have to levy such penalties. Significant penalties for non-compliance will ultimately lead to enterprises making the economically rational decision to comply with the law. The department responsible for environmental protection under the State Council should be given greater authority and funding to conduct compliance assistance with enterprises to help them achieve compliance in the most cost-effective manner.

[16] See recommendations # 2, 8, 11, 17, 18, 19, 20, 23 and 33 in the Appendix-Statutory Language Chart
[17] See recommendations # 4, 5, 9 and 10 in the Appendix-Statutory Language Chart

In the U.S., the Administrator of the EPA can enforce against violations by issuing administrative penalties, or bringing a civil or criminal enforcement action. The Administrator can impose administrative penalties of up to $25,000 per day, for up to a maximum of $200,000. In a civil enforcement action, the Administrator can seek a permanent or temporary injunction, and/or assess and recover a penalty of up to $25,000 per day for each violation. When assessing the amount of any civil penalty, the Administrator or court considers factors such as the size of the business, the economic impact of the penalty on the business, the violator's full compliance history and good faith efforts to comply, the duration of the violation, payment by the violator of penalties previously assessed for the same violation, the economic benefit of noncompliance, and the seriousness of the violation.

Finally, criminal penalties for violation of the CAA can range up to five years for persons convicted of knowingly violating a state implementation plan or CAA requirements regarding inspections, permits, etc.

6.3 Expand the enforcement "toolbox" of environmental officials and the public, and fully use judicial measures to solve environmental disputes. International experience has shown that a comprehensive set of enforcement tools is essential to effective enforcement and compliance. In China, there has been significant judicial innovation at the local levels in recent years with the creation of at least five pilot environmental courts, and various local rules on public interest litigation. The newly-created Wuxi environmental court most recently passed regulations on public interest litigation, setting forth a procedure for public interest suits brought by the procuratorate. We recommend that the draft air pollution law codify such experiments, or at minimum authorize and encourage further experimentation at the local levels with such promising tools.

[Recommended Provisions: Art. 12, 20, 26,[18] 74 – 101 (not yet publicly disclosed)]

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[18] See recommendations # 7, 12 and 16 in the Appendix-Statutory Language Chart