COMMENTARY

# Energy Efficiency in China: Impetus for a Global Climate Policy Breakthrough?

By Anne Arquit Niederberger, Conrad U. Brunner, and Zhou Dadi

With only limited domestic energy resources and sustained rapid economic growth, China has come to dominate the growth in global oil demand, contributing to record high oil prices over the past year—between 2002 and 2005, China's oil demand increased by a third. With China's electricity demand also growing at an alarming rate, staggering investments in coal-fired power generation capacity have failed to keep pace with peak demand, while causing serious environmental harm and hampering economic development. These developments underline the significance of China's energy and environmental policy choices and the global impact they will have. This crisis is catalyzing new thinking on energy efficiency and renewable energy in China, creating an opportunity for a breakthrough on global climate policy.

The Eleventh Five-Year Plan (FYP) represents a bold shift in government strategy towards a "scientific approach to development." For the first time, the Chinese Communist Party formally proclaimed that economic growth (measured in GDP terms) is not an adequate measure of economic development. In light of the growing energy challenges, China's leadership has made a clear commitment to building a more efficient society, which is crucial to achieve the dual quantitative objectives of the Eleventh FYP, namely:

- Doubling of per capita GDP between 2000 and 2010; and,
- 20 percent reduction in energy consumption per unit of GDP over the period 2006 to 2010.

Whereas China is well on track to attain the economic growth target (which would continue the trend in GDP growth achieved between 1980 and 2000), the energy intensity target is much more challenging. China must both develop its rural economy (which will generate greater demand for energy services) and make the fast growing urban economy more competitive. In the aggregate, the demand for energy services is expected to remain positive for decades to come, but energy efficiency can play a key role in ensuring that this demand is met in a less energy- and greenhouse-gas intensive way. The interdependent drivers of future demand growth include:

- Investment in new residential, commercial, and industrial infrastructure in response to population and economic growth from both migration and urbanization. This will require energy for construction materials (steel, copper, cement, glass, and brick), building operation (heating, hot water, ventilation, cooling, and lighting), and household and office equipment;
- Expansion of industrial production to serve both domestic and export markets; and,
- Transport sector development, including expansion of the national highway network, increasing car ownership rates, and construction of public transportation and rail systems.

Although the energy intensity of the economy declined by over 50 percent between 1980 and 2000 while GDP quadrupled, energy consumption per unit of GDP has begun to climb again as a result of more energy intensive investment, industrial, and export activities. Yet China's remaining potential to improve energy efficiency is staggering: with electricity demand currently growing at approximately 15 percent annually, the need for huge new generation capacity through 2020 could be eliminated through efficiency improvements which would bring China in line with international best practice.

Globally, there is a massive failure to capitalize on the full potential of demonstrated high-efficiency supply-side and end-use technologies to mitigate climate change. Yet as recent energy scenarios generally agree, energy efficiency will make the most important contribution to climate mitigation over the next decades (the International Energy Agency expects demand-side energy efficiency alone to account for two-thirds of mitigation in its Alternative Policy Scenario 2006). According to the Third Assessment Report of the Intergovernmental Panel on Climate Change, adoption of existing high-efficiency technologies would make it possible to reduce global emissions to below 2000 levels by 2010 to 2020. Half of the potential reductions would result in direct benefits (energy saved) exceeding direct costs (net capital, operating, and maintenance costs). With the price of a ton of 2008-vintage $CO_2$ allowances in the EU Emission Trading Scheme generally above €17 per ton ($23)—and stricter commitments on the horizon for the future—the feasibility of realizing this untapped potential is evident.

It is in China's best interest to become a leader in energy efficient technology development, domestic deployment, and export. The government wants to encourage development of the high-tech export sector, decrease dependence on foreign oil, and reduce pollution associated with the use of fossil fuels. China already has a domestic high-tech industry capable of producing products (cars, appliances, lighting, motors, and electronics) that meet the toughest efficiency standards worldwide, as well as great potential for domestic deployment. Thus, the country could take the lead in setting international standards, while improving product quality and branding to better compete in international markets and retain a larger share of value added in China.

With its Energy Conservation Law and plans to implement the energy saving provisions of the Eleventh FYP, China is well positioned to aggressively address barriers to energy efficiency domestically, while playing a proactive role in the UN Framework Convention on Climate Change (UNFCCC) negotiations.

The United States—which is responsible for 25 percent of global greenhouse gas emissions—has rejected the Kyoto Protocol and demanded action from China before it will commit to significant greenhouse gas emission reductions itself. China has no binding greenhouse gas emission limitation commitments under the UNFCCC/Kyoto Protocol. To break the current policy deadlock, it will be crucial to engage both the United States—the largest single emitter, with emissions growth of over 30 percent since 1990—and key developing countries that have large and rapidly growing greenhouse gas emissions, such as China, Brazil, India, Mexico, and South Korea. This is a difficult challenge, given heavy global dependence on greenhouse gas emitting fossil fuels, national interest, and equity considerations. Energy efficiency represents a promising field for negotiating agreement on a future global climate regime, because energy efficiency is widely attractive to both developing and industrialized countries, due to its large potential, relatively low cost, and multifaceted contribution to sustainable development.

In fact, China should do a much better job of communicating the greenhouse gas emission reductions it has already achieved through energy conservation measures introduced since 2000 (e.g., Medium- and Long-Term Energy Conservation Plan, Renewable Energy Law, Maximum Limits of Fuel Consumption (L/100 km) for Passenger Cars). If China takes the lead, the United States and Europe must respond constructively and are in a good position to commit to—and demonstrate leadership on—energy saving measures, so there are good prospects for international consensus.

China would be well positioned to promote a protocol on energy efficiency that is consistent with the policies and measures it has adopted to promote the country's "scientific approach to development"—such as programs in promoting an energy efficient and resource saving economy, energy efficiency standards, revision of power tariffs (to send proper price signals to consumers and provide incentives for utility-sponsored energy-saving programs), and new product/resource taxes. The Chinese leadership could catalyze a much needed political debate on launching a global energy efficiency offensive in the near term as a means of tapping into low-cost greenhouse gas reduction potential immediately, which can buy time to develop new technologies and fuels and to build the public support and political will needed to adopt policies to reduce emissions even further.

The Eleventh FYP demonstrates an understanding of the symbiotic match between the ethics of sustainable development—which has its foundation in long-term holistic thinking and respect of nature—and the aim of achieving an all around well-off society, based on a scientific approach to development. The policy rhetoric on energy saving is strong in China, but the government needs to work with international partners to overcome its deficit in policy formulation, implementation, and assessment. Climate policy leadership on energy efficiency would not only be beneficial to China, but could also serve as a catalyst to break the current climate policy deadlock.

COMMENTARY

# China's Water-Short Cities: Some Number Games

By James E. Nickum and Yok-shiu F. Lee

## CHINA'S WATER-SHORT CITIES

Sources often report that a certain number (now about 400 out of over 660) of China's cities are water short, and a somewhat smaller figure (currently varying from 79 to 130) are seriously short (He and Guo, 2004; Zhou, 2002; Xiao, 2002). These numbers are eagerly picked up by Chinese and foreign analysts to demonstrate the magnitude, and presumed worsening, of China's urban water "crisis." Yet it is hard to know what to make of these measures, which say much less than they seem to. For example, the proportion of water-short cities, roughly two-thirds, has remained relatively constant since the early 1990s despite the rapid growth in the number of cities, urban populations, and economic development during that period (Nanjing Institute, 1997; Qian & Zhang, 2001). If anything, recent claims of shortage, measured by the number of water-short cities, have become slightly less severe over the past decade.[1]

There are at least two explanations for this trend, which flies in the face of common wisdom that the water situation in China's cities is deteriorating. One is that the messenger is the problem; the other is that the common wisdom is wrong. We will argue that there are problems with the messenger (the reporting categories) and the message they seem to convey. It is also possible that the common wisdom is not entirely correct, but it is difficult to know for certain because of the problems of the messenger and, more largely, of measurement. We wish to raise two epistemological problems in dealing with reports of water shortages in China's cities—the first explores the definition of cities, the second considers the parameters defining water shortage.

## THE FIRST PROBLEM: WHAT IS A CITY?

It is hard to put precise figures on urban growth in China due to of frequent shifts in how the urban population is counted, and because the figure often given for "urban population" (*chengshi renkou*) is actually the total population under municipal (*jianzhi chengshi* and/or *jianzhi zhen*) administration (Lee, 1989). In the post-reform era, the number of cities and their spatial boundaries were pushed up by three major administrative measures: prefectures were turned into cities, rural counties were designated as cities, and suburban counties were transformed into urban districts. For instance, as a result of re-designating suburban counties as urban districts, Beijing's urban area (*jianchengqu*) expanded from 1,270 square kilometres (km²) in 1996 to 6,400 km² in 1998, and Shanghai's urban area increased from 375 km² in 1986 to 3,200 km² by 1998. Between 1976 and 2001, about 400 suburban counties have been re-designated as urban units in China, leading to enormous spatial expansion of cities and contributing to inflated urban population figures (Chung & Lam, 2004).

Moreover, since Chinese municipalities usually include large rural areas (Chongqing, the "largest city in the world," being a particularly egregious example), this can overstate the number of people actually living in built-up urban areas by an order of magnitude (Li, 2002). Thus, China's urban population in 1997 is given as 370 million, or 30 percent of the total population, but only half of this was registered as "non-agricultural" (*fei nongye renkou*)[2] (Qian, Liu, & Shao, 2002). This high proportion of not-"non-agricultural" urban population might be thought to have significant implications for water

use: if half the municipal population is rural, in all likelihood over half of the water is used in irrigation. But it is not as simple as that. A significant portion of the not-"non-agricultural" population are "floating" urban dwellers with household registrations in rural areas. Not surprisingly, non-agricultural urban populations have grown relatively steadily and modestly, while the figure for total *chengshi* urban population has been quite volatile, rising from 330 million in 1990 to 390 million in 2000, then falling back to 350 million by 2002 (State Statistical Bureau, 2004:15). By 2004, Chinese sources reported that urban population had risen to over 500 million, or 42 percent of the population (*Zhongguo Huanjing Baohu Zongju*, 2005). The statistical confusion does not end there; the 10 percent or so of China's population that is living in urban areas who carry household registrations in rural areas do not show up in official statistics.

Another problem is that urban figures sometimes include nearly 20,000 towns (*jianzhi zhen*) and sometimes they are more strictly limited to cities (*jianzhi chengshi*), which number in the hundreds. "Water-short cities" refers more strictly to the cities, and not necessarily all of them, because of data limitations.

## THE NEXT PROBLEM: WHAT IS AN URBAN WATER SHORTAGE?

One reason that the often cited figure for "water-short cities" may lead to a false, or at least misdirected, sense of panic lies in how that figure is defined. An urban water shortage is determined by comparing the delivery capacity of existing public facilities of water to an estimated level of demand, or "needs," at a certain level of probability. This level of guaranteed delivery is based on hydrological records, and tends to be much higher for urban and industrial uses than for agriculture. The estimated demand is based on a set of parameters, which include, inter alia, "per capita norm (*dinge*) of comprehensive water use" and "amount of water consumed per 10,000 Yuan of industrial output value." The values of such parameters, however, vary substantially between different types of cities (Yu et al., 2003). Urban water shortages are then determined in relation to estimated demands for industrial, municipal (*shenghuo*), public facilities, and perhaps even environmental purposes (Liu & He, 1996). They do not include irrigation, commonly the greatest user of water within the larger metropolitan area.

In most cases, an urban water shortage is actually a shortage of infrastructure to divert, develop, treat and deliver water and deal with sewage. Not surprisingly, the source of the water shortage data appears to be the Ministry of Construction. Chinese figures distinguish between three different types of urban water shortage: inadequate water locally, inadequate clean water, and inadequate supply infrastructure (Liu & He, 1996). Cities both north and south report water shortages mostly because of infrastructure lags. Absolute local shortage of water is less often identified, but when it is, it is more likely in the north, while water pollution is more likely to be cited in the south. There may be some overlap in the categories, as well, since where water is short it is also likely to be polluted, because of limited natural capacity to purify discharged wastes.

One of the earliest surveys of urban water shortage appears to have been a 1995 research project carried out by the Ministry of Construction, using 1993 data on 548 out of the (then) 570 cities. Data was not available for the remaining 22 cities. Of the 548 cities, 333 were determined to be water short. Amongst these, 260 (78 percent) were short because of inadequate infrastructure. The ratio was even higher for the 32 megacities, with all but one short because of a construction lag. Forty-nine cities were water short primarily due to a lack of a nearby water source, while only 19 lacked water because of pollution of the water source (although pollution was implicated in an additional 76 cases)(Qian, Liu & Shao, 2002).[3] In another survey of 365 cities conducted in the late1990s for urban planning purposes, 273 cities reported water shortages as a problem. Only 21 cities were found to be water-short because of water pollution, while the majority of these cities were defined as "water short" because their water supply infrastructure was lagging behind the expansion of the urban built-up areas (Pei et al., 2005).

## SO HOW SERIOUS IS THE URBAN WATER SHORTAGE IN CHINA (OR CAN WE TELL)?

It would also appear that, with local exceptions in time and place, water shortages may actually be quite limited in their impact. The overall magnitude of China's annual water deficit is said to be 36 cubic kilometres ($km^3$), five-sixth of which

One of the many—often polluted—canals in Beijing.
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is in agricultural water supply. The remaining 6 km³ shortage in urban and industrial water supply (about 4 percent of total supply) is said to cause a loss of over 200 billion Yuan in gross industrial output value (Wang et al., 2005). This is not a significant share of China's total industrial output value, which was over 14,000 billion Yuan in the year 2003 and had increased by 27 percent over the previous year (*Guojia Tongji Ju*, 2004: 124). In addition, roughly the same magnitude of loss (230 billion Yuan) was reported in the much smaller economy of the early 1990s (Nickum, 1999).

The extent of water shortage is highly contingent upon the values of the parameters used to estimate the demand for municipal (*shenghuo*) and industrial use in a particular city. One might argue that the water shortage in a city could be exaggerated if an overly generous figure of "per capita designated amount of comprehensive water use" is used to calculate overall municipal water demand. For instance, in estimating the city's overall municipal water demand in 2002, Guangzhou followed the figure of 487 liters per capita per day—which was way above the country's average (Zhu & Pu, 2004). By the same token, the extent of shortages could be overstated if the value of another parameter—amount of water consumed per 10,000 Yuan of industrial output value—reflects an inefficient industrial sector that does a poor job in recycling water.[4] For example, if factories in Guangzhou could increase the rate of industrial water recycling beyond the current 30 percent level, the estimated amount of industrial water demand, and hence, the overall water shortage figure could be greatly reduced.

Actually, it seems that water infrastructure has kept pace with urban growth. The ratio of total daily water delivery capacity to peak daily demand for public delivery systems (*gongshui*) was below 1 between 1974 and 1993, but climbed subsequently to 1.23 in 1999. This statistic was qualified by noting that it does not cover people who "mainly" rely on their own facilities for water (*zhuyao kao zijian sheshi gongshui*)—which covers 145 million out of 370 million urban dwellers in 1999 (Qian, Liu, & Shao, 2002: 15).

An economics editor for the BBC noted that urban China has seen "permanent construction replace permanent revolution" (Davis, 2005). Particular emphasis has been placed in the past decade on increasing the rate of urban wastewater and sewage treatment, estimated at under 5 percent in actual practice (cf. the reported capacity-based treatment figure of 13.4 percent) in 1997 (Qian et al., 2002). This focus on sewerage may reflect a kind of environmental Kuznets effect, where action is taken to address certain problems after a certain threshold per capita income has been attained. Nonetheless, we must caution against assuming that wealth cures past sins in a deterministic fashion, independent of social and institutional factors. Pricing and finance gaps are drivers that open up a number of thorny institutional issues of ownership, operation, and water rights that remain to be resolved before China's ambitious goals of treating 80 percent of urban sewage by 2020 are realized.

## CONCLUSION: THE BUREAUCRATIC CONSTRUCTION OF KNOWLEDGE

It should come as no surprise that statistics generated by project-oriented ministries such as construction and water resources should be in large part aimed at making a case for infrastructure development. At the same time, we need to recognize that infrastructure is necessary (but not sufficient) for China's expanding cities, and China's engineering-oriented bureaucracies are not exclusively focused on supply-side aquanomics. Demand management, wastewater recycling, and reallocation among existing uses are increasingly seen as of greater importance for China's cities than opening up new supplies, with the massive exception of the *nanshui beidiao* inter-basin diversions from the Yangtze to the parched north (Qian, Liu & Shao, 2002).

At the same time, even though the most publicized statistical categories on water shortage, to the

extent that they enlighten more than they obscure, appear to indicate that the water shortage is (so far) overrated, this does not mean that China's cities have the solution to their water problems in hand. The small but probably growing proportion of cities with polluted water sources are not addressing sufficiently the problem of the poor water quality flowing through and out of the cities. Pollution of water sources is increasingly coming from the development of economically lagging watershed areas, often in other jurisdictions and frequently due to non-point sources of pollution, such as agriculture and small-scale industry. The construction of sewage plants does not guarantee their effective use or adequate maintenance—even before the current construction boom, it was estimated that the existing plants were operating at well under half their capacity. The knock-on "water footprint" effects of "solving" water shortages through interbasin diversions or groundwater mining do not show up in city-focused data. Indeed, it would seem that bringing sufficient water of adequate quality to urban and industrial users is becoming an increasingly complex problem, requiring innovative political and institutional responses.

## ACKNOWLEDGEMENTS

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## NOTES

1. *Shichang Bao, 25 March 2005, "Woguo chengshi queshui 60 yi lifangmi,"* citing Zhao Qianjun, available online at http://www.h2o-china.com/news/viewnews.asp?id=28820.

2. There does not seem to be a comparable category for "agricultural population," probably because those who are not "non-agricultural" are not necessarily agricultural, in the world of Chinese urban statistics, but migrants with rural household registrations.

3. The three categories actually add up to 328, five cities short of the total, for some unexplained reason.

4. The amount of water consumed per 10,000 Yuan of industrial output value in China was 103 cubic meters, which was 10 to 20 times that of developed countries (Feng & Wang, 2001).

COMMENTARY

# China's Cities Seize the Initiative: Strengthening Auto Emissions Control on the Streets

By Isabella Notar

One of the main reasons the Chinese central government has failed to create a strong environmental governance system is due to its inability to force powerful local governments to enforce strict pollution and conservation laws. The power devolved to these local governments 26 years ago as part of the free market reforms sparked rapid economic growth—an unsustainable growth built in great part on destruction of the environment. Thus, central leaders have experimented with two types of pollution control measures—creating market mechanisms and recentralizing some pollution control regulations and standards. While some recentralized regulations have tightened standards, some, such as unified emissions controls for motor vehicles, have been kept deliberately weak to accommodate localities less developed than the major cities. In the face of national policies that do not sufficiently address the vast increases in traffic congestion and pollution levels, key Chinese cities—Beijing, Shanghai, and Guangzhou—have taken creative steps to develop *ad hoc* automobile emissions control policies that are stricter than central policies. While strictly transgressions from national policy, these local actions reveal a kind of innovation and local-level collaboration that ultimately could produce effective solutions to China's environmental problems.

Bicycling scene in Beijing. Chinese municipal governments are increasingly discouraging bicycle use on city streets. ©Isabella Notar.

## ENVIRONMENTAL OVERSIGHT FOR CLEAN AIR REGULATIONS IN CHINA

One fairly well-functioning model of a central government exercising effective oversight of local governments to control air emissions (from mobile and non-mobile sources) is in the U.S. Clean Air Act (1990), which requires each state to develop a State Implementation Plan (SIP) to attain the National Ambient Air Quality Standard. If the state fails to submit an approvable SIP within 18 months of the applicable deadline, the federal Environmental Protection Agency (EPA) is required to impose sanctions which may result in the cutoff of federal transportation funds and hold back approval of required federal permits for stationary sources wishing to expand. The EPA is required to promulgate a Federal Implementation Plan (FIP) to fill the gap in the deficient state plan within two years of SIP disapproval.

China's State Environmental Protection Administration (SEPA) does not have the authority or ability to withhold funding in order to enforce national environmental clean air regulations at the local level. The central government has tried to

pressure local governments through a variety of other mechanisms, most of which have failed. For example, in the early 1980s, China introduced the environmental responsibility system, which mandates that local governments are responsible for environmental quality in their region. In the case of a municipality, the mayor is held accountable for fulfilling environmental targets made through written contracts or agreements (Zhang, 2001). SEPA has also created various "model city" programs to publicize cities that have succeeded or failed to meet national air emission standards, but this praise-shame strategy has done little to improve the air quality in China's cities.

While setting emission standards to guide the auto industry's development is important in improving air quality, an examination of China's transport sector reveals that the government's high standards have overstepped the capacity for enforcement in practice. For example, Chinese experts have confirmed that the lack of intergovernmental enforcement has meant not all new Chinese-produced cars on the roads meet the required idling speed emission requirements (Shen, Zhuang, & Fan, 1999).

If new car models exceeding the current national emission standards are allowed to enter the market it is not simply a sign of weakness in the vehicle emission management system, but also inherent vagueness in the national Air Pollution Control Law (APCL). Within Beijing's version of the APCL, Article 32 stipulates that emissions from motor vehicles cannot exceed the standards and no work unit or private company can manufacture, sell, or import motor vehicles that exceed the standards. Article 53—Legal Responsibilities—mandates that if anyone violates Article 32, the monitoring department will stop the illegal action, confiscate the illegal property, and fine the company less than twice the profit. However, there is no clause in the law explaining which government department is in charge of investigating the production facility or who is responsible for issuing the penalty. When I raised this question during an interview with a Beijing EPB Ambient Air Management Division official, the answer was equally vague. Beijing's APCL appears to lack clear definitions concerning the duties of each department so there is a great reluctance to assume responsibility. The official expressed serious concern over the lack of transparency of the governing bodies ensuring ecological liability in the auto-manufacturing sector; "this is the major flaw in the vehicle emission management system."[1]

A report published by the Policy Research Center for SEPA highlighted that new vehicle emission control regulations are not in the form of laws, but rather that they are "reflected in sectoral management;" the sector authorities are the vehicle producers themselves. Therefore, the basis for controlling emissions depends on self-inspection by producers (Policy Research Center, 2001). In China, vehicle emission standards focus on discharges rather than on the design of specific technologies. Factories can use cheap parts and they are free to choose the technology, which can impact the emissions. There is no control over the lifecycle of products or control of the procedures that go into design. Regulations also do not mandate durability requirements so emission performance deteriorates in a large number of vehicles soon after they leave the manufacturer (Sun & Zhao, 2001). Emission standards for new vehicles are not accompanied by certification, recall, or warranty requirements. Another missing link in the regulatory regime is the lack of clarity on enforcement and inspections. According to the requirements of the State Bureau of Technology Supervision, the Ministry of Mechanical Industry will organize uniform supervision and inspection on the quality of vehicles, but at the time of this writing, the regulation was not yet implemented.

While the government in Beijing may have the authority to dictate policy, it does not have the means to effectively punish transgressors. Paradoxically, three large municipalities—Beijing, Guangzhou, and Shanghai—have taken advantage of this lack of central control to impose more, not less, environmental standards to lower auto emissions. In all three cities, official responsibility for vehicle emissions control has been transferred from the Public Security Division of the Transportation Department to the environmental protection bureau (EPB). Institutional changes have caused a shift in control that has empowered their EPBs to make these stricter policies work. Notably, these three cities have pushed key government agencies to work with the EPBs, which has enabled them to begin effectively addressing the problem of deteriorating urban air quality.

## THREE INNOVATIVE CITIES

### Aiming for Green Games—Beijing

Both the hope to secure the 2008 Olympic Games and the desire to check the environmental consequences of rapid motorization were the driving forces behind stepped-up measures to reduce traffic-induced emissions in the capital over the last decade. It has not

been easy for the city to establish more stringent air pollution control requirements. The central government permits local governments to impose stricter standards from national laws only when pollution concentration levels for PM10, $SO_2$, and $NO_x$ are worse than China National Air Quality 3rd Class Standards. The State Council allowed Beijing a variance to national law and priority in environmental protection in 1998 only after a wait of six months.[2]

Beijing officials chose to take advantage of a rule stated in the PRC Air Pollution Control Law and Beijing Official Procedure for Prevention of Vehicle Exhaust Gas, whereby the municipal EPB has the responsibility of supervising the emission situation of vehicles for sale in Beijing. The Beijing EPB now conducts its own selective inspection of mass-produced cars on the market. Models failing to meet the Beijing EPB's standards, which are stricter than national ones, will not be on the list of permissible vehicles to be sold or driven in the city, even if the same model passed SEPA's test ("Beijing Tougher," 2002).

In effect, Beijing has granted itself an exemption to national law allowing it to set more stringent emissions standards. The central government has not ruled that Beijing has overstepped its authority although its rules have the effect of dictating higher fuel efficiency standards. The situation has similarities to a current U.S. environmental policy debate. The 1967 U.S. Clean Air Act (CAA) ruled against state-established automobile emission standards because of the inefficiencies the vehicle market would encounter. However, Congress wrote an exemption to CAA allowing California to adopt stricter air quality standards.[3] Individual states must now adopt either the EPA's national auto emissions standards or the California low emissions vehicle (LEV) emissions standards.[4]

### Playing Number Games—Shanghai

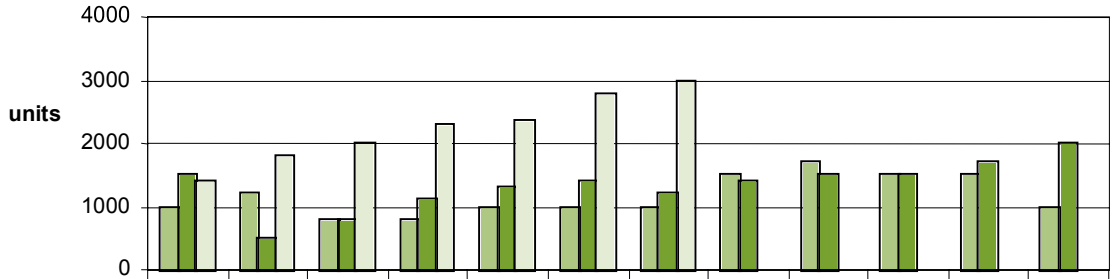
Shanghai, like Beijing, has chosen to regulate the cars on its streets to control traffic pollution, but unlike the capital it has decided to restrict the number of vehicles sold each month. Despite a 1990 directive from the State Council banning restrictions on inter-provincial trade and prohibiting any indigenous policies regarding industries, a Private License Plates for Auction policy was implemented in 1997 (Bezlova, 2000). Shanghai's policy is also at variance with the 1994 Auto Industry Development policy that seeks to foster individual ownership of cars and abolish government control of vehicle purchases (Stares & Liu, 1996).

The process of buying a private car through the auctioning program is a great inconvenience to both buyers and sellers. The monthly auction is held in Songjiang district, in a remote location outside the city limits. At the time of this writing, the subway did not reach the site and the distance from the downtown Shanghai to the exhibition center is considerable, even by Chinese standards. The silent auction starts at 9:00 in the morning—a person has one chance to submit a computer bid and, since the number of plates available and the lowest winning price are predetermined, it is important to arrive early to place a bid before the numbers run out. The whole affair is rather exciting, with expensive sports cars and SUVs on display, sales agents racing to launch new models, professional bidders from the car companies, and a thriving black market of sellers and buyers of license plates in violation of the legal price control.[5] While some are profiting on the side from this auction, overall this licensing system has slowed the growth of cars on Shanghai's roads by only gradually increasing the number of licenses available each month. (See Figure 1). As a sobering comparison, Beijing adds 1,000 cars to the road daily.

> **"…overall the licensing system has slowed the growth of cars on Shanghai's roads…as a sobering comparison, Beijing adds 1,000 cars to the road daily.**

While counter to the central government's auto development policy in spirit, the private car limitation measure is not an official violation as long as the city's objective is to limit the number of vehicles per year and does not discriminate against any particular car company or violate WTO agreements.[6] Rather it is a legal loophole because there is no law on the books that directly prohibits a city from taking strong actions to improve transportation conditions.[7] This strongly suggests that the central government seems to permit local governments more independence in establishing transportation regulations that suit local circumstances, than in enacting local legislation to prevent environmental degradation. For example, Beijing's closest neighbor, the city of Tianjin failed in its application for special

## FIGURE 1: Number of Car License Plates Available for Bid Per Month in Shanghai




| | 1 | 2 | 3 | 4 | 5 | 6 | 7* | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year 2000 | 1000 | 1200 | 800 | 800 | 1000 | 1000 | 1000 | 1500 | 1700 | 1500 | 1500 | 1000 |
| Year 2001 | 1500 | 500 | 800 | 1100 | 1300 | 1400 | 1200 | 1400 | 1500 | 1500 | 1700 | 2000 |
| Year 2002 | 1400 | 1800 | 2000 | 2300 | 2350 | 2800 | 3000 | | | | | |

Source: Xinbao Auto Week June 24, 2002
* July 2002 author estimate

air quality standards in 2000 because the city's air was not considered bad enough.[8] While local and central authorities are passing legislation to achieve the same broad objective of improving air quality, the innovative local governments are doing better than SEPA.

### Putting the EPB into the Game—Guangzhou

Guangzhou has chosen to formulate a new and comprehensive development strategy in response to the many facets contributing to deteriorating urban air quality in its region. The strategy includes: (1) establishing an Interagency Cooperative Department to facilitate communication between the municipal EPB and city government; (2) widening the definition of vehicles subject to emissions standards to include military vehicles; (3) encouraging public transport, while simultaneously; (4) discouraging the use of bicycles on city center roads.

*Interagency Communication.* The Interagency Cooperative Department (ICD), which brings the municipal EPB into the daily routine of city planning at all levels, is strategically located behind the wall of the municipal compound Guangzhou residents call City Hall. In contrast, the EPB and transportation departments in Beijing and (until recently) Shanghai are located approximately one hour's travel apart.[9] By making regular meetings easier, the ICD established a setting more conducive to integrating environmental concerns into local decision-making, particularly over auto emissions.

*Including the Military.* In a daring act that would have once been unthinkable in China, the Guangzhou EPB now feels it necessary to evaluate military vehicles for emissions.[10] Such non-uniform procedures have the effect of increasing, somewhat dramatically, the functional capacity of the existing pollution control network, since the PLA and Chinese officials comprise as much as 40 percent of the users who travel the expressway linking Shenzhen and Guangzhou (Turley, 1998).[11] Involving the military in the regulatory arena is especially advantageous since its service units and enterprises have been singled out in the past as major obstacles to effective enforcement of environmental regulations (Tang, Tang & Prakash, 1998).

*Public Transport.* Guangzhou also has put public transportation high on its agenda. Passengers carried on public transport per capita increased by 120 percent over the past decade, an impressive figure compared to the 20 percent increase in Beijing, the 9 percent decrease in Chongqing, and the 49 percent decrease in Shanghai.[12] Guangdong's increase in public transport load is a considerable achievement not only in China, but also internationally.

*Discouraging Bicycle Use.* In contrast to Beijing, where attempts to build new roads in the city without the obligatory bike paths were defeated by popular protests, the Guangzhou government has actively sought to decrease bicycle use within the city. Bicycles are prohibited on many of the upgraded city center roads, and almost all new roads are built without segregated bicycle lanes. High overpasses with gradients have severed established bike routes. As a result, the number of bicycle trips in Guangzhou dropped from 34 percent in the late 1980s to 20 percent in 1998 (Ernst & Hook, 2002).

## CONCLUSION

As China continues to evolve away from centralized pollution policies to an environmental governance system that encompasses broader participation, the importance of recognizing the role progressive cities could play in environmental protection becomes clear. The central government has adopted unified emissions controls for motor vehicles. However, the above discussion of Beijing, Shanghai, and Guangdong suggests that some cities are taking advantage of the gray area between local and central authority in environmental affairs to implement transportation policies that have had a positive effect on controlling vehicular emissions. It merits mention that while these three cities circumvented national air quality policies to devise stricter measures, most Chinese cities avoid enforcing the central government's looser standards. However, the new models of local collaboration and innovation being devised in Beijing, Shanghai, and Guangdong do offer some useful models that other cities could emulate. In short, innovative local governments can provide valuable models to central policymakers as they seek new approaches to slowing vehicle pollution throughout the country.

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## NOTES

1. Interview with Environmental Protection Bureau official, 29 April 2002, Beijing.

2. Interview with Vice-Director Senior Engineer, Ambient Air Management Division, Beijing Municipal Environmental Protection Bureau, 9 August 2002.

3. A 2006 National Research Council (NRC, 2006) report deemed California's pioneering role in programs on fuel composition, regulation of individual motorists' use of their automobiles, and controls on transportation infrastructure planning good for the nation despite the additional risks and costs of design, production and distribution.

4. In 2002, the Bush administration opposed Massachusetts' adoption of California's amendment to the LEV program to regulate carbon dioxide, which was not defined as a polluting substance as defined by the CAA in 1967 (Schlesinger, 2002).

5. Commentary based on personal interviews conducted at the 22 June 2002 "Shanghai Car Market Trading Day" and the author's participation in the silent auction.

6. Interview with Director Section Member Senior Engineer, Science and Education Department, Shanghai Urban Transport Bureau, 19 June 2002.

7. Interview with Deputy Director Division of Air Pollution and Noise Control, SEPA, 20 July 2005.

8. Interview with Director, Division of Air Environmental Protection, Tianjin EPB, 9 July 2002.

9. The EPB in Shanghai has moved considerably closer to the Transportation Department since the time of this initial writing.

10 Interview with Director, Engineer, Guangzhou EPB, 24 July 2002.

11. This estimate refers specifically to Chinese officials and People's Liberation Army officials who use the Hopewell Highway, a six-lane 123 kilometer expressway linking Shenzhen with Guangzhou.

12. Conclusion drawn from examining various years of municipal statistical yearbooks from Shanghai, Chongqing, and Beijing.

COMMENTARY

# Public Participation with Chinese Characteristics

By Margret J. Kim and Robert E. Jones

*Political co-determination should be part of any socialist democracy…I am not one to put on a show just to look democratic to the outside (but) we need a law that enables and guarantees public participation, especially when it comes to environmental projects.*

Pan Yue
Vice Minister of China's State
Environmental Protection Administration[1]

The mood of the training room is almost always the same—an orderly scene of desks and chairs all neatly lined up with everyone looking appropriately serious, sipping the ubiquitous *lü cha* (with the annoyingly ever-present floating tea leaves), struggling to hold tiny paper cups that are invariably too hot. The venues vary by city—from grand banquet halls to converted discos, their crystal balls and other paraphernalia providing a striking, if somewhat incongruous backdrop. At one workshop in Xinjiang, our presentation was even accompanied by the latest "soap," quietly emanating from a TV behind the tattered curtains surrounding the sound technician.

Surprisingly, the meetings often commence with a Chinese official's grandiloquent description of the seminal events of the U.S. environmental movement, quoting excerpts from Rachel Carson's *Silent Spring*, boosting our hopes that the audience of environmental protection officials and consultants will be well primed and ready to embrace what we are about to present. At the workshops, which typically run for 2 to 3 days, we are always reminded of the Asian learning style of rote memory, as the audience stares unblinkingly, seemingly transfixed, without so much as a single question. Sometimes the atmosphere warms up when a few courageous souls cast off their reticence and engage in some enthusiastic interaction, but most times halfway through the presentations we begin to wonder if our stone quiet audience is absorbing any of the material. One can never tell, as most in the room will not open up so quickly to share their opinions, perhaps out of politeness and deference to their foreign guests—rather ironic to say the least, as the workshops are all about public participation. It is at this point we begin pondering whether we are wasting our time.

Despite the subdued workshops we do not think we are wasting our time, for promoting public participation is key to improving the environment in China. China's many environmental laws are increasingly embracing progressive market measures. While the concept of leapfrogging to cutting edge environmental tools is appealing to Chinese policymakers and international advisors alike, looking to the market as the key to solving China's environmental woes is not the answer, not without a fundamental commitment to a high level of transparency and public participation to ensure reliable compliance and enforcement.

Chinese officials often use a "cafeteria approach," choosing from "foreign experts" bits and pieces of advice that they deem most desirable and oftentimes succumbing to the blandishments of the latest quick fix. But, can this approach be effective when different foreign experts introduce seemingly conflicting methods for public participation, causing further confusion to an already complicated concept? For example, some non-U.S. systems endorse "qualified or selective participation" while others limit the

public's involvement to post-decision on the project for possible mitigation only.

China stands at an important crossroads and its success in increasing public voice in the environmental sphere will depend largely on the government's underlying objectives for promoting public participation. Namely, are officials simply interested in maintaining control over the outcome or *really* encouraging independent views and healthy debate? China's political culture is one in which citizens have not traditionally had a strong voice in policymaking, however, recent policy pronouncements, such as the Eleventh Five-Year Plan, encourage more public participation in building China's "socialist democracy."

In our workshops throughout China, we have learned that there are two major challenges to instituting public participation mechanisms: (1) Chinese government officials and researchers struggle with the concept of the public's *right* to participate and (2) there are many political and cultural obstacles that potentially hinder the *process* of public participation. International and Chinese organizations interested in promoting public participation in China must understand these obstacles to promoting the public's right and creating a sound process. Below we use insights gained at numerous workshops to evaluate how China is progressing in setting up the basic rights and processes needed to create a more participatory environmental governance system.

## THE PUBLIC'S RIGHT TO PARTICIPATE

**The public should have a say about government actions that affect their lives before decisions are made.** This basic right forms the foundation for the whole public participation process, but is not completely embraced yet in China. During a meeting to discuss promoting the concept of public participation at a well-known university in Shanghai, we were harangued by a professor about the futility of involving the public in environmental decision-making. In a state of near hysteria she lectured us by saying, "after all, what does the public know? We set the pollution standards and that's that. In fact, they don't even want to know." She went on to warn us, shaking her finger, that we couldn't "do that kind of business in China." Elitism is obviously alive and well in China.

Many Chinese policymakers and academics appear to view the public participation process as a formality, without giving much thought to the purpose. Core to public participation in environmental decision-making in the United States is that it takes place sufficiently before an action is taken. However, in China hearings soliciting public opinion are invariably called either too late or after decision-makers have more or less made up their minds. In training workshops for environmental officials and environmental impact assessment (EIA) consultants, our description of the public participation process in California, with the emphasis on early outreach, is often met with blank stares. While some in the audience are impressed, others cannot conceive of the time-consuming planning that goes into the process of involving the public and the fact that holding just one public hearing will not suffice.

**Anyone—not just select individuals—should be allowed to participate in public hearings.** The biggest question and debate at workshops has been who should be invited to government hearings and give input about environmental policies or EIAs? At a workshop in Shenyang, a Q&A continued on this topic for about 30 minutes until the stunned participants finally comprehended that in the United States "anyone" could participate. This idea strikes most Chinese officials as being incomprehensible if not downright ludicrous. In China, depending on the type of forum, only a select number of people may participate. Although, it was refreshing to hear some academics argue in favor of inclusiveness (even though they themselves belong to the privileged classes) by admitting that they would not be able to appreciate the actual impact on the ground. When asked why participation should be limited and whether decisions to select who may participate should be discretionary, most answers were surprisingly based on practicalities—resources (the lack thereof), time, and cost. For example, how to physically accommodate large numbers of people? Of course, in the United States that is the reason why government agencies hold multiple meetings and hearings at different locations. In their desire to be practical, our wary workshop participants fail to understand how broader participation could prevent serious and costly policy mistakes. As they continue to experiment with the process, however, we are confident they will realize that citizens have a lot to contribute.

**The public should be allowed to participate in a meaningful manner.** In order to participate meaningfully, the public must have access to relevant information and have the needed resources to fully comprehend the consequences of the

decision. China is still in its infancy in providing sufficient reports and documents to enable the public to meaningfully participate in EIA proceedings. The concept of providing more than "notice-style" information is also very novel. Disclosure laws requiring open access to government information are either narrow in scope or yet to be properly implemented. Our workshop participants often ask how to deal with "state secrets" as they are broadly defined in China, with some joking that virtually anything could be one. The sad irony is that limiting access to relevant reports defeats the main objective of EIAs, which is to disclose to decision-makers and the public the significant environmental effect of the proposed activities.

## THE ADVANTAGES OF INVOLVING THE PUBLIC IN THE POLICY AND REGULATORY PROCESSES

**Public participation informs and encourages active contribution to government decision-making.** In China, decision-makers focus more on "informing" than "consulting" the public. While informing is a critical step, it is essentially only a one-way form of communication. Many Chinese officials are uneasy about interacting with the public at EIA hearings because they fear it could actually lead to changing decisions that have already been made. Public participation is also often perceived by officials and project owners as simply the need to satisfy the people, rather than satisfy the legal standards and process to support the decision. A common worry at workshops is, "how can we please everyone?" Our response has been to stress that the process is not about whether government surrenders to the public's demands but rather, that their comments are given serious consideration in making the decision based on law. Moreover, decision-makers need to communicate back to the community explaining why their comments were or were not adopted. Many officials are relieved to learn that the process allows "realistic expectations" to be relayed to the public, and that the agency still makes the final decision.

**The public participation process encourages flexibility and facilitates broad involvement of citizens.** Methods and guidelines that are being introduced in China to encourage public participation in EIAs are inclined to limit not only who may participate, but when and how. For example, the use of a single opinion survey by urban environmental protection

"Many Chinese officials are uneasy about interacting with the public at EIA hearings because they fear it could actually lead to changing decisions that have already been made.

bureaus as well as project owners to gather public comment for EIAs, while very helpful at the beginning of the process when seeking input to design an outreach plan, certainly should not suffice as the only means for the public to comment. Moreover, seeking frequent input as people become more educated and familiar with the proposed project is crucial. At this time, Chinese officials appear to be more obsessed with the form rather than content of public participation for EIAs, as evidenced by the lack of flexibility and time allocated to conducting participatory activities. At workshops, most participants cited convenience as the reason the public's answers were usually confined or pre-scripted. While this limited form of participation may be a convenient tool at this stage, as organizations and agencies struggle to deal with unsophisticated participants, only asking the public to engage in a narrow band of questions and issues creates the potential for a manipulation of the process to only support agency decisions.

**The process should communicate to participants how their input was used in decision-making.** Feedback to the public is perhaps the most critical part of the process because if citizens have no confidence their comments are being taken seriously, they will resort to other actions—such as violence or suing—and ignore the process completely. Typically, all relevant and significant comments should be addressed and there are ways to organize voluminous comments. Chinese officials are still experimenting with how to determine whether comments are valid or what criteria they should adopt for accepting or rejecting comments.

**The public participation process should foster sensitivity towards low income and minority communities.** China's economic reform has outpaced social infrastructure development, resulting in serious

shortcomings in the institutional support that is necessary to deal with growing environmental degradation, especially in poor rural areas, where people feel their livelihood has been snatched away. The Chinese government has admitted growing concern regarding the rural unrest with pollution, with over 600,000 letters and visits of citizens to environmental officials in 2004. Nationwide the government recorded 87,000 mass protests in 2005, many of which were sparked by land grabs by local governments, closing factories, and increasingly, environmental pollution.[2] To help diffuse this escalating situation, many in the Chinese government are seeing the advantage of increasing the public's voice in environmental governance. For example, in early 2006, SEPA passed regulations on public participation for EIAs, which is a promising development. While it may be premature to introduce the concept of environmental justice, which typically deals with unfair environmental impacts on low income and minority communities, we found many environmental officials in China receptive to this idea and the use of social impact assessments (SIAs). Shell China Ltd. conducted extensive EIAs and SIAs in the construction of the 4,000-kilometer West-East Gas Pipeline project, which was groundbreaking for infrastructure planning in China. Expanding such a process to all infrastructure projects may be too ambitious at this stage, but will clearly serve as a useful tool in the future for China.

## FURTHER THOUGHTS

### Encouraging Central Government Commitment and Support.

Most local officials in China are risk-averse, more interested in maintaining the status quo rather than experimenting with a new and unfamiliar approach of introducing the public into their decision-making. Therefore, there is little incentive for change without strong commitment by the central government encouraging enforcement at the provincial and local levels. Inspired leadership from the dauntless SEPA Vice Minister Pan Yue will be essential in keeping the momentum for public participation. For those involved in giving policy advice at the highest level, it is important to continue emphasizing the benefits of public participation in achieving China's stated goals. Unlike quick technological solutions that can be adopted overnight, the implementation of the public participation process demands a steep, and time-consuming learning curve.

### Promoting Versatile Capacity Building

Capacity building is essential because the new participatory approach in EIAs is a significant departure from the previously closed decision-making process. Currently, there is a chronic lack of capacity at the implementation level, disempowering even the most willing local officials. One senior EPB official in Jiangsu brilliantly described this challenge:

> To be truly effective, we need a long-term and region-wide planning, rather than a project-by-project focus. But the public's educational level is too low to appreciate the environment and we (EPBs) lack even the basic expertise to collect and analyze data, let alone have the ability to conduct extensive research on the impact.

Significantly more resources need to be allocated on an ongoing and flexible basis to increase education, skills, and experience necessary to satisfy local needs to carry out the new public participation regulations for EIAs at all levels of government (as well as for consultants and NGOs). Moreover, there must be horizontal cooperation among different ministries and agencies. Some ministries are wary of the EIA public participation process as a means for SEPA to usurp their authority. Thus, international experts involved in EIA hearing and related capacity building work may want to encourage inclusive training over a broad cross section of government departments to overcome vertical and horizontal bureaucratic turf battles.

### Overcoming Historical Associations and Preconceptions

One major obstacle to introducing a new participatory process is the lack of clarity in the meaning of participation. Chinese officials are unfamiliar with truly bottom-up public participation and attempts to create a more participatory environmental governance system could result in nothing more than old-style campaigns with hollow rhetoric and slogans. By way of example, misunderstanding the process related to EIAs as some sort of numbers game; an official at one of our workshops boasted that China has already conducted more EIAs (however inadequate) than any other country in the world.

In order for public participation to truly work, the community must have confidence in the process. This entails introducing the mechanics

but also shifting the mindset of officials and the public—the former think citizens will automatically defer to their views and the latter often fear retaliation for speaking out. SEPA is already expanding its public participation training beyond EPBs. At a workshop in Guiyang, we were surprised at the large number of consultants in attendance who were eager to engage and learn. Chinese NGOs are also calling for more public participation in environmental protection and government officials should respond by working with them to empower citizens. Such partnerships will lead to better government decision-making with wider support from the public.

## CONCLUSION

While bumps are expected along the way (two steps forward, one step back), China cautiously continues its flirtation with public participation as a potential solution to an array of social and environmental problems. When introducing Western public participation concepts and tools, international experts should engage in a coordinated fashion, with utmost care and respect for cultural, historical, and political factors. While inclusive decision-making takes time, local government, stakeholders, and the public need to buy into the process to create a greater sense of ownership so that it can be effectively implemented. In closing, an over-zealous, evangelizing approach to public participation must be avoided at all costs, as this will be treated with suspicion and resentment and may be seen as part of an attempt by the West to slow China's development. At the same time, a too generic, one-size-fits-all approach and one that is not adequately adapted to local circumstances, could have the disastrous effect of setting back China's embryonic public participation efforts by decades.

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## NOTES

1. *Der Spiegel*, Interview of Minister Pan Yue by Andreas Lorenz on March 7, 2005

2. Jonathan Watts (2006, January 21). "Land seizures threaten social stability, warns China's leader" The Guardian. [Online]. Available: http://www.guardian.co.uk/china/story/0,,1691804,00.html.

# Recent Developments at the Center for Legal Assistance to Pollution Victims (CLAPV)

By Xu Kezhu and Alex Wang

The Center for Legal Assistance to Pollution Victims (CLAPV) has garnered much attention in these pages in recent years (see *CES* issues 4, 5, and 6). Nonetheless, like all things in China these days, environmental litigation is a rapidly evolving area and what was written before requires an update. While CLAPV, founded in 1998, remains one of China's only nongovernmental organizations (NGOs) devoted to environmental litigation, the nature of its work has seen important shifts and expansion in the past two years.

Over the past few years CLAPV's staff has been busy; the center's legal assistance hotline, established on 1 November 1999, has serviced nearly 8,500 calls. Of the 74 legal cases CLAPV has taken on, 31 have resulted in victory or mediated settlements in favor of plaintiffs. In all, over 20,000 people from most parts of the country (excluding Tibet and Hainan Island) have received CLAPV's assistance.

While CLAPV continues to advise on legislation, train judges and lawyers, and carry out exchanges with international organizations—such as the Japan Environmental Council, Natural Resources Defense Council (NRDC), American Bar Association, and others—it also plans to expand its capacity to conduct outreach in rural areas most affected by pollution and to work more actively with the government to promote implementation of environmental laws. In the past two years, four significant trends have emerged in CLAPV's work:

(1) *Administrative law cases against environmental protection bureaus (EPBs) and other government agencies have increased.* It is axiomatic that enforcement of environmental laws in China has been poor. EPBs often do not enforce industry violations of environmental laws, and the bureaus themselves often do not comply with the law. Administrative litigation has been an indispensable tool in forcing government compliance with the law in many countries, such as the United States. In China, litigation against administrative agencies is showing initial signs of promise. Even where cases have not resulted in judicial victories, administrative litigation has in some cases been responsible for creating the impetus for mediated results or other government action.

For example, with assistance from CLAPV, two farmers in Hebei Province sued the Dingzhou municipal EPB for illegal approval of an environmental impact assessment (EIA) document. Though the basic level court rejected the case on standing grounds, the litigation led directly to SEPA suspending the work unit that drafted the EIA for six months; the case is currently on appeal. Other examples of CLAPV-supported administrative lawsuits include:

- Beijing resident Zhang Shijun brought a case against the Beijing Dongcheng District Public Security Bureau (PSB) for failure to enforce noise pollution regulations. The lawsuit directly led to the PSB taking enforcement action and issuing an apology to the plaintiff.
- 182 residents of Panjiayuan South Village took the Beijing Planning Committee to court regarding its approval of a permit to construct an animal experimentation laboratory near a residential area. The basic level court held that the plan violated applicable regulations.
- Residents of Beijing Baiwangjiayuan have tried to sue the Beijing EPB for its approval of an EIA concerning a high voltage transmission line project. The plaintiffs seek cancellation of the EPB's approval of the project's EIA; the court has not yet reached a decision in this case. However, a separate case brought by residents against the Beijing Planning Commission was dismissed for lack of standing.

View of the Baiwangjiayuan high voltage transmission towers from the Summer Palace. © Bie Tao

(2) *Class action suits involving environmental pollution victims have increased in number*. Early cases supported by CLAPV tended to involve a single plaintiff or members of a single family bringing suit. The past two years have seen an increase in cases involving numerous plaintiffs against a common defendant. Cases have involved one or more villages and even entire counties. One of the most notable cases involved over 6,000 people from Panzhihua municipality in Yanbian county, Sichuan Province, suing a single yellow phosphorous production plant for its air pollution. Class action suits ideally create the momentum and pressure to compel enterprises to make technological improvements or alter polluting behaviors. Moreover, they are vehicles for increasing public awareness of environmental laws and rights.

(3) *CLAPV is expanding its work to include cases seeking compensation for health impacts of environmental pollution.* In its early years, CLAPV largely focused on economic losses related to damage of private property, such as private fishery stocks or fruit orchards. The key barrier in human health-related cases is the difficulty of demonstrating the connection between pollution and health consequences. Additionally, China's legislation concerning compensation for loss from pollution is incomplete. As a result, calculations of losses and compensation, if any, typically lack legal basis.

(4) *CLAPV is exploring ways to address new forms of environmental harm that have arisen along with breakneck economic development and rising environmental awareness*. These new forms of harms include indoor air pollution (in homes and automobiles), impact from electromagnetic radiation (from high voltage cables), and various types of noise pollution.

As China continues to grow, so too will the scale and scope of environmental problems facing the country. CLAPV endeavors to evolve and adapt to these changes and continues to fulfill its mission of assisting those most vulnerable to the environmental consequences produced by China's growth.

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