

## **WASTE REUSE: LEGISLATION AND ENFORCEMENT IN CHINA**

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### **SUMMARY**

This paper provides a brief background on the current situation of waste reuse in China and an overview of waste reuse legislation and enforcement. The existing problem, and enforcement institutions as well, their current capacities and the necessity to improve enforcement mechanisms and processes are discussed.

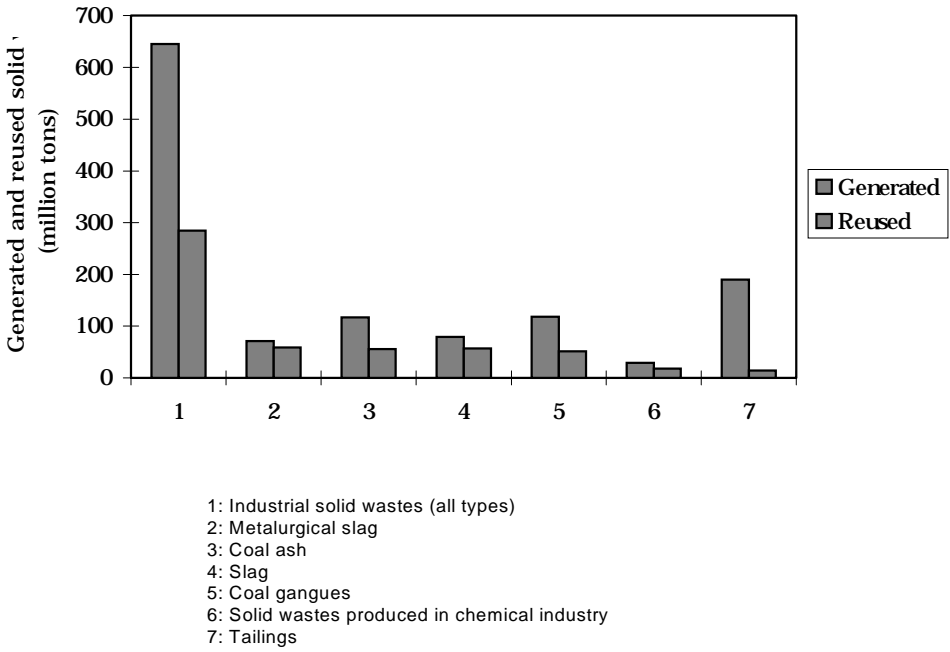
### **1 BACKGROUND**

Since the late 1970's, China's economy has grown at an average rate of over 8 percent per annum. It is estimated that the rapid growth will be sustained over the coming years. The impressive development record has resulted in significant increases in the economic strength of the country and living standards of the general public. However, the rapid economic growth puts severe pressure on the environment and natural resources.

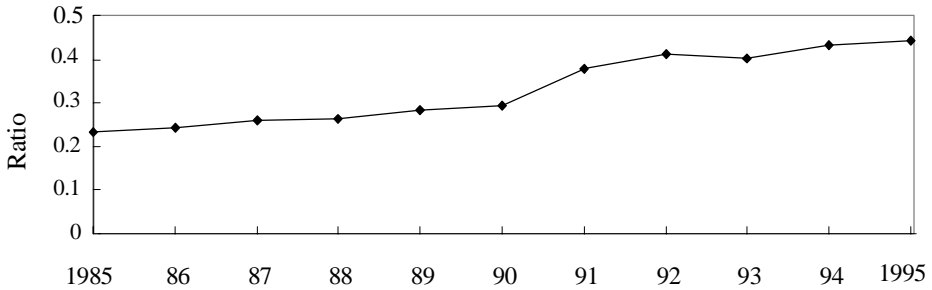
It has been pointed out that, in comparison, China's environmental policy and legal infrastructure is more advanced than many other developing countries.<sup>1</sup> Due to poor enforcement, however, the legal system has not played a fully suitable role.

Waste reuse was identified as early as the 1950's as one of the important resource utilization policies for China, when the environmental problem was not widely understood. Since then, a comprehensive waste reuse system has been established for both industrial and domestic wastes. As for domestic waste, a high percentage of used paper, beverage packaging and other household wastes were collected and reused/recycled in most urban areas. As for industrial and commercial wastes, the policy was also partly successful, although it was not as remarkable as in the domestic waste arena. For instance, most of the cities in northern China suffer water shortages resulting in often tremendous economic losses. Under these circumstances, wastewater reuse has widely been carried out as one of the key parts of water utilization policy in these cities, and has played an significant role in large cities like Tianjin, Qingdao and Dalian. In recent years, with the recognition of the importance in both resource conservation and environmental protection, waste reuse has been given increasing more attention by all levels of governments and by the public. We should especially emphasize that with the progress of economic reform, economic incentives have played the most important role in the whole process of waste collection, disposal and reuse/recycling.

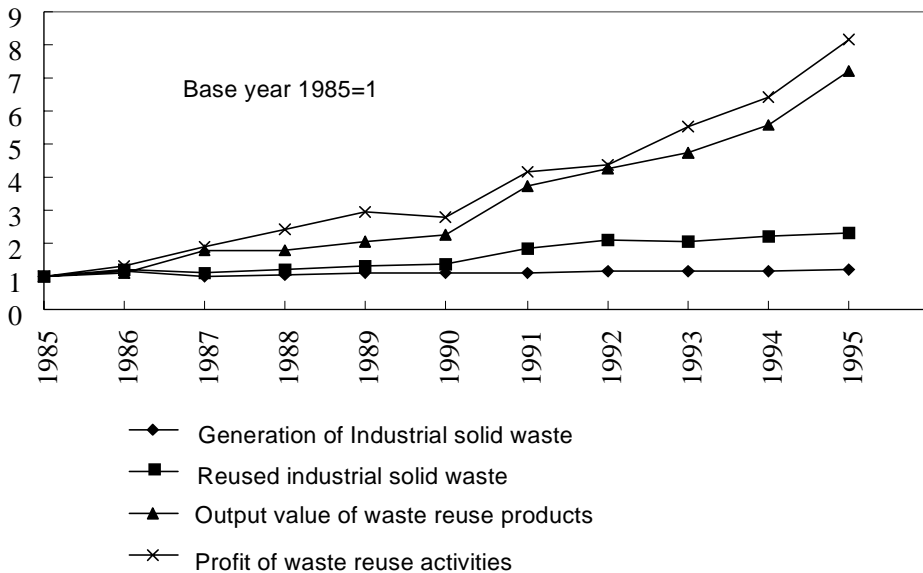
Nevertheless, due to the rapid growth of the economy and waste generation (both industrial and domestic), only a very low percentage of wastes have been disposed of in a way that posed no threat to the future environment. Although the reuse and recycling rate were increased and the total amount of solid waste generated kept almost unchanged in recent years (Figures 1, 2 and 3), enterprises dumped a large amount of industrial wastes directly into lakes or streams. A large amount of untreated wastes dumped at the fringes of cities have already threatened the groundwater quality on a wide scale.



**Figure 1** Generated and reused industrial solid wastes (1995)  
 Source: China Environmental Protection Yearbook, 1996 Author: X.J. Wang



**Figure 2** Changes in ratio of reused and generated solid waste  
 Source: China Statistical Yearbook, 1996 Author: X.J. Wang



**Figure 3 Variations of generated and reused industrial solid wastes**  
 Source: China Statistical Yearbook, 1996 Author: X.J. Wang

In China's laws and regulations, waste reuse is embedded in the wider coverage of policies and strategies for resource utilization. According to the definition given by the State Economic and Trade Committee (SETC), comprehensive resource utilization consists of the following three factors: (1) the exploitation and utilization of intermixed minerals; (2) the reuse/recycling of solid waste, waste water, gas, heat and pressure generated through production processes; (3) the recovery of waste materials generated in social production and consumption.<sup>2</sup>

Since waste reuse is closely interrelated with waste generation and disposal activities, relevant waste disposal legislation and enforcement must also be addressed in the discussion.

## 2 LEGISLATION IN WASTE DISPOSAL AND REUSE

Although China has not formulated a separate waste reuse/recycle law, relevant stipulations are to be found in a number of existing environmental, resource, and economic laws and regulations. As early as 1973, in the "Stipulations in Protecting and Improving the Environment", comprehensive resource utilization was identified as one of the major tasks of environmental and resource protection. The Environmental Protection Law of China promulgated in 1979 restated this aim that comprehensive resource utilization is one of the major task of environmental protection.

More recently, China has adopted new environmental and resource protection laws and regulations that have concrete provisions related to comprehensive resource utilization. In these laws and regulations, direct regulation through command and control measures play an important role. Incentive-based and more market oriented measures like taxes and levies are gradually growing in importance. Part of the important economic stipulations in current laws and regulations are:

- Tax reduction, which is awarded to the companies whose products appeared in the "Comprehensive Resource Utilization List" issued by the government.
- The products produced through comprehensive utilization processes are to be exempted from the product taxation for a certain period.
- The wastes that could not be reused or recycled by the enterprises in which the wastes are generated should be offered free to other enterprises for reuse or recycling.
- The imported equipment used in comprehensive resource utilization should get favorable treatment with respect to customs duties and foreign exchange arrangements.
- Waste reuse projects that have no economic benefit to the enterprise are to be supported by the government. The enterprise should be given favorable treatment through loans from business banks, and the deadline of payment of the loan can be postponed for a period.

The Law of the People's Republic of China on the Prevention and Control of Solid Waste Pollution was adopted in 1995 and enacted on April 1, 1996. Its Article 4 encourages comprehensive utilization of resources, and recovery and rational utilization of solid waste. It seeks the adoption of economic and technical policies and measures favorable for the comprehensive utilization of solid waste. Articles 17 and 18 ask that industrial products be packaged so as to be easy to recycle, dispose and assimilate in the environment. Product producers, sellers and users should recover and utilize the product packages and containers that are recoverable and utilizable. For example, the State encourages its scientific research units and production units to research and produce large plastic sheeting for high-value agricultural crops that is easy to recycle, dispose of or assimilate into the environment. A unit or individual that uses such agricultural sheeting should take measures, such as recovery and utilization, to prevent or reduce the environmental pollution by such coverage. Article 38 of this law requires the relevant departments of a city government to make overall planning and rational arrangements on purchasing stations in order to promote the recovery and utilization of discarded materials.

Provisions related to waste reuse can also be found in other laws and regulations, such as the Marine Environmental Protection Law, Water Pollution Prevention and Control Law, Atmospheric Pollution Prevention and Control Law, and the Mineral Resource Law, among others. However, most of the waste reuse provisions in these laws are quite general and lack stipulations for enforcement. For example, Article 11 of the amended Water Pollution Prevention and Control Law stipulates that the relevant departments of the State Council and local people's governments at all levels make a rational plan for the industrial distribution, conduct rectification and technical transformation for enterprises that have caused water pollution, adopt measures for prevention and control in a comprehensive way, raise the rate of water recycle, use resources in an integrated way, and reduce the discharge of wastewater and pollutants. However, no incentives or disincentives were mandated for wastewater reuse activities in this Law.

Similar waste disposal and reuse policies can be found in important government documents, such as the China Environmental Protection Action Plan<sup>3</sup> and the Agenda 21 for Environmental Protection in China<sup>4</sup>.

As mentioned above, up to now, there has not been a comprehensive and separate law dealing with the waste reuse issue specifically. In recent years, the State Economic and Trade Committee was quite active in stimulating the development of a comprehensive resource utilization legal framework. Some preliminary studies have been carried out. It is expected that such a law could be worked out and implemented in the near future.

Besides legislation at the national level, waste disposal and reuse regulations are increasingly being proposed and implemented on regional levels. More and more provinces and major cities have enacted their own specific provisions. That said, the related liability and arbitration for environmental damages caused by waste disposal are still not very advanced, both in national and local levels.

### **3 ENFORCEMENT ISSUES**

Without credible enforcement mechanisms, environmental legislation cannot fulfill its mission properly. Enforcement has widely been identified as a weakness in many countries, especially those that are developing or in transition. The enforcement of environmental and resource legislation is currently weak when it comes to dealing with China's environmental damage. It has to be pointed out that China's environmental policy and legislation system is complex. The complexity of the system adds to the difficulties in compliance and enforcement. Furthermore, in the transition period, the legal systems in economy, society and many other fields are under tremendous adjustment. The legal provisions in environmental and resource protection are sometimes overlapping or contradictory, thereby adding more difficulties to the enforcement of these laws and regulations. As has been shown in the newly promulgated laws, efforts have been made to make new legislation reflect the needs of comprehensive resource utilization, environmental protection, as well as the need for dynamic economic reform processes.

Since the late 1970's, China has established vast networks of governmental institutions at the national, provincial, municipal, county, township and village enterprise levels to address environmental problems and the comprehensive resource utilization issues related to them. This structure is responsible for implementing relevant policies and legislation. Both the National Environmental Protection Agency (NEPA) and the State Economic and Trade Committee (SETC) have played important roles in waste environmental and reuse fields. The Committee has a special responsibility for renewable resources, including energy, and is mandated to oversee all aspects relating to the reuse of waste.

Because of limited public involvement, China's environmental institutions have assumed the major role of environmental pressure groups - viewing themselves as a legitimate counterbalance to strong industrial interests. In recent years, the media and public also have paid increasing attention to environment and resource protection, which have put an increasing pressure on the polluter and resource waster.

In 1993, China established the Environmental and Natural Resources Committee within the National People's Congress (EPC/NPC). Since its establishment, the pace of legislation has been speeded up, especially since the Solid Waste Pollution Prevention and Control Law has been implemented in April 1, 1996, as noted earlier. The Committee has been playing a very

important role in supervising the enforcement of relevant laws and regulations. Every year, groups organized by the EPC have traveled around the country to check and supervise compliance and enforcement of the laws.

The major, admittedly overlapping and interrelated problems persisting in the enforcement of waste reuse legislation are:

- The current environmental monitoring and administration infrastructure is highly fragmented. For example, in environmental protection and most other sectors, most of the actions take place in local areas. The majority of China's environmental officials work in provincial, municipal or county-level Environmental Protection Bureaus (EPBs) or in environmental divisions within province-level ministries and state-owned enterprises. It is true that they work in close relation to the relevant institutions at the national level. Ideally, this also makes it easier to fit environmental control strategies to widely differing realities across the country. Environmental Protection Bureaus are operating as independent entities in negotiations with companies. Nevertheless, in general, the provincial, municipal and county governments are more interested in economic growth, which might work to increase pressure on the Bureaus to lessen their environmental duties. Moreover, in some areas, due to the significant weakness of environmental interests in the local government, the Bureaus' voices are often quite weak as regional governments and enterprises fight to gain their economic growth targets.
- Central institutions like the National Environmental Protection Agency and EPC provide relatively weak supervision in local areas due to the huge territory and diversity of the country. Allegations of corruption among local Environmental Protection Bureau officials have been identified in some areas, especially among lower-level clerks responsible for inspecting sites and collecting waste disposal fees and fines. Environmental regulation and Environmental Protection Bureaus's advice were sometimes ignored.
- Waste disposal and reuse are not only environmental issues, but also resource and economic ones. There is a lack of coordination among government agencies in all levels. The State Economic and Trade Committee has traditionally taken responsibility for promoting waste reuse, while the National Environmental Protection Agency is responsible for environmental monitoring and administration. Responsibilities of other units are not as clear. Article 10 of the Solid Waste Pollution Prevention and Control Law sets the duties for solid waste disposal supervision and management of the related government departments. As a case in point, the competent departments of construction administration under the State Council and the competent department of environmental and sanitary administration of the local people's governments at or above the county level are responsible for the supervision and management work of clearing, collection, storage, transport and disposal of urban household refuse. The competent departments of environmental protection administration under the State Council should conduct unified supervision and management of the national work of prevention and control of solid waste pollution. On the one hand, the relevant departments under the State Council should supervise and manage the prevention and control of solid waste pollution within their scope of official duty. On the other hand, local governments and environmental protection agencies

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were also given comparable responsibilities for the prevention and control of waste pollution. Thus, there remains insufficient clarity over the division of responsibilities of state and local government, environmental protection agencies, industry and individuals in such pollution management and control areas. Added to this problem are the implementation difficulties arising from frequent institution reforms.

- In European countries, permit, examination and other management instruments have been and are extensively applied in waste collection, disposal and reuse fields. However, in China, we lack such a management regime. Few effective management instruments are applied and enforcement has been limited.
- Since a large number of provisions can be identified in very different legislation and policies governing very different scales and sectors, it was widely agreed that overlaps and even contradictions have added the difficulties in the compliance and enforcement. For example, before the Solid Waste Pollution Prevention and Control legislation, there were no laws or regulations that clearly stipulated what enterprises and institutions have the responsibility to construct facilities and sites for storing or disposing industrial solid wastes which they generate and cannot or temporarily cannot be utilized. This is one of the key factors resulting in the low reuse/recycle rate of solid waste.
- In the country's transitional period, contradictions of planning and market economy have existed everywhere. For example, under central planning system, enterprises are administrated within certain sectors. An enterprise usually cannot engage in production activities outside its own field. Yet many waste reuse and recycling activities are beyond one industrial sector. As a result, a large amount of industrial wastes have been disposed of although they might be reused by enterprises in other sectors. In recent years, although central planning continued to play important role in the most critical sectors of China's economy, the process generally has become more reliant on indirect policy instruments, e.g., the interest rate. It is expected that with development of the market economy system, such problems will gradually disappear.
- Legal liability is extremely important for compliance and enforcement. There are, however, clearly not enough legal liability regulations and stipulations in current waste reuse and disposal legislation. Moreover, a number of the existing articles are hard to implement. For example, there is lacking of specific stipulations for penalizing the institutions and individuals who cause new pollution brought up by waste reuse activities.
- Although in recent years, the media and public have paid more and more attention on environment and resource protection, generally speaking, the public involvement of waste reuse and disposal has been far from perfect. There is still a long way to go.

#### 4 RECOMMENDATIONS

Although economic reform has significantly improved the efficiencies of resource utilization and waste reuse, it is clear that the pressures on environment and resources have been increasing in recent years, due to the rapid growth of the economy. More efforts are necessary to solve these problems. Among the legislation and enforcement dimensions, the

latter must be paid more attention. All aspects of enforcement, from economic incentives to administrative action, supervision, court action, imposition of a fine and public involvement, should be undertaken more efficiently. Major recommendations are summarized below:

- Experiences in China and abroad demonstrate that, in many cases, waste reuse could achieve economic benefit. The adoption of economic incentives could significantly increase the interest of industry and individuals involved in waste reuse activities. It is necessary, thus, that more economic incentives, like tax reduction, should be adopted in the future for promoting waste reuse activities.
- To be effective, waste reuse legislation must aim at achievable targets. It should be enforced through administrative, civil and criminal measures. One of the effective enforcement tools is criminal prosecution. Those behind serious pollution events caused by unreasonable waste disposal and the violation of the related laws should be subject to criminal punishment. Criminal penalties should be applied not only against the offender, but against potential violators.
- We should always prevent the damage of waste disposal before seeking to punish the offender. The enforcement of preventive measures should be among the top priorities. For most of the environmental issues related to waste disposal, it is almost impossible to compensate for the loss after the hazardous event. Therefore, steps must be taken to prevent the occurrence of damage, in addition to punishing the offender and to imposing fines when no other alternative is available.
- The steps of formulating the Comprehensive Resource Utilization Law should be speeded up. It is clear that China's waste reuse policies and regulations, especially economic incentives, have frequently been changed over the last ten years. This has had negative consequences, since industry has not been able to follow stable guidelines. Accordingly, it is necessary to streamline relevant provisions in a number of regulations into the above mentioned Comprehensive Resource Utilization Law. Detailed regulations and technical policies in specific fields like the reuse/recycle of plastic waste, metal waste, paper waste, etc. should also be formulated.
- In current laws and regulations, the stipulations governing inspection and licensing on waste disposal and reuse are not enough. Close supervision is also required to ensure strict compliance with legal stipulations. Inspection and surveillance are essential for performing the National Environmental Protection Agency's and EPC's roles. Due to the weak enforcement of laws and regulations at the local level, there is a strong case for the central environmental institutions to delegate more responsibility to regional and local representatives in order to enable the central institutions to fulfill the environmental watchdog role it has over the entire country. They should check and supervise the enforcement of waste reuse laws and regulations, check and supervise the steps which governments in all levels have taken, and check and supervise the cases related to waste reuse. It is necessary for these institutions to establish and enhance their ability in supervision and management. Capacity-building at all levels of environmental and resource agencies is badly needed.

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- Since the State Economic and Trade Committee and other related industrial departments have played important roles in waste reuse management and policy making, it is clear that the Committee's responsibilities in these fields should be enhanced. Especially, its role and relations with the National Environmental Protection Agency and other industrial and other sectors should be clarified. The responsibilities of each institution should be clearly defined in relevant laws and regulations.
  - The local authorities should have their own responsibilities in the inspection arena. It is also necessary to improve the cooperation and coordination among the various bodies in order to avoid duplication and improve the efficiency.
  - In order for supervision to be effective, the personnel in all the institutions must be trained to have the necessary knowledge and qualifications.
  - It is suggested that a extensive monitoring system of waste pollution and reuse/recycle should be established. A unified monitoring standard and regulation should be formulated, though area-specific implementation would be required.
  - As part of the efforts to strengthen the enforcement of waste reuse related laws and regulations, it is essential to increase the consciousness of the public in the significance of waste reuse, provide them with relevant technical data, legal tools and necessary facilities. Citizens play the important roles by making complaints against offenders, as well as involved in the waste reuse procedure themselves. Media also should be encouraged to put pressure on wasteful enterprises.

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