

Policy Recommendations on Financial Mechanisms for Environmental Protection in China

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Insufficient investment has long been a bottleneck hindering environmental protection in China. In the period of the Government's Ninth Five-Year Plan (1996-2000), the gap between demand and actual supply of funds for environmental investments was estimated at up to 90 billion RMB. During the Tenth (2001-2005) and the Eleventh Five-Year Plans (2006-2010), the total combined demand for environmental investments is estimated at 1.6 trillion RMB. The gap will widen further if no improvement is made in financing mechanisms for environmental protection in China. The Government has recognized the importance of this issue, and has endeavored to increase the level of environmental investments by broadening the scope of financing channels. **Another key issue closely related to insufficient investment is the low efficiency of environmental investment, which influences its effectiveness.**

The issues of insufficient investment and low efficiency are prominent in two fields of environmental protection—urban environmental infrastructure (UEI), and abatement of industrial pollution from small and medium-sized enterprises (SMEs). Today, as China goes through rapid urbanization, the development of UEI is lagging far behind the speed of urbanization, and there is a growing shortage of environmental infrastructure facilities. By 2002, the percentage of treated sewage compared to the total volume produced nationwide was only around 22.3%, and the percentage of garbage disposed of safely was 20%. Accordingly, the actual demand for funds to build such facilities is large. To achieve the targets of wastewater treatment and solid waste disposal set for environmental protection in China in the Tenth Five-Year Plan, 150 billion RMB would need to be invested in facilities construction, and then roughly about 170 billion RMB, during the period of the Eleventh Five-Year Plan.

The importance of SMEs for national development is undeniable. In China, SMEs account for 99% of the total number of enterprises, and they produce 55% of the country's gross domestic product (GDP) and 76% of total value-added by industry. At the same time, however, SMEs discharge about 50% of total emissions of industrial pollutants. **Owing to their weak financial resources and high costs, as well as the risks involved in commercial financing, SMEs face certain difficulties in financing pollution control, compared to large enterprises.**

The low efficiency of environmental investment is evident in the processes of construction and operation of facilities of UEI and SMEs.

In terms of UEI, the narrow range of available financing mechanisms is a major factor causing the problem of insufficient investment. There are two aspects to this problem. First, financiers other than the government and polluters play minor roles or no role at all today. Second, there are no effective commercial financing mechanisms in place for environmental financing. An examination of national

statistics shows that government and public funds account for 70% of the total environmental expenditures in China, while in the United States, the United Kingdom, and other countries with market economies, investment by the private sector constituted 60% of pollution abatement expenditures. **Low efficiency occurs because of the absence of effective mechanisms for the participation of investors other than the government in the construction, operation, and maintenance of UEI, and the lack of competitive mechanisms based on market principles.**

Concerning abatement of pollution from SMEs, the problem of insufficient investment has a number of causes: their capacity for environmental management is limited; institutional arrangements and financial mechanisms for SMEs need improvements; and SMEs face difficult challenges when trying to secure commercial financing for environmental protection.

In order to tackle the issue of insufficient investment and the related issue of low efficiency in both UEI and SMEs, it is necessary to create new financing mechanisms and to design an integrated strategy for them. The following aspects deserve attention:

- **In designing financial mechanisms for environmental protection, several principles should be kept in mind. The *polluter-pays principle* and the *user-pays principle* should be applied. Environmental goals should be stated clearly in financing arrangements and performance evaluated based on those goals. Efficiency of financing should be given a high priority. And issues of equity (i.e., between the rich and poor, between regions, etc.) and risk mitigation (e.g., protection of investors and lenders) should be taken into account.**
- **The responsibilities and roles of stakeholders in environmental investment should be clearly defined and effectively applied. The Government should play a leading role in three aspects of environmental investment: (a) increase the actual demand for environmental investment by strengthening environmental laws and regulations based on enforcement and the polluter-pays principle; (b) raise the level of budgetary investment; and (c) design enabling policies (especially, for enforcement of pollution levies, and user charges) to help raise funds from the market.**
- **The Government of China should encourage new investors (i.e., other than governments and polluters) to participate in environmental investments and in initiatives to develop mechanisms for commercial financing.**

1. Improvement of effective multiple channels of financing mechanisms for UEI

In future, local governments and enterprises should be major financiers for the construction of UEI. The Task Force places emphasis on the establishment and improvement of multiple channels of financing mechanisms.

1.1 Commercial financing: Improve the relevant policies to make full use of multiple channels of commercial financing (bonds, trust investment funds, and loans authorized by single or multiple banks, etc.), to raise funds from the market.

Among the existing tools for multiple channels of commercial financing, bank credits and corporate bonds are the two most important. Policies should be reformed to increase their use.

Bank credits from the market plays a key role in China's financial system, accounting for 90% of the country's total financing volume. The Government should pave the way to use bank credit for financing the construction of UEI. In addition, governmental policies for supporting environmental protection should be designed with consideration given to factors related to risk management for bank credit. Recommendations in this regard are provided below:

- (1) Implement fee-backed collateral system for environmental project to reduce loan-lending risks.
- (2) Promote the package loan-lending system. Taking advantage of a package loan-lending for the combination of different infrastructural projects, city government can integrate sewage treatment and municipal solid waste disposal projects into the a given master plan for the construction of urban infrastructure construction and select appropriate borrowers for urban infrastructural projects including UEI to get commercial bank loans.
- (3) Implement the system of minimal creditable fund requirement for environmental projects, and attract funds from the commercial banks, in line with the national reform of financing system and on the basis of promoting the system of project ownership, and the concession of relevant facilities for management.
- (4) Expand decision-making authority on loans at the branch level of commercial banks in large cities.
- (5) Include more environmental projects in comprehensive urban development programs financed by the National Development Bank.
- (6) Make full use of the role of governmental investment in facilitating commercial bank financing. For example, a combination of governmental funds and commercial bank funds can improve the capacity of UEI projects to get commercial loans. In this way, governmental funds may be used as interest repayment and initial costs of UEI project.

Development of bond market and expansion of scale for corporate bond issuance will be pursued in compliance with "Decisions related to the socialist market economy system made by the Central Communist Party in China". In the process of the revision of the Ordinance for Corporate Bonds, the Government should design the policies necessary to facilitate the use of corporate bonds for financing the construction of urban infrastructure, including UEI. These policies should do the following:

- (1) Incorporate environmental projects into a bond issuance plan for comprehensive urban developments.
- (2) Select urban construction enterprises with high credibility and strong repayment capability as borrowers, according to relevant urban construction planning.
- (3) Grant the borrowers (enterprises) the right to develop other urban infrastructure projects (i.e., non-environmental projects) in conjunction with environmental projects, and allow them to use the profits gained from the non-environmental projects as a repayment source for loans borrowed for environmental projects, and offer preferential policies for land use and others for UEI projects.
- (4) Compensate for differences in interest rates between corporate bonds and treasury bonds by permitting the use of local governmental revenues from sources other than their fiscal budget.

By doing so, enterprises would be able to procure funds at relatively lower interest rates.

- (5) Develop the necessary conditions for the circulation of corporate bonds to be employed for urban infrastructure construction.
- (6) Take appropriate risk-mitigation measures to decrease financial risks, protect investors and lenders, and provide credit guarantees.

1.2 Municipal bonds: While making full use of various commercial financing channels to raise funds from the market, the Government of China should seriously consider the introduction of municipal bonds, serving as a new and important channel for financing UEI.

The existing multiple commercial financing channels and means could play an important role in raising funds for UEI construction; however, at the same time, their limitations should be recognized. Municipal bonds are a common method of financing UEI improvements in developed countries, and some local governments in China have already issued *de facto* municipal bonds. Municipal bonds and treasury bonds are two important tools that deserve consideration in the context of market-based policy reforms. In connection with the reform of Chinese treasury bond policy, introduction of municipal bond was recommended by relevant research organizations. For these reasons, the Government of China should seriously consider introducing municipal bonds to serve as a stable channel for financing.

For a number of reasons it has now become more feasible for local governments in China to issue municipal bonds. (1) Municipal bonds are consistent in nature with UEI, which is also for the public good. (2) Municipal bonds can enable local governments to fulfill their mandate to protect the environment while utilizing their financial resources responsibly. Moreover, if local governments could issue municipal bonds, this could reduce the dependency on national treasury bonds and the risk shouldered by the central government, since it would partly transfer the burden to local governments. (3) The use of municipal bonds could have a coordinating effect on financing channels for urban infrastructure construction, and thereby reduce the cost of financing. (4) The financial environment for issuing municipal bonds is well developed in China, if one considers that by the end of 2002, national savings reached almost 1 trillion RMB, a figure that would provide a relatively large pool of funds to purchase municipal bonds.

Under China's present fiscal system, it is not permitted to utilize local government finances directly as security for issuing municipal bonds. Instead, revenues from projects should be used as security, together with governmental support in repaying interest. It would be useful to learn from international experience in such arrangements. Also, it is necessary to study risk control systems for issuing municipal bonds. In particular, the Government should prevent local governments from transferring their debts or deficits to the central government.

Based on the above, the Task Force recommends that the State Council appoint ministries concerned with these matters to conduct comprehensive studies on schemes for introducing municipal bonds and the necessary supporting policies. The studies should result in a draft amendment of the regulation for approval by both the State Council and the National People's Congress. At the same time, there is a need for pilot cases of municipal bond issuance in order to gain information and experience that could later be applied more broadly. The volume and

applicable sectors for municipal bonds should undergo vigorous examination and approval by the central government.

2. Promoting a market-based approach to construction and operation of UEI

Based on the above discussion the task force makes a number of recommendations for financing of UEI.

2.1 The Government should play a lead role in construction of UEI, but market-based approaches should be applied to operations and maintenance of municipal wastewater treatment, as well as to the collection and transportation of municipal solid waste.

Market-based approaches to construction and operation of UEI should play an important role in ensuring efficiency of investments, and in attracting financing for UEI projects. In this context, the Government of China should actively promote the market-based approach. Besides acting as one of the direct investors, the Government should also create an enabling environment where market-based approaches are applied to UEI, regulate such an environment, and foster markets.

Backed by relatively strong enforcement of the "User Pays Policy" and capable local governments, many municipalities in eastern China already have the conditions where market-based models could be applied for municipal sewage treatment and the disposal of municipal solid waste. In contrast, in western China, where conditions are less advanced, market-based models need to be developed more gradually. Based on lessons learned from some successful cases, the following market-based models are recommended:

- (1) Government-affiliated businesses in charge of operating sewage facilities and solid waste disposal services should be transformed into independent corporations operating on commercial principles.
- (2) Existing and new facilities constructed by the government should be opened for contracts with such corporations. Alternatively the transfer-operate-transfer (TOT) model could be used to facilitate cost recovery.
- (3) In areas where conditions are met, new facilities could be constructed through the use of build-operate-transfer (BOT) or quasi-BOT models.

Because the conditions in western China are not yet ready for market-based approaches, corporatization/privatization of government-affiliated businesses can be prioritized as the first step. In cases where user charges are not sufficient to attract private funding, the Government could consider providing financial subsidies. It may be advantageous for the Government to first consider the use of a quasi-BOT model, and then gradually apply TOT and BOT models.

2.2 Unify existing policies and establish new policies to promote market-based approaches to urban wastewater treatment and municipal solid waste management.

Relevant ministries of China have published seven sets of guidelines in recent years on the application of market-based approaches to services in urban wastewater treatment and municipal solid waste collection and disposal. In regards to enforcement, these guidelines are not always effective, since they lack the power to bind and authorize, and sometimes they are mutually inconsistent. Local governments lack the motivation and incentives to enforce the guidelines, with the result that key policies (and the *user-pays principle*, for example) are sometimes not properly implemented. In the

field of urban wastewater treatment and solid waste management, the collection of user charges is insufficient and confined to limited areas. These factors are the main hindrance to market-based approaches. In addressing such issues as corporatization/privatization opening up the market, access for the private sector, user-charge policies and tax-breaks, it is suggested that the current relevant guidelines issued by relevant ministries should be brought together under an integrated governmental documents, which could be called the policies to promote market-based approaches to urban wastewater treatment and municipal solid waste management and be promulgated by the State Council. This ordinance should play a role in improving the authority and feasibility of enforcement in order to promote the application of market-based approaches. Priority should be given to establishing utilities as commercially-run, operationally autonomous institutions. Integrating water supply and sanitation in utilities could help to achieve additional efficiencies.

In addition, the central government should consider providing relevant knowledge and technologies to increase the capacity of local governments. It is also necessary to clarify the responsibilities of local governments in terms of providing supervision and relevant services. The responsibilities and capabilities of local governments for effective financial management must be established in order to enhance their credit-worthiness.

3. Improvement of supportive mechanisms for financing control of pollution from SMEs

International experience suggests that there are three groups of mechanisms that can be applied to finance control of pollution from SME: supportive mechanisms with funds provided by government, commercial mechanisms with funds raised from market, and the development of preferential policies.

As the next step, China should first start with supportive mechanisms for financing SMEs in pollution control. This conclusion is based on two reasons. First, until now, SMEs have been weak in terms of institutional arrangements and design of mechanisms for both environmental management and financing through commercial channels. In this regard, they need external assistance. The Government of China should therefore provide the support necessary for financing activities to control pollution from SMEs that are encouraged by national policies for industrial sector development and have good potential for the future. Governmental support for SMEs should conform with the *polluter-pays principle*. The second reason relates to a new law issued by the central government in 2003: the Promotion Law for SMEs and the Managerial Regulation of Pollution Levy. Encouraged by these changes, it has become easier to develop supportive mechanisms for financing SMEs in pollution control by making full use of the relevant financial mechanisms stipulated in the laws and the regulations. In the long term, introducing the market-based approach itself would be an effective approach to help resolve issues of financial mechanisms for SMEs and pollution abatement. Supportive measures by the central government would also have the inducement effect of attracting financing for SMEs from the market. Based on this background, the Task Force proposes four policy recommendations.

3.1 Establish special appropriations for control of pollution from SMEs under the "SME Development Fund" and the "Special Supportive Fund for SME Development."

Under the Promotion Law for SMEs, the central government is to establish an "SME Development Fund." The Task Force recommends taking advantage of this Fund, by establishing a *Special Fund for Financing SME Pollution Control*. The Special Fund could address sectoral needs, for example, by providing subsidies to relocate SMEs where it would be advantageous to have collective pollution

control, by providing low-interest loans for clean production and projects that control pollution from SMEs, and by providing loan guarantees to SMEs for pollution control.

In addition, under the Promotion Law for SMEs, the central government is to establish a *Special Supportive Fund for SME Development*, which will target software development, such as a system to serve SMEs, and complement the SME Development Fund. The Task Force's proposal is to establish a category called *Special Sub-Appropriations for SME Pollution Control* under the Special Supportive Fund. These appropriations could be used for purposes such as development of service systems for SME pollution control, studies on environmental management relating to SMEs, and technical guidance for SMEs.

3.2 Establish appropriations for SME pollution control under the Special Fund for Environmental Protection.

Under the newly established Ordinance for Collection, Utilization, and Managements of Pollution Fee, governments at all levels in China are to establish a Special Fund for Environmental Protection. Considering the urgent need for providing assistance to SMEs to finance pollution control, it is recommended that a category of *Appropriations for SME Pollution Control* be set up under these special funds. These appropriations should be focused on providing subsidies to SMEs or interest subsidies for SMEs.

3.3 Establish an organization to be in charge of both pollution treatment and financing.

This organization would manage funds and select SMEs to be financed, and provide evaluation, technological assistance and supervision on relevant matters. By doing so, efficient use of the funds would be ensured, while necessary services would be provided to SMEs.

3.4 Apply innovative approaches to utilize commercial bank credit

The use of commercial bank credit for control of pollution from individual SMEs may be uneconomical and risky due to the nature of these enterprises. The Task Force therefore recommends some innovative approaches. (1) Establish special investment companies for pollution abatement involving SMEs. These special investment companies would then apply for commercial bank loans and provide the funds to SMEs for pollution abatement. (2) An authority that collects pollution levies should provide guarantees for commercial bank loans to SMEs, in order to facilitate loan approval in the event SMEs apply directly for loans; (3) Utilize leases as one option for financing SMEs. Environmental companies in charge of abatement of pollution from SMEs could apply for lease financing from the special investment companies, to allow them to pay for pollution abatement facilities. This would help resolve the limitation that commercial banks prefer to offer only short-term financing to SMEs. (4) A consortium of SMEs can apply for issuing bonds or apply for bank loans for the construction of an industrial park which is installed with collective pollution abatement facilities.