I. Project Context

Country Context
Since its economic reform started in 1978, China’s economy has grown at a remarkably high rate of over 9 percent on average per year. The accompanying rise in income per capita has led to greater affluence and improved quality of life. The most recent census has revealed that approximately 50% of China’s population now lives in cities, compared to about 20% in the early 1980s. This rapid economic growth and urbanization, however, has led to low efficiency in natural resource utilization, serious pollution, declining environmental quality, and increasing environmental health problems.

In particular, municipal solid waste (MSW) is becoming a major concern for Chinese cities. Many Chinese cities are experiencing rapid increase in solid waste generation and increasing pressure for solid waste management (SWM). The National People’s Congress (NPC) passed the national Solid Waste Pollution Prevention and Control Law in 2004. Focusing on supervision, management and pollution prevention, this law regulates dumping, collection, transport, reuse/recycling and disposal of municipal solid waste.

Recognizing the limitations of its resource-intensive growth pattern, China has been exploring alternative approaches for solid waste management. The Chinese government has been promoting the concept of circular economy, an economic growth model designed to enhance resource efficiency and reduce pollution discharges through the adoption of the “reduce, reuse, and recycle (3R)” strategy. The China Circular Economy Promotion Law, promulgated by the NPC, became effective on January 1, 2009. It is the first such law in a developing country, and reflects the degree of concern of the Government of China, and its commitment to work towards more resource-efficient and environmentally sustainable growth.

II. Sectoral and Institutional Context

MSW management in China
The quantity of municipal solid waste collected and transported has increased more than five-fold nationwide from about 31 million tons in 1980 to about 157 million in 2009 and is projected to reach 585 million tons in 2030. No country has ever experienced such a large and rapid an increase in waste generation. Residential waste constitutes a large part of municipal solid waste (MSW) and has a complex composition which largely is not yet separated at the source in most urban areas. Management of this waste has enormous domestic and international implications. Based on current solid waste plans, China could face a tenfold increase in its country-wide waste management investment budget between 2010 and 2030 (rising from the current estimated budget of RMB50 billion to about RMB500 billion).

To control this large and growing problem, China urgently needs to make efforts to transition from its current, traditional MSW management practices to a modern model. Waste minimization and recycling measures have been recognized as a cost-effective approach in MSW management in China. China needs to move up the hierarchy of waste management, achieving more waste reduction, reuse, recycling, and recovery; and thus minimize the amount of waste that needs to be disposed. In fact, China is making considerable progress in containing and managing certain types of waste, such as industrial solid waste, hazardous waste, medical waste, and food waste from restaurants in urban areas. It has adopted a strategy of experimenting with improved domestic waste management through ‘pilot’ or ‘model’ cities. Although several cities are attempting to implement source separation, so far none have truly succeeded due to low public awareness and participation, and inadequate waste collection, transportation and treatment infrastructure.

Local Context in Ningbo
Ningbo Municipality is an important port city on the southeastern coast of China, about 300 km south of Shanghai. It comprises six central urban districts which form Ningbo City, in addition to five county-level cities and counties. In 2010, Ningbo City alone had a population of about 3.5 million, including registered urban population and a significant rural and migrant population. Ningbo’s GDP grew at an annual rate of 14% in the period of 2005-09. In 2009, the municipality’s GDP was over RMB 65,000 per capita (about US$10,000), much higher than the national average.
of $3,670. High-income coastal cities like Ningbo have some of the highest per capita waste generation rates in China.

Ningbo City produced 1.19 million tons of total MSW in 2009 (about 3260 tons per day). It has two incineration facilities with designed processing capacity of 1,600 tons per day and two sanitary landfill facilities with design capacity of 1,300 tons per day. The landfill operation has been evaluated by the Ministry of Housing and Urban and Rural Development as Class I standard because of good performance. The collected domestic waste from urban built areas in the six districts is 100% treated at existing landfill and incineration facilities. Ningbo has also placed special emphasis on the collection and treatment of industrial, restaurant, and medical waste, and could be considered advanced in China in this regard. In 2008, the rate of restaurant food waste collected and transported had reached 81%. There is a private sector treatment facility for treating the food waste from restaurants in Ningbo.

However, with the steady growth in Ningbo MSW, inadequate processing capacity is becoming a severe problem. According to a forecast from the “Ningbo 12th Five-Year Waste Disposal Facility Construction Plan”, the central city will generate 1.443 million tons of waste per year by 2015, with an expected shortage of processing capacity of 1000 tons per day (about 25% of the total).

Currently, no residential waste is separated prior to being incinerated or disposed in a landfill. According to a recent household survey 85.2% of Ningbo households indicated that they do not separate waste at home due to lack of knowledge on how to separate waste, lack of space for separating waste in their home, and a lack of appropriate separation, collection and treatment facilities.

Key issues in MSW management in Ningbo City, as identified by the municipal government and the Bank mission, include: (i) source separation and collection; (ii) waste minimization and utilization of recycling materials; and (iii) required institutional reforms. The City’s Five Year Plan emphasizes waste separation and minimization, material recycling, and environmental management of recyclable material processing, and institutional and capacity strengthening.

In the 12th Five Year Plan period (2011–2015), Ningbo seeks to promote the concept of an ‘intelligent city’, which encompasses science and technology, IT industries, innovation, entrepreneurship, higher education and higher standards of living. This project also fits well with this central theme, as it makes important contributions to further improving the living environment, making it a more attractive place to live for top talent, and making the investment environment more competitive.

In sum, MSW management is an increasingly important component in ensuring the environmental sustainability of China’s cities. Proper MSW management will generate substantial economic benefits, such as improving the environment and the quality of life, reducing exploitation of virgin materials and emissions of pollutants, both local and global, and improving the livelihoods of those employed in the material recycling sector. The results of this project in Ningbo will be valuable for replication in other cities in China.

III. Project Development Objectives
The project development objective (PDO) is to assist selected districts in Ningbo Municipality to increase the volume and proportion of municipal solid waste recycled with processes for waste separation at source and recycling.

IV. Project Description

Component Name
Component 1. Municipal Solid Waste Separation, Collection, Sorting and Transportation
Component 2. Kitchen Waste Treatment
Component 3. Project Implementation Support
Component 4. Capacity Building and Project Management Support

V. Financing (in USD Million)

<table>
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<th>For Loans/Credits/Others</th>
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<td>Total</td>
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VI. Implementation

A. Institutional and Implementation Arrangements

Institutional Arrangements

The Project Leading Group (PLG) has been established and is headed by the Executive Vice Mayor of Ningbo Municipality, with the Vice Mayor in charge of urban construction and sanitation as the deputy head. The PLG including representatives from over 10 municipal government agencies and 8 districts, and will make key decisions needed and give guidance to project preparation and implementation.

The existing Ningbo Municipal Water and Environment Project Management Office will continue to serve as Municipal PMO (NMPMO) for this project and take responsibilities for overall project management, coordination and monitoring. The NMPMO has extensive experience with Bank-financed operations, including the Ningbo Water and Environment Project, the GEF Ningbo Water and Environment Project, and the Ningbo New Countryside Development Project. The NMPMO will continue to provide technical support to the project in the areas of procurement, financial management, safeguards, project reporting, monitoring and evaluation.

The Ningbo Domestic Solid Waste Separation and Reuse Project Management Office (SWPMO) housed within the City Administration Bureau
(CAB), is newly established and dedicated to the implementation of the MSWM-related activities. SWPMO will provide policy and technical guidance to the districts for implementation of the project. SWPMO will be responsible for the construction and operation of the facilities for sorting recyclable materials and treating household kitchen waste, including marketing for sorted recyclable materials. SWPMO will also be responsible for coordinating and implementing the output-based incentive payment programs, specifically for collecting the necessary data for verification of the separated waste for item (i) of Component 3. At the district level, Project Implementing Units (PIUs) are established for the implementation of the respective activities within each district. The waste separation, transportation, and transfer assets created under the project will be owned, operated and maintained by the respective district-level governments.

A very similar institutional mechanism for implementation and coordination has been proven as an effective arrangement in previous Bank-funded projects in Ningbo, such as the Ningbo New Countryside Development Project.

Implementation Arrangements

Detailed Design Preparation and Design Reviews. NMPMO has organized design review and advisory services to provide advice and guidance; to review FS preparation; and to prepare various standard documents that will be used during implementation. SWPMO will employ experienced design institutes (DIs) to prepare detailed plans and a bidding document (which will include technical specifications and bill of quantities). Implementation support under the project will provide services for review of detailed designs, technical specifications, bills of quantities and bid documents.

Construction Supervision and Safeguard Monitoring. SWPMO and PIUs will employ experienced domestic supervision companies for construction of project components. NMPMO and SWPMO will organize PIUs to engage a consultant to carry out independent external monitoring of safeguards implementation and to provide semi-annual reports.

Project Management, Implementation, and Capacity Building Support. International and national consultants and facilitators will be retained to provide design review services, capacity building, project management and implementation support to NMPMO, SWPMO, PIUs in each district and the communities, as well as to conduct training and to guide study tours for project staff.

Procurement. SWPMO and PIUs will be responsible for carrying out the procurement of works and goods under their respective components with the assistance of a procurement agent. Procurement of relevant services will be undertaken by the NMPMO and SWPMO. NMPMO is an existing PMO and has experience with three Bank-financed projects. NMPMO will be responsible for monitoring the procurement activities and providing support and assistance to SWPMO and PIUs to ensure both the overall quality of the procurement under the project and overall compliance with the Bank’s Procurement Guidelines.

Fund Flow. The US$80 million Bank loan to the People’s Republic of China will be on-lent to Ningbo Municipal Government (NMG). The designated account (DA) will be managed by the Ningbo Municipal Finance Bureau (NMFB).

Resettlement Compensation Funds. The municipal Finance Bureaus will allocate funds to the resettlement implementing agencies according to progress in implementation. The resettlement implementing agency will disburse the funds to affected persons in accordance with the Resettlement Action Plan (RAP). All resettlement expenditures will be financed from counterpart funds.

B. Results Monitoring and Evaluation

The primary tool for monitoring and evaluation (M&E) is the Results Framework. Data for monitoring will come from the participating districts and the waste treatment facilities. The project has provisions to develop a solid waste management information system (SW-MIS). Data will be collected by the SWPMO, which maintains the database for the SW-MIS. Reliability of data collected will be assured with the support of the consultant that will develop, and assist in the data entry and maintenance functions of the SW-MIS. The incremental cost of the project M&E arrangements will be assumed by CAB with financial support from Ningbo Municipality.

C. Sustainability

The project will support and facilitate China’s sustainable development plans as expressed in the current 12th Five-Year Plan, which explicitly requires for improvement of solid waste management.

A particularly strong Project Leading Group headed by the executive vice mayor and joined by all key municipal government agencies and participating districts has been established for the project, which will help to ensure successful implementation and sustainability of the project.

The project also incorporates a continuous public information campaign aimed to encourage residents to participate in waste separation. In addition, the Ningbo Municipal Government has committed to provide adequate financial support for capital and recurrent expenditure requirements.

To ensure sustainable household participation in waste separation, the project will incentivize stakeholders at the neighborhood level to undertake in solid waste separation through an output-based neighborhood incentive payment program. A system of community supervisors and volunteers will be established to supervise and monitor solid waste separation.

VII. Safeguard Policies (including public consultation)

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<tr>
<td>Environmental Assessment OP/BP 4.01</td>
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VIII. Contact point

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