



# Technical Assistance Report

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Project Number: 48443  
Project Preparatory Technical Assistance (PPTA)  
July 2015

**People's Republic of China: Preparing the Hunan  
Xiangjiang River Watershed Existing Solid Waste  
Comprehensive Treatment Project**  
(Cofinanced by the Urban Environmental Infrastructure Fund  
under the Urban Financing Partnership Facility)

Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 30 June 2015)

Currency unit	–	yuan (CNY)
CNY1.00	=	\$0.1611
\$1.00	=	CNY6.209

## ABBREVIATIONS

ADB	–	Asian Development Bank
PPP	–	public-private partnership
PPTA	–	project preparatory technical assistance
PRC	–	People's Republic of China

## NOTE

In this report, "\$" refers to US dollars.

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## PROJECT PREPARATORY TECHNICAL ASSISTANCE

### A. Justification

1. The project preparatory technical assistance (PPTA) comprising of two specialized teams of experts is needed to define the scope and to conduct required due diligence of the project. The objectives of the technical assistance are to (i) design a project suitable for Asian Development Bank (ADB) financing by identifying the most appropriate project components and financial modalities to achieve the desired project impact; (ii) design the project to attract private sector participation and leverage effectiveness of the project; (iii) review proposed project components based on detailed due diligence assessment of technical, economic and financial, governance, safeguards, poverty and social, and project risks; (iv) provide trainings to the executing and implementing agencies and other relevant stakeholders to increase institutional capacity on project development and implementation procedures; and (v) formulate measures to ensure long-term sustainability of project facilities by improving the management and governance capacity of executing and implementing agencies.

### B. Major Outputs and Activities

2. The PPTA will be implemented in two phases. A team of individual experts will conduct the first phase to work on the project design including appropriate schemes for public-private partnership (PPP). The project design team will include technical experts on municipal solid waste management, landfill management and leachate treatment, and soil pollution control and brownfield development, and PPP. The team will assist the government and ADB identify appropriate technologies, approaches, and financial plans. Based on the technical design, the team will also identify the most appropriate project financial structure, modality, and institutional arrangement for private sector participation. The scope of analysis includes feasibility assessments to attract private sector financing to cover a part of the project scope to leverage ADB and government domestic counterpart funds, and identify ADB financial modalities suitable for the project design. Based on the team's outputs, composition of experts and terms of reference for the second phase consultant team will be determined.

3. A consulting firm will implement the second phase to conduct due diligence assessments on financial, economic, environment, land acquisition and resettlement, social and gender development, governance, public finance, and procurement. The project due diligence team will deliver capacity building trainings on project design and project performance and monitoring system, ADB's safeguards policy, and ADB's disbursement and procurement policies and guidelines. The major outputs and activities of the PPTA are summarized in Table A3.1.

**Table A3.1: Summary of Major Outputs and Activities**

Major Activities	Expected Completion Date	Major Outputs	Expected Completion Date
<b>Project design team</b>			
PPP assessment	30 Oct 2015	Inception report	31 Aug 2015
Technical assessment	30 Oct 2015	Project technical design report	31 Dec 2015
<b>Project due diligence team</b>			
ADB's safeguards policy training	31 Dec 2016	Draft project safeguards documents, FMA,	30 Jun 2016
ADB's disbursement and procurement training	31 Dec 2016	GAP, PCA, and SDAP Final report	31 Dec 2016

ADB = Asian Development Bank, FMA = financial management assessment, GAP = gender action plan, PCA = procurement capacity assessment, PPP = public-private partnership, SDAP = social development action plan.

Source: Asian Development Bank.

### C. Cost Estimate and Proposed Financing Arrangement

4. The PPTA will be financed on a grant basis for \$700,000 from ADB's Technical Assistance Special Fund (TASF-other sources) and \$225,000 from Urban Environmental Infrastructure Fund under the Urban Financing Partnership Facility.<sup>1</sup> The government will provide counterpart support in the form of counterpart staff, office accommodation, draft domestic environmental impact assessments, draft domestic feasibility reports, and draft resettlement plans. The counterpart support is estimated to be approximately 10% of the total TA amount. Amount of \$170,000 is allocated for the landfill risk assessment. The detailed cost estimate is in Table A3.2.

**Table A3.2: Cost Estimates and Financing Plan**  
(\$'000)

Item	Total Cost
<b>Asian Development Bank<sup>a</sup></b>	
1. Consultants	
a. Remuneration and per diem	
i. International consultants (18 person-months)	414.0
ii. National consultants (24 person-months)	168.0
b. International and local travel	63.0
c. Reports and communications	4.0
2. Equipment <sup>b</sup>	6.0
3. Workshops and training <sup>c</sup>	5.0
4. Surveys	205.0
5. Miscellaneous administration and support costs	5.0
6. Representative for contract negotiations	5.0
7. Contingencies	50.0
<b>Total</b>	<b>925.0</b>

<sup>a</sup> Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF-other sources) and Urban Environmental Infrastructure Fund under the Urban Financing Partnership Facility.

<sup>b</sup> Equipment will be turned over to the executing agency upon completion of technical assistance activities.

Type	Quantity	Cost
Computer	2 laptops, 1 desktop	\$3,000
Printer and photocopier	1	\$3,000

<sup>c</sup> Workshops and training

Purpose	Venue
ADB project design workshops, safeguards and social development trainings, project financial management, disbursement, and procurement trainings and other project-related trainings.	Changsha, Hunan province

Source: Asian Development Bank estimates.

### D. Consulting Services

5. The PPTA will have two consulting service packages: a team of individual consultants for project design and a consulting firm for project due diligence. The total inputs of the project design team will be 4 international consultants, with a total of 8 person-months; and 4 national consultants with a total of 11 person-months. The composition of the project due diligence consulting firm will be determined based on the outputs of the project design team (Table A3.3). The project design team will be engaged through individual consultant selection, while the project due diligence consulting firm will be engaged on the basis of quality- and cost-based selection method, with a quality-cost ratio of 90:10, using simplified technical proposal procedures. Recruitment of consulting services and procurement of equipment under the PPTA will be carried out in accordance with ADB's Guidelines on the Use of Consultants (2013, as

<sup>1</sup> Financing partner: the Government of Sweden.

amended from time to time) and ADB's Procurement Guidelines (2015, as amended from time to time), respectively. The outline terms of reference are described in paras. 6 to 10.

**Table A3.3: Summary of Consulting Services Requirement**

<b>International Experts</b>	<b>Person-months</b>	<b>National Experts</b>	<b>Person-months</b>
<b>Project Design Team</b>			
Municipal solid waste management specialist	2	Municipal solid waste management specialist	3
Public-private partnership specialist	2	Public-private partnership specialist	2
Soil pollution control and brownfield development specialist	2	Soil pollution control and brownfield development specialist	3
Landfill and leachate management specialist	2	Landfill and leachate management specialist	3
<b>Project Due Diligence Team</b>			
To be determined	10	To be determined	13

Source: Asian Development Bank.

## 1. Project Design Team<sup>2</sup>

6. **Municipal solid waste management specialists** (international, 2 person-months; national, 3 person-months). Municipal solid waste management specialists should have relevant degrees in environmental engineering with work experience in formulating solid waste management plan and strategy based on detailed technical assessment of waste generation, collection, sorting and recycling, transportation, and disposal. Knowledge and experience in the People's Republic of China (PRC) is preferable. The specialists will take a lead role in the project design team. Based on the landfill risk assessment and realistic future waste generation projections, the specialists will lead selection of appropriate project scope to assess necessity and urgency of the project, identify regional solid waste management strategy and simulate technically and financially viable management system at regional, municipal, and county levels in Xiangjiang River basin. Where appropriate, a river basin wide strategic solid waste management master plan, nexus of wastewater, flood management, and solid waste management will be explored to propose the integrated solution for Xiangjiang River basin.

7. **PPP specialists** (international, 2 person-months; national, 2 person-months). PPP specialists should have relevant degrees in finance, business administration, and public management with work experience in public infrastructure PPP project. Knowledge and experience in PPP structuring in the PRC is preferable. The specialists will work closely with other technical experts on solid waste management, soil pollution control and brownfield development, wastewater pollution control, and waste-to-energy technologies; and identify the most appropriate project financial structure, modality, and institutional arrangements.

8. **Soil pollution control and brownfield development specialists** (international, 2 person-months; national, 3 person-months). Soil pollution control and brownfield development specialists should have degrees in environmental engineering, chemical engineering, or biological and environmental science with work experience in cleaning up land contaminated sites and brownfield development. Knowledge and experience in the PRC is preferable. The specialists will review and assess the applicability of commercial technologies and approaches and international good practices to find solutions for the contaminated sites and its redevelopment potential including appropriate and beneficial land use options.

<sup>2</sup> A waste-to-energy consultant will be separately engaged to assist the project. Once appropriate PPP structures are identified by the PPP specialists, another fund from ADB will be applied to provide PPP advisory service, consisting legal and financial experts for contractual support.

9. **Landfill and leachate management specialists** (international, 2 person-months; national, 3 person-months). Landfill and leachate management specialists should have relevant degrees in environmental engineering, sanitation engineering, chemical engineering, or biological and environmental science with work experience in landfill stabilization, leachate treatment, and landfill mining. Knowledge and experience in the PRC is preferable. The specialists will review and assess technical feasibility and effectiveness of current PRC approaches on on-site landfill closure and their leachate treatment, and identify appropriate landfill stabilization measures and leachate treatment process to contain pollution.

## 2. Project Due Diligence Team

10. **Various specialists** (international, 10 person-months; national, 13 person-months). Project due diligence team composition and terms of reference will be finalized based on the outputs of the project design team because areas and degrees of due diligence requirements are closely related to selected ADB financial modality, PPP scheme, and technical designs. The project due diligence team's scope of work will generally include due diligence assessments on financial analysis and management, economic, environment, land acquisition and resettlement, indigenous peoples, social and gender development, governance, public finance and procurement including procurement risk assessment with preparation of a risk assessment and management plan.

## E. Implementation Arrangements

11. The project design team will be mobilized for nine months from August 2015 to April 2016. The project due diligence team will prepare the project over 12 months, from January 2016 to December 2016 and will be financially closed in March 2017. Hunan Provincial Housing and Urban–Rural Development Department will be the executing agency. In-kind contributions from Hunan Provincial Housing and Urban–Rural Development Department will include (i) office accommodation, (ii) local counterpart support staff, and (iii) draft environmental impact assessments, feasibility reports, and resettlement plans to the consulting firm. Workshops and training will be administered by the consulting firm. Technical assistance funds will be disbursed in accordance with ADB's *Technical Assistance Disbursement Handbook* (2010, as amended from time to time). The proposed PPTA implementation schedule is in Table A3.4.

**Table A3.4: Technical Assistance Processing and Implementation Schedule**

Major Milestones	Expected Completion Date
<b>Project design team</b>	
Commencement of specialized studies	1 Aug 2015
Inception report	31 Aug 2015
Project technical design report	31 Dec 2015
<b>Project due diligence team</b>	
Commencement of work	1 Jan 2016
Inception report submission	31 Jan 2016
Draft final report submission	30 Apr 2016
Final tripartite meeting (loan fact-finding mission)	31 May 2016
Final report submission	31 Dec 2016
Financial closure of the project preparatory technical assistance	31 Mar 2017

Source: Asian Development Bank.