ADB

Technical Assistance Report

Project Number: 50096-003
Capacity Development Technical Assistance (CDTA)
November 2016

People's Republic of China: Strengthening Capacity in the Implementation of the Green Financing Platform for the Greater Beijing–Tianjin–Hebei Region

(Financed by the Clean Energy Fund under the Clean Energy Financing Partnership Facility)

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 1 November 2016)

Currency unit	–	yuan (CNY)
CNY1.00	=	$.1478
$1.00	=	CNY6.7662

ABBREVIATIONS

ADB	–	Asian Development Bank
BTH	–	Beijing–Tianjin–Hebei
CAP	–	corrective action plan
EHS	–	environmental, health, and safety
EIA	–	environmental initial assessment
EMP	–	environmental management plan
EMoP	–	environmental monitoring plan
ESMS	–	environmental and social management system
GFP	–	green financing platform
GRM	–	grievance redress mechanism
IEE	–	initial environmental examination
I&G	–	China National Investment and Guaranty Corporation
PRC	–	People's Republic of China
SMEs	–	small and medium-sized enterprises
TA	–	technical assistance
USEPA	–	United States Environmental Protection Agency Cooperation

NOTE

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

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CAPACITY DEVELOPMENT TECHNICAL ASSISTANCE AT A GLANCE

1. Basic Data — **Project Number:** 50096-003

Project Name	Strengthening Capacity in the Implementation of the Green Financing Platform for the Greater Beijing–Tianjin –Hebei Region	**Department /Division**	EARD/EAEN
Country	China, People's Republic of	**Executing Agency**	China National Investment and Guaranty Corporation

2. Sector

	Sector	Subsector(s)	Financing ($ million)
✓	Finance	Banking systems and nonbank financial institutions	0.50
	Energy	Energy efficiency and conservation	0.20
		Renewable energy generation - biomass and waste	0.20
	Transport	Urban public transport	0.10
		Total	**1.00**

3. Strategic Agenda

Strategic Agenda	Subcomponents
Inclusive economic growth (IEG)	Pillar 1: Economic opportunities, including jobs, created and expanded
Environmentally sustainable growth (ESG)	Global and regional transboundary environmental concerns Natural resources conservation Urban environmental improvement

Climate Change Information

Mitigation ($ million)	1.00
CO_2 reduction (tons per annum)	5,000,000
Climate Change impact on the Project	Medium

4. Drivers of Change

Drivers of Change	Components
Governance and capacity development (GCD)	Client relations, network, and partnership development to partnership driver of change Institutional development Organizational development
Knowledge solutions (KNS)	Application and use of new knowledge solutions in key operational areas Knowledge sharing activities Pilot-testing innovation and learning
Partnerships (PAR)	Foundations Implementation Official cofinancing Private Sector
Private sector development (PSD)	Promotion of private sector investment

Gender Equity and Mainstreaming

No gender elements (NGE) ✓

5. Poverty and SDG Targeting

Geographic Targeting	Yes
Household Targeting	No
SDG Targeting	Yes
SDG Goals	SDG3

Location Impact

Not Applicable

6. TA Category: B

7. Safeguard Categorization Not Applicable

8. Financing

Modality and Sources	Amount ($ million)
ADB	**0.00**
None	0.00
Cofinancing	**1.00**
Clean Energy Fund under the Clean Energy Financing Partnership Facility	1.00
Counterpart	**0.15**
Project Sponsor	0.15
Total	**1.15**

9. Effective Development Cooperation

Use of country procurement systems	No
Use of country public financial management systems	No

I. INTRODUCTION

1. The Government of the People's Republic of China (PRC) requested capacity development technical assistance (TA) from the Asian Development Bank (ADB) for Strengthening Capacity in the Implementation of the Green Financing Platform for the Greater Beijing–Tianjin–Hebei Region. The TA is not included in the country operations business plan. During the fact-finding mission in November 2016, an agreement was reached with the government on the impact, outcome, outputs, terms of reference for consultants, cost estimates, financing plan, and implementation arrangements. The TA design and monitoring framework is in Appendix 1.[1]

II. ISSUES

2. The greater Beijing–Tianjin–Hebei (BTH) region is one of the most important economic regions in the PRC,[2] generating more than a third of the country's gross domestic product.[3] But this region also consistently experiences poor air quality because it largely relies on energy-intensive enterprises, coal-based power generation, and a large number of diesel and gasoline-fueled automobiles. The government is striving to improve the air quality and has issued stricter environmental regulations and a target to reduce the average concentration of most hazardous air-polluting fine particulate matter. As enterprises modernize and upgrade their production facilities to meet stricter environmental regulations and reduce emissions, they must make capital expenditures that may not lead to additional revenue. New business models for such investments are needed, which require deep understanding of technical and financial issues associated with diverse sets of enterprises. Moreover, reducing the region's use of coal requires rapid low-carbon (such as natural gas) and renewable energy development, which is capital intensive.[4] The region needs the right policies and tighter regulations to spur demand, state-of-the-art technologies, and tailored financial instruments and financing. More importantly, the region needs an extensive outreach program to stimulate behavioral changes.

3. In 2013, the State Council issued the Action Plan on Prevention and Control of Air Pollution, 2013–2017.[5] To support the government's effort for air pollution reduction by building a comprehensive policy framework and promoting coordinated actions and investments, ADB approved the first policy-based loan in Hebei.[6] Given the challenges to improve the air quality in the BTH region, ADB and the government have agreed in principle on a multiyear lending support program through $2.5 billion in project loans spread over 2016–2020. In 2016, ADB is processing a loan for Air Quality Improvement in the Greater Beijing–Tianjin–Hebei Region under the Green Financing Platform Project of China National Investment and Guaranty Corporation (I&G), which will set up a dedicated green financing platform (GFP) for the BTH

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[1] The TA first appeared in the business opportunities section of ADB's website on 8 November 2016.

[2] The greater BTH region includes Beijing and Tianjin municipalities; Hebei, Henan, Shandong, Shanxi, and Liaoning provinces; and the Inner Mongolia Autonomous Region.

[3] While the core BTH region of Beijing and Tianjin municipalities and Hebei Province accounts for nearly 10% of the PRC's gross domestic product, the greater BTH region accounts for more than 34% of national gross domestic product (CNY22 trillion in 2014).

[4] Based on a report prepared by the Clean Air Alliance of China, the implementation of the Comprehensive Action Plan for Air Pollution Prevention and Control for the core BTH region will need direct investment of $37.8 billion. However, the dedicated financial support from the central government was only $0.76 billion in 2013 and $1.52 billion in 2014.

[5] Government of the PRC. 2013. *Action Plan on Prevention and Control of Air Pollution, 2013–2017*. Beijing.

[6] ADB. 2015. *Report and Recommendation of the President to the Board of Directors: Proposed Beijing–Tianjin–Hebei Air Quality Improvement–Hebei Policy Reforms Program.* Manila. The policy-based loan was fully disbursed in June 2016 and all policy actions under the loan have been implemented.

region that (i) will serve diverse needs of small and medium-sized enterprises (SMEs) and large enterprises across agriculture, energy, transport, and urban sectors; (ii) has seamless reach across the BTH region; and (iii) has the appropriate suite of lending instruments to support a large number of modest but scattered investments. The proposed GFP will be an open platform in which commercial banks, other development partners, and agencies can participate. Given the lack of capacity to appraise green investments, the participation of commercial banks and financial institutions in financing green investments, especially those by SMEs, is limited. The proposed loan targets SMEs, the economic actors with the most financing needs, in polluting industries. The financial intermediation loan modality will be adopted for this proposed loan. The combination of this modality and the regional approach will help determine viable projects in an economically and environmentally critical region of the PRC.

4. However, such an approach over a wide region and across all key sectors involves risks such as (i) failure to combine suitable technical and safeguard expertise over a broad range of projects to appraise them appropriately; (ii) weak arrangements for connecting potential end users to the platform in an efficient way, undermining demand from the platform; and (iii) inadequate monitoring and verification arrangements to evaluate the environmental and energy-efficient performance of a large number of projects. In view of these potential risks, the government requested ADB to strengthen capacity so that these risks can be sufficiently mitigated and the effectiveness of the GFP will be enhanced. The TA is particularly designed to strengthen the implementation of the GFP, mitigate the demand-side risks, and ensure the best impact of the proposed loan. The TA aims to (i) improve the reach of the GFP to potential borrowers; (ii) increase readiness of the subprojects, especially those involving advanced technology; (iii) design and develop an online application and data collection platform for potential subprojects; and (iv) improve the capacity of the executing and implementing agencies, participating banks and financial institutions, and subborrowers.

5. The TA is well aligned with the priority of the country partnership strategy, 2016–2020, to manage climate change and the environment to help the government achieve an ecological civilization.[7] The TA is also fully aligned with the government's Comprehensive Action Plan for Air Pollution Prevention and Control and the Thirteenth Five-Year Plan for clean and low-carbon development in the BTH region, and fills a critical gap. It will directly help realize the 13th plan's goal of improving air quality.[8]

III. THE CAPACITY DEVELOPMENT TECHNICAL ASSISTANCE

6. The proposed TA will help improve the capacity of I&G and other financial institutions in energy management, emission monitoring and verification, establishment of energy consumption baselines, verification of energy savings, compliance with environmental and social safeguards, project appraisal in economic terms, and project development in the BTH region. It will also build ADB's practical knowledge in the emerging area of green development financing and will assist other developing member countries.

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[7] ADB. 2016. *Country Partnership Strategy: Transforming Partnership: People's Republic of China and Asian Development Bank, 2016–2020.* Manila.

[8] Government of the PRC. 2016. *Thirteenth Five-Year Plan, 2016–2020.* Beijing. The 13th plan requires cities to meet "good" or "excellent" standards 80% of the time (meaning they must score below 100 on China's Air Quality Index of 0–500). The 80% target is additional to a target to reduce by 25% the number of polluted days, and to reduce by 18% the number of days when fine particulate matter exceeds allowable limits.

A. Impact and Outcome

7. The impact will be that GFP-based air quality improvements in the BTH region are accelerated. The outcome will be sustainably expanded use of the GFP by all key sectors and segments.

B. Methodology and Key Activities

8. The outcome will be achieved through the following outputs:
   (i) online application and data collection platform for the developers of potential subprojects implemented to improve the reach of the GFP to potential borrowers;
   (ii) readiness of the subprojects increased through better knowledge dissemination and information sharing; and
   (iii) subproject developers' capacity in preparing bankable projects strengthened to assess and appraise subprojects meeting ADB and national requirements, and verification and reporting on environmental performance of subprojects.

9. Key activities under the TA are:
   (i) develop and build an online application and data collection platform that will allow the GFP to become a one-stop, user-friendly knowledge and investment platform;
   (ii) strengthen the institutional capacity of relevant agencies and entities, including the executing agency, other financial institutions, and project developer and owners;
   (iii) organize knowledge sharing and information dissemination through workshops and conferences;
   (iv) improve subprojects' readiness, especially those using advanced technologies; and
   (v) publish knowledge products and provide services to developing member countries on green financing, low-carbon technologies, and business models.

10. Major risks are that (i) the economic slowdown curbs the appetite for green investments, (ii) weak demand from subborrowers may slow implementation, and (iii) the capacity of the GFP to reach out and appraise subprojects is weak and undermines results. To mitigate those risks, capacity development training and workshops in project management and implementation will be organized, and close coordination and monitoring between ADB and the executing agency will be established.

C. Cost and Financing

11. The TA is estimated to cost $1,150,000, of which $1,000,000 will be financed on a grant basis by the Clean Energy Fund[9] under the Clean Energy Financing Partnership Facility and administered by ADB. The government will provide counterpart support in the form of counterpart staff, office accommodation, office supplies, information and support needed for the TA, and other in-kind contributions. The cost estimate and financing plan is in Appendix 2.

D. Implementation Arrangements

12. I&G will be the executing and implementing agency. The TA will be implemented over 36 months, from 1 December 2016 to 30 November 2019. The TA will place experts with

[9] Financing partners: the governments of Australia, Norway, Spain, Sweden, and the United Kingdom.

technical and safeguard expertise to supplement I&G's capacity and guide the appraisal of first batch of subprojects financed under the GFP, which will help I&G better understand practical implementation of ADB's safeguard requirements and strengthen their capacity. The TA will require 10 person-months of inputs from international consultants in technology selection and environmental assessments, and 39 person-months of inputs from national consultants to provide technical support in energy efficiency, renewable energy, agricultural waste utilization, environmental assessment, energy performance monitoring and verification, and how to manage foreign exchange risks for I&G. The outline terms of reference for the consultants are in Appendix 3.

13. The innovative nature of the GFP calls for highly qualified and specialized technical experts with knowledge and experience relevant to the subprojects to be financed. These consultants will be recruited individually in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). Lump-sum payments and output-based contracts will be considered under the TA where applicable. Disbursements under the TA will be in accordance with the *Technical Assistance Disbursement Handbook* (2010, as amended from time to time).

14. The online application and data collection platform is a key component of the TA deliverables. However, its details will not be finalized until the early stage of TA implementation, in extensive consultation with the executing agency and ADB, whereupon a suitable agency will be selected to design, manage, and implement it before 30 November 2019. The selection of the IT agency will be subject to ADB approval. I&G staff will be trained on how to maintain the platform, which will be owned and managed by I&G after closure of the TA.

15. The TA can benefit from the ongoing capacity development TA for support of ADB–United States Environmental Protection Agency Cooperation (USEPA), which includes an indicative activity relating to air quality management for the BTH region in the PRC. [10] The USEPA experts can contribute to the proposed capacity development TA through their ongoing TA. The Environment and Safeguards Division of Sustainable Development and Climate Change Department will provide necessary support for cooperation with USEPA.

16. The TA will be monitored through the consultants' progress reports and ADB review missions. During the missions, discussions will be held to review the performance of the consultants, TA implementation progress, and the completion of deliverables based on the design and monitoring framework and on an agreed work plan for the consultants. The deliverables submitted by the consultants will be reviewed by the executing and implementing agency as well as ADB. The performance of the TA, including its outputs and outcomes, will be evaluated during the final review mission.

IV. THE PRESIDENT'S DECISION

17. The President, acting under the authority delegated by the Board, has approved ADB administering technical assistance not exceeding the equivalent of $1,000,000 to the Government of the People's Republic of China to be financed on a grant basis by the Clean Energy Fund under the Clean Energy Financing Partnership Facility for Strengthening Capacity in the Implementation of the Green Financing Platform for the Greater Beijing–Tianjin–Hebei Region, and hereby reports this action to the Board.

[10] ADB. 2015. *Technical Assistance for the Support of ADB–US Environmental Protection Agency Cooperation.* Manila.

DESIGN AND MONITORING FRAMEWORK

Impact the TA is Aligned with
Air quality improvements based on a green financing platform in the BTH region accelerated (Comprehensive Action Plan for Air Pollution Prevention and Control of the PRC and Thirteenth Five-Year Plan)[a]

Results Chain	**Performance Indicators with Targets and Baselines**	**Data Sources and Reporting Mechanisms**	**Risks**
Outcome Use of green financing platform by all key sectors and segments sustainably expanded	By 2023, a. The investment in pollution reduction doubles from 2016 levels in the BTH region (2015 baseline: CNY15 billion) b. Annual concentration of $PM_{2.5}$ is reduced by 25%, SO_2 and NOx are reduced by 15% in the BTH region. (Baseline 2015: $PM_{2.5}$ is 66.1 μg/m^3, SO_2 is 7.83 million tons, and NO_x is 8.19 million tons)	a–b. Beijing and Tianjin municipalities; Hebei, Henan, Shandong, Shanxi and Liaoning provinces; and Inner Mongolia Autonomous Region annual yearbooks	The economic slowdown curbs the appetite for green investments. Weak demand from subborrowers may slow implementation.
Outputs 1. Online application and data collection platform for the developers of potential subprojects implemented	By 2019, 1a. At least 50 online applications submitted from potential subborrowers (2015 baseline: 0)	1a. TA completion report	Weak capacity of the GFP to reach out and appraise subprojects undermines results.
2. Readiness of the subprojects increased	2a. At least 40 investment projects appraised (2015 baseline: 0) 2b. At least one knowledge product published (2015 baseline: 0)	2a–2b. TA completion report	
3. Subproject developers' capacity in preparing bankable projects strengthened	3a. Five workshops for 100 participants organized on project appraisal and management (2015 baseline: 0) 3b. 50 people trained on energy management (2015 baseline: 0)	3a–3b. TA completion report	

Key Activities with Milestones

Output 1: Online application and data collection platform for the developers of potential subprojects implemented to improve the reach of the GFP to potential borrowers

1.1 Develop and build online application and data collection platform that will allow the GFP to become a one-stop, user-friendly knowledge and investment platform (January to December 2017).
1.2 Maintain the online platform (January 2018 to November 2019).

Output 2: Readiness of the subprojects increased

2.1 Conduct environmental and social screening and categorization of subprojects' impacts and risks in accordance with the ESMS requirements (January 2017 to November 2019).
2.2 Appraise potential subprojects (January 2017 to November 2019).
2.3 Publish knowledge products and provide services to ADB's developing member countries on green financing, low-carbon technologies, and business models (January 2019 to November 2019).

Output 3: Subproject developers' capacity in preparing bankable projects strengthened

3.1 Organize workshops on new technologies and international best practices (January 2017 to November 2019).
3.2 Organize workshops on low-carbon technologies and new business models to scale up low-carbon development (January 2017 to November 2019).
3.3 Organize training on risk appraisal and underwriting skills related to green investment (January 2017 to November 2019).

Inputs

Clean Energy Fund under the Clean Energy Financing Partnership Facility: $1,000,000

Note: The government will provide counterpart support in the form of counterpart staff, office accommodation, office supplies, information and support needed, and other in-kind contributions.

Assumptions for Partner Financing

Not applicable.

μg/m^3 = microgram per cubic meter, BTH = Beijing–Tianjin–Hebei, CNY = Chinese yuan, ESMS = environmental and social management system, GFP = green financing platform, NO_x = nitrogen oxide, $PM_{2.5}$ = particulate matter less than 2.5 microns in diameter, PRC = People's Republic of China, SMEs = small and medium-sized enterprises, SO_2 = sulfur oxide, TA = technical assistance.

[a] Government of the PRC. 2013. *Comprehensive Action Plan for Air Pollution Prevention and Control of the People's Republic of China*. Beijing; Government of the PRC. 2016. *Thirteenth Five-Year Plan, 2016–2020.* Beijing.

Source: Asian Development Bank.

COST ESTIMATES AND FINANCING PLAN

($'000)

Item	Amount
Clean Energy Fund[a] under the Clean Energy Financing Partnership Facility	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	207.5
ii. National consultants	233.4
b. International and local travel	59.6
c. Reports and communications	30.0
2. Training, seminars, conferences, and outreach program[b]	150.0
3. Equipment and online application and data collection platform[c]	200.0
4. Vehicle rental[d]	10.8
5. Miscellaneous administration and support costs	10.0
6. Contingencies	98.7
Total	**1,000.0**

[a] Financing partners: the governments of Australia, Norway, Spain, Sweden, and the United Kingdom. Administered by the Asian Development Bank (ADB).

[b] Includes at least five workshops and two training sessions for a total of about 150 participants. The venue of the training and workshop will be in the People's Republic of China, most likely in Beijing. The outreach program will include a media campaign and other activities to stimulate people's behavioral change toward low-carbon technologies.

[c] Equipment includes laptops, printers, air purifiers, and selected energy monitoring equipment. Procurement will be done in accordance with ADB Procurement Guidelines (2015, as amended from time to time). Upon completion of the technical assistance, all equipment procured under it will be turned over or disposed of in accordance with ADB's project administration instructions. The online application and data collection platform is a platform that will be purchased and maintained by the executing agency. The details will be finalized in the early stage of implementation of this technical assistance.

[d] Vehicles will be rented for the site visits and commuting between the different offices.

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. Introduction

1. The proposed capacity development technical assistance (TA) will help improve capacity for energy management, emission monitoring and verification, establishment of energy consumption baselines, verification of energy savings, compliance with environmental and social safeguards, and project development in the Beijing–Tianjin–Hebei (BTH) region of the People's Republic of China (PRC).[1] It will also build practical knowledge of the Asian Development Bank (ADB) in the emerging area of green development financing and will assist other ADB developing member countries. The proposed TA aims to (i) improve the reach of the green financing platform (GFP) to potential borrowers; (ii) increase readiness of the subprojects under the Green Financing Platform Project of China National Investment and Guaranty Corporation, especially for some advanced technology subprojects; (iii) design and develop an online application and data collection platform for potential subprojects; and (iv) improve the capacity of the executing and implementing agencies, participating banks and financial institutions, and subborrowers.

2. A set of individual international experts and national consultants will be engaged to improve the capacity of relevant agencies and the readiness of subprojects under the proposed TA. An overview of the required consulting services is summarized in Table A1.

Table A1: Summary of Consulting Services

Area of Expertise	Duration (person-months)
A. International	
1. Energy efficiency and renewable energy expert	4
2. Environmental expert	6
Subtotal (A)	**10**
B. National	
1. Energy efficiency and renewable energy expert	4
2. Agriculture waste utilization expert	2
3. Environmental experts (2)	24
4. Financial risk assessment expert	3
5. Energy performance monitoring and evaluation expert	6
Subtotal (B)	**39**
Total (A+B)	**49**

B. Consulting Requirements

3. **Energy efficiency and renewable energy expert** (international, 4 person-months, intermittent). The expert should have (i) a postgraduate degree in engineering or in any relevant field and (ii) at least 10 years of experience working on energy efficiency, including industrial and building-specific energy efficiency. Work experience in the region or in the PRC will be an advantage. Oral and written English proficiency is required. Proficiency in Chinese would be a plus. Tasks include the following:

(i) provide detailed technical descriptions of identified energy efficiency and renewable energy subprojects, including information on technology used, energy

[1] The greater Beijing–Tianjin–Hebei region (BTH region) includes Beijing and Tianjin municipalities; Hebei, Henan, Shandong, Shanxi and Liaoning provinces; and the Inner Mongolia Autonomous Region.

saved, emissions reduced, cost ranges, process diagram, associated operation phase utility consumptions, and others;

(ii) evaluate the identified energy efficiency and renewable energy subprojects as to whether international best practices are used, and investigate if the technology is field-tested;

(iii) determine issues and challenges that may arise for the identified energy efficiency and renewable energy subprojects;

(iv) make recommendations to the executing agency on whether the identified energy efficiency and renewable energy subprojects are technically sound and cost effective;

(v) quantify and calculate greenhouse gas reduction and air quality improvement benefits and other environmental benefits;

(vi) support various capacity building activities relevant to the identified energy efficiency and renewable energy technologies and business models; and

(vii) suggest the most appropriate business model to develop energy efficiency and renewable energy subprojects.

4. **Environment expert** (international, 6 person-months, intermittent). The consultant must have (i) at least a master's degree in environmental engineering, environmental management, or relevant fields; (ii) a minimum of 10 years of experience in environmental impact assessment; (iii) experience in clean energy generation, efficient industrial production, green transport, and solid waste and sewage treatment; and (iv) experience in international cooperation and clean energy generation and efficient industrial production. Oral and written English proficiency is required. Proficiency in Chinese would be an advantage. The expert will

(i) analyze local pollutant emission to ensure reliability;

(ii) review the technical descriptions to make sure the subprojects do not have a connection to the prohibited investment activities list or an unacceptable high environmental and social risk to ADB;

(iii) review the feasibility study reports, technical descriptions, existing environmental impact assessment, and other documentation provided by the subborrower, as set out in the environmental and social management system (ESMS), to identify potential environmental or social impacts or high environmental, health, and safety (EHS) risks of the subprojects, making use of the rapid environmental assessment checklist; and review all alternatives to determine if best available technology resulting in least environmental impact or risk is being used;

(iv) review documentation provided by the subborrower, as defined in the ESMS, to confirm that subprojects are in compliance with applicable law and regulations;

(v) undertake an initial site visit for each proposed subproject in accordance with the ESMS requirements to verify the findings of tasks (ii)–(iv) and investigate any issues that were raised during this initial due diligence;

(vi) prepare environmental categorization in accordance with the ESMS and using ADB's categorization system for each proposed subproject, identify if category B projects pose high risks, and submit to ADB for concurrence;

(vii) if the selected subprojects are category A and involve existing facilities in accordance with the requirements of the ESMS, conduct an EHS audit and prepare an environmental audit report—including a time-bound corrective action plan (CAP) in English—in accordance with the requirements of Appendix 1 of ADB's Safeguard Policy Statement;

(viii) in accordance with the requirements of the ESMS and in conjunction with the subborrower, undertake an environmental assessment based on meaningful consultation, among others, and prepare an English-language environmental

initial assessment (EIA), including an environmental management plan (EMP) and environmental monitoring plan (EMoP), for each subproject selected for ADB financing that is assessed to be category A for environment in accordance with the requirements of Appendix 1 of ADB's Safeguard Policy Statement, and present the subproject for ADB peer review;

(ix) if the selected subproject involves general corporate finance or financial leasing companies, conduct a corporate environmental audit in accordance with the requirements of the ESMS, and either develop a time-bound CAP if the company already has an ESMS or, if none exists, a subproject ESMS for adoption;

(x) advise the executing agency on whether the proposed subprojects comply with the ESMS and whether they should be supported by the GFP;

(xi) review the subproject loan agreement to ensure that it contains appropriate environmental and social covenants;

(xii) organize capacity development activities for the executing agency's ESMS implementation team or subproject companies in accordance with ESMS requirements;

(xiii) review the initial environmental examination (IEE) and environmental audit reports prepared by the national environmental specialist to confirm that they are in accordance with Appendix 1 of the ADB's Safeguard Policy Statement and ESMS requirements; and

(xiv) review the commitment and capacity of the subborrower to adequately manage social and environmental impacts and/or risks in accordance with the ESMS policy principles and requirements, and, if capacity development is needed, prepare and implement a capacity building plan.

5. **Energy efficiency and renewable energy expert** (national, 4 person-months, intermittent). The expert should have (i) a postgraduate degree in engineering or in a relevant field and (ii) at least 10 years of working experience in energy efficiency, including industrial and building-specific energy efficiency. Oral and written English proficiency is required. Tasks include the following:

(i) assist the international energy efficiency and renewable energy expert in tasks (i)–(vi);

(ii) review the feasibility study report; and

(iii) investigate local resources as to their exploitable potential to ensure reliability.

6. **Agriculture waste utilization expert** (national, 2 person-months, intermittent). The expert should have (i) a postgraduate degree in engineering, chemical engineering, processing engineering, environmental engineering, or in any relevant field; (ii) at least 10 years of working experience in agriculture waste utilization; and (iii) preferably experience in international cooperation. Tasks include the following:

(i) provide detailed technical descriptions of selective renewable energy subprojects, including information on feedstock, associated emissions and other environmental discharges, cost ranges, process diagram, associated operation phase utility consumptions, and others;

(ii) evaluate the selected subprojects as to whether international best practices of agricultural waste utilization technologies are used;

(iii) identify issues and challenges that may arise for selected agricultural waste utilization subprojects;

(iv) advise the executing agency on whether the selected subprojects are technically sound and cost effective;

(v) quantify and calculate greenhouse gas emission reduction and air quality improvement benefits, and other environmental benefits;
(vi) support various capacity-building activities relevant to agricultural waste utilization technologies;
(vii) investigate local biomass data to ensure reliability; and
(viii) review the feasibility study report, and collect relevant biomass energy information and parameters.

7. **Environment experts** (2 national, 12 person-months each, intermittent). The consultants must have (i) at least a master's degree in environmental engineering or relevant fields; (ii) a minimum of 10 years of experience in environmental management of clean energy generation, efficient industrial production, green transport, solid waste treatment, and environmental impact assessments; and (iii) preferably experience in international cooperation. The experts will

(i) assist the international environmental expert in tasks (i)–(xii);
(ii) if the selective subprojects are category B with a high risk and involve existing facilities in accordance with the requirements of the ESMS, conduct an EHS audit and prepare an environmental audit report, including time-bound CAP, in Chinese;
(iii) if the proposed subproject is categorized as B and is high risk, in accordance with the requirements of the ESMS and in conjunction with the subborrower, undertake an environmental assessment, including meaningful consultation, and prepare in Chinese language an IEE complete with EMP and EMOP, in accordance with the requirements of Appendix 1 of ADB's Safeguard Policy Statement;
(iv) if the selective subproject was preliminarily assessed as high or medium in climate risks, prepare a climate risk and vulnerability assessment;
(v) monitor the subprojects and confirm that they meet compliance with all applicable environmental safeguard requirements, including PRC regulations, CAP, EIA, IEE, EMP, EMoP, subproject ESMS, and grievance redress mechanism (GRM);
(vi) visit each subproject site, quarterly in accordance with the ESMS requirements during construction and operation, to monitor the implementation of subproject-specific CAP, EMP, EMoP, subproject ESMS, and GRM;
(vii) document and promptly report to the executing agency any actual or potential breach of the compliance requirements and, if necessary, prepare a CAP in accordance with the requirements of Appendix 1 of ADB's Safeguard Policy Statement;
(viii) prepare environmental monitoring reports in accordance with the ESMS requirements during construction and operation;
(ix) in the event of an unanticipated impact or a minor or major change in subproject scope, reconfirm the categorization, update the EIA and IEE, as required, and, if necessary, prepare a CAP in accordance with the requirements of Appendix 1 of ADB's Safeguard Policy Statement;
(x) prepare consolidated semiannual environmental monitoring reports in English during the first 3 years after loan effectiveness, and semiannual ESMS implementation reports until project closure, and submit them to the executing agency;
(xi) provide training to subproject companies on the requirements of ADB's Safeguard Policy Statement, project ESMS, PRC laws and regulations, EIA, IEE, EMP, EMoP, subproject ESMS, GRM, on information disclosure, meaningful consultation, environmental management systems, and compliance with

International Finance Corporation's EHS Guidelines, as well as on other topics to be identified by the executing agency; and

(xii) for low-risk category B or category C subprojects, prepare an environmental and social due diligence report to demonstrate that the subprojects comply with ESMS requirements.

8. **Financial risk assessment expert** (national, 3 person-months, intermittent). The consultant must (i) be certified as a public accountant and have a professional qualification such as Chartered Financial Analyst, Chartered Accountant, and the Association of Chartered Certified Accountants; (ii) have a minimum of 5 years of experience in foreign exchange risk analysis; (iii) have knowledge about the PRC's financial system and fiscal system; and (iv) preferably have experience in international cooperation. The expert will

(i) take charge of the overall analysis on how to manage the foreign exchange risks,
(ii) analyze and monitor the trend of euro–yuan exchange rates,
(iii) share the trend with the executing agency,
(iv) warn the executing agency on any exacerbated movement of foreign exchange, and
(v) recommend the actions needed to manage the foreign exchange risks.

9. **Energy performance monitoring and evaluation expert** (national, 6 person-months, intermittent). The consultant must have (i) at least a master's degree in engineering or relevant fields, (ii) a minimum of 10 years of experience in energy performance monitoring and evaluation, and (iii) experience in international cooperation. The expert will monitor and track the energy performance of the selected subprojects, and will

(i) establish monitoring and verification regimes for identified subprojects, including establishing baseline data and arrangements for regular measuring of energy and emission data;
(ii) provide advice and assist the executing agency with documentation requirements and subloan processing;
(iii) document and report on the progress and status of projects, especially in the provision of project data;
(iv) monitor and verify energy performance and emission reduction of identified subprojects, and compare the data with the baselines after project completion; and
(v) contribute to the capacity-building events such as training, workshops, and conferences, as required.

C. Reporting Requirements

10. The consultants will submit the requested reports based on the timetable set in the consulting contract. A final report will be provided upon completion of each output. The consultants will incorporate all the comments provided by ADB and the executing agency in the final version of each report. All reports will be provided in both English and Chinese.