

Project Administration Manual

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People's Republic of China: Air Quality Improvement
in the Greater Beijing–Tianjin–Hebei Region
—China National Investment and Guaranty
Corporation's Green Financing Platform Project

ABBREVIATIONS

ADB	–	Asian Development Bank
ACEE	–	Appraisal Center for Environmental and Engineering
BOB	–	Bank of Beijing
BTH	–	Beijing-Tianjin-Hebei
CAAP	–	Comprehensive Action Plan for Air Pollution Prevention and Control
CCA	–	CNY conversion account
CO ₂	–	carbon dioxide
CNY	–	Chinese yuan
EWA	–	euro withdrawal account
ESCOs	–	energy service companies
ESMS	–	environmental and social management system
FCA	–	framework cooperation agreement
FIL	–	financial intermediation loan
FMA	–	financial management assessment
GDP	–	gross domestic product
GFP	–	green financing platform
GLRA	–	guarantee loss reserve account
IDA	–	interest differential account
I&G	–	China National Investment and Guaranty Corporation
MOF	–	Ministry of Finance
NDRC	–	National Development & Reform Commission
PAM	–	project administration manual
PMO	–	project management office
PRC	–	People's Republic of China
RFA	–	recycled funds account
RRP	–	report and recommendation of the president
SDIC	–	State Development & Investment Corporation
SMEs	–	small and medium-sized enterprises
SPS	–	safeguards policy statement

GLOSSARY

financing guaranty leverage ratio	–	at any time the ratio of outstanding guaranty amount to net assets
guarantee compensation rate	–	total compensation expenditure in the year divided by total guaranteed amount for the year
net assets	–	the residual of total assets minus total liabilities.
total assets	–	the aggregate at such time of current assets, including cash & equivalent, tradable financial assets, notes receivable, net accounts receivable, accounts prepaid, interest receivable, dividend receivable, other receivables,

inventories, prepaid and deferred expenses, long-term bonds due in a year, other current assets

non-current assets, including available for sale financial assets, hold-to-maturity investment, long-term account receivable, long-term equity investment, invested real estate, net fixed assets, construction in progress, engineering material, disposal of fixed assets

intangible and deferred assets, including intangible assets (land, patents etc.), r&d expenditures, goodwill, long-term amortizable expenses

total compensation expenditure	—	amount paid by a guarantee institution to lender on behalf of the defaulted borrower, before recourse to collaterals
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total liabilities	—	<p>the aggregate at such time of:</p> <p>Current Liabilities, including short-term loans, Inter-company borrowings, Tradable financial debt, Notes payable, Accounts payable, Advances from customers, Payroll and welfare payable, Taxes and administration fees payable, Interest payable, Dividend payable, Other accounts payable Debt from broking security trade, Long-term liabilities due within one year, Other current liabilities</p> <p>Long-term Liabilities, including Long-term loans payable, Bonds payable, Long-term accounts payable, Special program account payable, Anticipated liabilities, Deferred revenues, Deferred tax liabilities, Other long-term liabilities</p>
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Project Administration Manual Purpose and Process

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with the policies and procedures of the government and Asian Development Bank (ADB). The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The China National Investment and Guaranty Corporation as the executing and implementing agencies, is wholly responsible for the implementation of ADB-financed projects, as agreed jointly between the borrower and ADB, and in accordance with the policies and procedures of the government and ADB. State Development & Investment Corporation is the oversight body to the project. ADB staff is responsible for supporting implementation including compliance by the China National Investment and Guaranty Corporation of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At loan negotiations, the borrower and ADB shall agree to the PAM and ensure consistency with the loan agreement. Such agreement shall be reflected in the minutes of the loan negotiations. In the event of any discrepancy or contradiction between the PAM and the loan agreement, the provisions of the loan agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP), changes in implementation arrangements are subject to agreement and approval pursuant to relevant government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval, they will be subsequently incorporated in the PAM.

I. PROJECT DESCRIPTION

1. The proposed Green Financing Platform (GFP)¹ is the first of its kind dedicated to the greater Beijing–Tianjin–Hebei (BTH)² region that will leverage financing and scale up investments in green and pollution-reduction projects in sectors such as energy, transport, urban, and agriculture.³ It will also address market failures that have inhibited investment flows in energy efficiency, and will target emission reduction from small and medium-sized enterprises (SMEs).⁴ The GFP will reinforce Asian Development Bank’s (ADB) policy-based loan approved in 2015 for Hebei Province by scaling up investments in the policy actions throughout the BTH region, thus, enlarging and accelerating its impacts.⁵

2. Poor air quality in the BTH region is a serious health risk and economic burden. BTH, which generates nearly one-third of the People’s Republic of China’s (PRC) gross domestic product, is also the country’s worst-polluted region. It consistently experiences poor air quality caused by an excessive reliance on coal in the energy mix, high concentration of energy- and pollution-intensive industrial enterprises, concentration of cars and vehicles, and weak environmental standards.⁶ Air pollution emergencies occur frequently in many of the region’s cities.⁷ Nearly 228 million people in the region live in cities where the average concentration of fine particles commonly known as *particulate matter* less than 2.5 microns in diameter (PM_{2.5}) is predominantly higher than the safe level.⁸ Ambient air pollution, particularly higher concentration of PM_{2.5}, increases the risk of cardiovascular disease, respiratory diseases, and ischemic heart disease, and is the fifth leading cause of premature deaths in the PRC.⁹ Children, the sick, and the elderly are the most vulnerable to such adverse effects. Exposure to high levels of PM_{2.5} contributes to about 1 million premature deaths annually in the PRC, with a disproportionate number of these in the BTH region. The cost of premature mortality to the national economy is estimated as approximately 7.5% of the gross domestic product.¹⁰ Together, these are compelling reasons to address the region’s air quality issue.

3. The Government of the PRC is committed to improve air quality in the BTH region and has made good progress. In 2012, the State Council promulgated new ambient air quality

¹ Green financing platform is a term used to describe the project’s financing approach which includes a set of diverse financial products with a common objective, which will also be adopted by a group of partner domestic banks.

² The greater BTH region consists of the Beijing and Tianjin municipalities; Hebei, Henan, Shandong, Shanxi, and Liaoning provinces; and Inner Mongolia Autonomous Region. The design and monitoring framework is in Appendix 1.

³ Based on various data, these sectors combined are responsible for nearly 95% of air pollution in the BTH region.

⁴ For the industrial sector, enterprises with fewer than 1,000 employees and total assets of less than CNY400 million are SMEs.

⁵ Asian Development Bank (ADB). 2015. *Report and Recommendation of the President to the Board of Directors: Proposed Policy-Based Loan to the People’s Republic of China for the Beijing–Tianjin–Hebei Air Quality Improvement–Hebei Policy Reforms Program*. Manila.

⁶ Air quality index (AQI) is a common measure of the quality of air and its potential health impacts. AQI includes consideration of six atmospheric pollutants: sulfur dioxide, nitrogen oxide, *particulate matter* less than 2.5 microns in diameter (PM_{2.5}), carbon monoxide, ozone, and particulate matter 10 micrometers or less in diameter. In the PRC, the AQI is categorized from 50 (excellent) to 500 (severe pollution).

⁷ In December 2015, Beijing Air Pollution Emergency Headquarters issued a ‘red alert’ was issued for Beijing. The AQI threshold for a red alert is greater than 500 for 1 day, greater than 300 for 2 successive days, or greater than 200 for 4 successive days.

⁸ The PRC standard for PM_{2.5} concentration is 35 micrograms per cubic meter (µg/m³), compared with 10 µg/m³ for the World Health Organization. In 2015, the region’s annual average PM_{2.5} concentration was 73 µg/m³.

⁹ Health Effects Institute and Tsinghua University, 2016. *New Study: Air Pollution from Coal a Major Source of Health Burden in China*. Boston.

¹⁰ World Bank and Institute for Health Metrics and Evaluation. 2016. *The Cost of Air Pollution: Strengthening the Economic Case for Action*. Washington, DC.

standards that tightened the concentration limit of six atmospheric pollutants (footnote 6). In 2013, the government launched a nationwide Comprehensive Action Plan for Air Pollution Prevention and Control (CAAP), 2013–2017, the first plan of its kind in the PRC, which outlined the most stringent air pollution control measures in the PRC’s history.¹¹ Since the CAAP launch, air quality has gradually improved in the BTH region (footnote 11), but is still far below national and World Health Organization standards (footnote 8). The CAAP pairs well with the PRC’s commitment to peak its carbon dioxide (CO₂) emissions by 2030 under the Paris Agreement because coal combustion is the single-largest source for both air pollution and CO₂ emissions (footnote 9). Since the BTH region is also responsible for about 40% of the country’s CO₂ emissions, it is a common top priority under both air quality and climate change policy goals. The Thirteenth Five-Year Plan (2016–2020) has reaffirmed the government’s commitment to accelerate air quality improvement and includes mandatory targets.¹²

4. Despite a promising start, tougher challenges remain to further improve air quality. CAAP helped accelerate the early retirement of surplus industrial capacity and galvanized actions for cost-effective, end-of-pipe measures to yield quick results.¹³ But many similar international experiences have shown that air quality improvements require sustained long-term, coordinated, and multisector efforts. Since air pollution easily migrates to neighboring areas, a BTH region-wide approach is also essential.¹⁴ These requirements pose significant new challenges for national, provincial, and city authorities in the BTH region that traditionally rely on a sector-specific and city- or province-specific approach and are structured accordingly.

5. Some important sectors and segments need increased attention and targeted support. Air quality is generally considered an urban issue that tends to ignore, for example, agriculture sector (biomass burning) and rural energy consumption, which together are responsible for 15% of the region’s PM_{2.5} emissions. Similarly, SMEs are key economic players in the BTH region, accounting for about 60% of industrial pollution.¹⁵ But, because of SMEs’ lack of knowledge in advanced and energy-efficient technologies, weak understanding of their cost-benefit evaluation, and, most importantly, difficulties in accessing commercial credit,¹⁶ they are seriously constrained in taking actions to reduce pollution and emissions and are about 40% less energy efficient than large enterprises in the same sector.¹⁷ Energy service companies (ESCOs), which act as developers for energy efficiency improvement projects of SMEs and assume the technical and performance risks, can overcome many of these barriers and help SMEs. But ESCOs are generally SMEs themselves and face similar hurdles accessing credit.¹⁸ The government established green credit policies in 2007 and then revamped them in 2012 as Green Credit Guidelines to encourage banks to support green industries and projects. But commercial banks’ appetite for green financing is still limited to large polluting and excess capacity enterprises instead of SMEs or ESCOs. A targeted

¹¹ CAAP aimed to cut the level of PM_{2.5} in the BTH region by 25%–30%. Compared with 2013, the annual average concentration of PM_{2.5} in the BTH region declined by 9.8% in 2014 and by a further 11.3% in 2015.

¹² The Thirteenth Five-Year Plan requires (i) > 80% days with good air quality (less than 100 AQI) per year for cities at or above prefecture level, and (ii) 18% reduction in number of cities that do not meet the PM_{2.5} national standard. Government of the PRC. 2016. *Thirteenth Five-Year Plan, 2016–2020*. Beijing.

¹³ “End-of-pipe” actions require pollution control devices to scrub pollutants, which are effective for quick outcomes.

¹⁴ A performance evaluation of the CAAP by the Clean Air Alliance of China found that 20% of PM_{2.5} was a result of regional transmission from neighboring provinces.

¹⁵ Yao Guoyan. 2012. SMEs should actively undertake the corporate environmental responsibility. *Environmental Protection*. 7. pp. 52–53.

¹⁶ Banks consider SME transactions highly risky and require good credit ratings or high levels of collateral, which many SMEs cannot provide.

¹⁷ International Energy Agency. 2015. *Accelerating Energy Efficiency in Small and Medium-Sized Enterprises*. Paris.

¹⁸ Cash-flow financing is crucial for small ESCOs because they rely on energy-saving performance contracts in which debt repayments are tied to the energy cost savings guaranteed for the project.

approach combining credit enhancement and tailored financing can unlock investments. But there is no financing vehicle that can directly address these needs in the region.

6. The CAAP alone requires CNY1.8 trillion in investments, of which CNY250 billion is needed in the BTH region. About CNY6.6 trillion is needed to meet low-carbon and clean energy targets in the 13th plan. The scale of investment is a serious challenge, but bigger challenges are to address market failures and channel financing into these environmental and low-carbon projects for which returns are modest, perceived risks are high, and, despite conducive policies, commercial banks are hesitant to do transactions.

7. The government requested ADB to design the project and to establish a GFP so as to mobilize domestic financing to air quality improvements in the BTH region by leveraging ADB loan proceeds. The project will use the financial intermediation loan (FIL) modality, which is the most appropriate lending instrument to aggregate diverse projects across many sectors in the BTH region for which the financing requirements are not large enough to warrant direct lending by ADB. It also enables ADB and the government to establish partnerships with local commercial banks and domestic financial institutions to enable financing of such projects on commercial terms. This modality was also employed in similar energy-efficient and emission-reduction projects in the PRC during 2008–2015 and has proved highly successful.¹⁹ The GFP builds on the lessons learned.²⁰

8. The GFP will offer three complementary financial products:²¹ (i) credit guarantees to enable commercial financing from banks, (ii) debt financing through entrusted loans,²² and (iii) financial leasing for purchasing energy-efficient industrial equipment and other goods to obviate the need for large capital for SMEs and ESCOs.²³ In addition, GFP may make short-term equity investments in promising start-ups specializing in advanced low-carbon technologies to help overcome barriers of lack of credit history and the collateral.²⁴ The credit guarantees will ensure that technically sound and financially viable subprojects with high energy-saving and pollution-reduction potential but lack collateral will meet the commercial banks' requirements. The financial intermediary will partner with commercial banks to offer entrusted loans at near market rates, and partner banks are encouraged to provide cofinancing. GFP can provide lease financing through financial leasing companies.²⁵ The GFP will also be in close partnership with some major

¹⁹ ADB. 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranchise Financing Facility and Administration of Grant to the People's Republic of China for the Guangdong Energy Efficiency and Environment Improvement Investment Program*. Manila; ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Shandong Energy Efficiency and Emission Reduction Project*. Manila; ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Hebei Energy Efficiency Improvement and Emission Reduction Project*. Manila; and ADB. 2015. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for the Chemical Industry Energy Efficiency and Emission Reduction Project*. Manila.

²⁰ Lessons include that (i) capacity of the financial intermediary is a crucial factor; (ii) in previous FILs, credit risks were borne by provinces or industrial entities, which led to a risk-averse approach in appraising transactions; and (iii) more rigorous due diligence can avoid high attrition rate among borrowers.

²¹ These are broadly in line with the Group of Twenty and Organisation for Economic Co-operation and Development guidance note on diversification of financial instruments for infrastructure and SMEs.

²² An entrusted loan refers to the extension of credit by a bank as an agent of entrusted funds from the GFP. The bank will administer the debt, but assumes no credit risk.

²³ In leasing arrangements, the equipment is owned by the financial leasing company.

²⁴ The short-term equity investment will be with a clear exit strategy.

²⁵ The detailed description of the financial products offered by the platform is in the Project Administration Manual (accessible from the list of linked documents in Appendix 2).

commercial banks, thereby not only catalyzing large cofinancing from commercial banks but also enhancing their capacity and interest in similar investments.

9. The importance of good air quality in the BTH region, which is home to nearly one-third of the PRC's total population, cannot be emphasized enough. It is a basic human need and a critical component of Sustainable Development Goal3: Ensure healthy lives and well-being for all at all ages and Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable. Given the challenges and required actions (para. 4) in the BTH region, ADB and the government have agreed in principle on a multiyear lending support program during 2016–2020, which is well aligned with ADB's country partnership strategy priority of managing climate change and the environment and the government's 13th plan.²⁶ ADB's planned lending support during 2016–2020 will be about \$500 million per year and will focus on (i) strengthening policy and regulatory framework in the region, (ii) developing tailored financing approaches to unlock and channel investments in right areas, and (iii) leapfrogging technology in key sectors. ADB support will complement government and other development partners' actions, such as the World Bank.²⁷ Yearly ADB lending support will be mutually reinforcing and supported by analytical, policy advisory, and capacity development non-lending work, much of which is in progress.²⁸

10. The 2015 policy-based loan (footnote 5) was ADB's entry point to address the BTH region's air quality issue. This loan was fully disbursed in June 2016. The GFP is a logical next step to fill a critical gap of a region-dedicated financing vehicle and expand the financial products tool kit to reduce primary air pollutants, and improve public health.²⁹ The proposed GFP will help address the twin challenges of air quality improvements and climate change mitigation.

A. Impacts and Outcome

11. The impacts will be reduced air pollution and improved public health in the BTH region. The outcome will be accelerated air quality improvements and CO₂ emission reduction through scaled-up investments in green and pollution-reduction projects in the BTH region.

B. Outputs

12. The outcome will be achieved through the following outputs:

- (i) **Output 1: Established green financing platform and leveraged commercial financing for pollution-reduction projects.** The BTH region-dedicated platform will scaleup investments in sectors responsible for about 95% of the region's pollution. By 2022, at least CNY6 billion will be leveraged from cofinanciers.
- (ii) **Output 2: Lowered barriers and scaled-up financing for small and medium-sized enterprises and energy service companies from the green financing platform.** By 2022, SMEs and ESCOs will receive at least CNY1 billion investment

²⁶ ADB. 2016. *Country Partnership Strategy: Transforming Partnership: People's Republic of China and Asian Development Bank, 2016–2020*. Manila.

²⁷ The details of coordination among development partners are detailed in Development Coordination (accessible from the list of linked documents in Appendix 2).

²⁸ ADB. 2014. *Technical Assistance to the People's Republic of China for the Study on the National Control of the Important Pollutant–Volatile Organic Compounds*. Manila; ADB. 2015. *Technical Assistance to the People's Republic of China for the Beijing–Tianjin–Hebei Regional Air Pollution Control*. Manila; ADB. 2016. *Technical Assistance to the People's Republic of China for Developing Cost-Effective Policies and Investments to Achieve Climate and Air Quality Goals in the Beijing–Tianjin–Hebei Region*. Manila; and ADB. 2015. *Technical Assistance to the People's Republic of China for the Study on the Coordinated Development of Beijing–Tianjin–Hebei*. Manila.

²⁹ The Framework for the Beijing–Tianjin–Hebei Air Quality Improvement Program, 2016–2020 (accessible from the list of linked documents in Appendix 2) provides further information on a framework concept of ADB support to the BTH region during 2016–2020. The details of individual projects under the framework will be mutually agreed.

from and as a result of the GFP .By working closely with domestic banks, the project will strengthen their capacity and interest in SME and ESCO financing.

- (iii) **Output 3: Strengthened capacity in new financial products and to appraise and implement green financing projects.** Work closely with financial intermediary and partner entrusted banks to build their capacity in new financial products, enhance safeguard measures as reflected in the environmental and social management system (ESMS), and help them to better understand how to underwrite and appraise green and pollution-reduction projects and their implementation.³⁰

³⁰ A capacity development technical assistance is being processed (50096-003) to supplement GFP implementation and provide essential risk-mitigating measures. It aims to (i) improve the GFP's reach across all sectors, provinces, and cities through targeted outreach efforts; (ii) increase readiness of the subprojects; (iii) design and develop an information technology-based online platform for application by potential subprojects; and (iv) improve the capacity of the executing and implementing agencies, participating banks and financial institutions, and subborrowers in appraising such projects and implementing the ESMS.

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

13. Prior to the ADB's loan fact-finding mission, as the executing agency and implementing agency of the proposed project the China National Investment and Guaranty Corporation (I&G),³¹ relevant agencies thereof, had already undertaken the following project readiness activities:

- A project management office (PMO), with around 20 staff has been established in I&G in July 2016;
- I&G assigned two PMO staff to be responsible for the ESMS establishment, operation and reporting;
- Four consultation missions have been fielded by ADB project team;
- Using a competitive process agreed with ADB, I&G has selected Bank of Beijing (BOB) as entrusted bank to help administer the financial intermediary loan (FIL) project;
- Project focused areas have been discussed and agreed between ADB and I&G;
- Subproject selection criteria has been discussed and agreed between ADB and I&G;
- Financing products to be included in the project has been discussed and finalized;
- Representative subprojects for each focused area have been selected and field visits had been carried out;
- Initial due diligence of the representative subprojects on economic and financial, technical, governance, and environmental and social safeguards have been carried out; and
- Appraisal Center for Environmental and Engineering (ACEE) has been selected for providing support to the ESMS establishment and implementation, a Strategic Cooperation Framework Agreement has been negotiated and to be signed before the board consideration.

14. The indicative information of the representative subprojects are summarized in the Table 1. Some of the subprojects are still being assessed, therefore the energy and emission saving data is incomplete.

³¹ I&G is the leading enterprise in PRC's guarantee industry with total assets in 2015 amounting to \$1.63 billion equivalent. The company focuses on credit enhancement, assets management and provision of guaranty. I&G has extensive experience in providing guarantees for SMEs. I&G was also successfully implemented and managed the Energy Efficiency Improvement Project Phase II financed by World Bank and the Global Environmental Facility from 2003–2009, which developed the corporation's capacity in ESCO and green financing. The same team will manage and implement the proposed loan.

Table 1: Indicative Representative Subprojects

No.	Focused Area	Borrower	Project Name	Project Location	Project Cost (€ million)	Financing from I&G (€ million)	Financing Product	Tenor (Year)	Coal Reduction (tons of SCE)	CO ₂ Reduction (t)	SO ₂ Reduction (t)	NO _x Reduction (t)	PM Reduction (t)	FIRR (%)	EIRR (%)
1	Waste Heat Capture and Delivery	Zhongyineng (ESCO)	Waste heat Recovery for District Heating	IMAR/Liaoning	44.62	17.98	Debt with equity held as security	7	158,673.7	521,407.3	3,802.1	1,121.6	3,564.5	15.35	25.39
2	Agriculture Waste Utilization	Kaidi Ecological Environment Technology Co., Ltd	Harnessing Biomass Energy from Agricultural Waste in Hebei	Hebei	55.11	41.31	Entrusted loan guaranteed by third party security	7	58,559.0	141,247.0	87.4	557.5	1,335.6	11.30	19.73
3	Emission Reduction	Beijing Zhongjing (ESCO)	Desulfurization and Denitrification System to Reduce Emission in Tianjin and Shanxi	Tianjin/Shanxi	11.08	4.65	Debt with equity held as security	5	-	-	2,469.1	1,388.7	700.1	15.07	25.06
4	Distributed energy	Beijing Luzhou Dehan (ESCO)	Distributed Energy for Shilong Economic Development Park in Beijing	Beijing	6.20	4.96	Unsecured entrusted loan	5	11,250.0	2,392.0	-	-	-	15.41	22.92
5	EE and ER	Beijing Guozi Financial Leasing Corporation	Green leasing	Greater BTH	82.60	41.30	Green Leasing	5	15,000.0	36,181.0	22.3	20.5	4.3	13.91	23.9
6	Renewable Energy	Beijing Tsinghua Yangguang Energy Corporation	Distributed Energy for Space Heating in Zhengding District Hebei	Hebei	14.82	11.01	Unsecured entrusted loan	5	8,300.0	17,462.0	0.5	13.4	1.0	22.80	23.40
7	ESCO	Zhonghui Yuanjing (ESCO)	Scale Up Energy Efficiency in Buildings	Henan, Shanxi and greater BTH	0.29	0.23	Credit line	5	110.3	228.0	0.2	0.2	0.0	12.85	24.19
8	Renewable Energy	Yantai Longjun Wind Energy Development Corporation	Wind Farm Development in Shandong	Shandong	56.58	40.26	Guarantee	7	35,327.0	85,212.0	52.7	48.2	10.1	4.78	17.28
9	Green Transport	Beijing Qingke	Investment in R&D for Smart Electric Bicycles	Greater BTH	11.02	1.38	Early stage investment/unsecured entrusted loan	3	28,330.0	58,418.0	299.0	9,599.0	900.0	20.98	23.08
10	Energy Efficiency	Beijing Energy-saving Science and Technology Ltd.	Investment in R&D of Energy Saving Equipment	Greater BTH	13.77	1.38	Early stage investment	5	-	-	-	-	-	19.08	20.98
11	Waste Heat Capture and Delivery	Huanhui Technology Group Com (ESCO)	Waste heat Recovery for District Heating in Hebei	Hebei	44.71	27.53	Guarantee	3	109,120.0	285,509.0	2,431.7	717.4	2,279.7	10.57	21.65
Total					340.80	191.99			424,669.95	1,148,056.30	9,164.98	13,466.42	8,795.30		

BTH = Beijing-Tianjin-Hebei, CO₂ = carbon dioxide, DeNO_x = denitrification, EE = energy efficiency, EIRR = economic internal rate of return, ER = emission reduction, ESCO = energy service company, FIRR = financial internal rate of return, I&G = China National Investment and Guaranty Corporation, IMAR = Inner Mongolia Autonomous Region, NO_x = nitrogen oxide, PM = particulate matter, R&D = research and development, SCE = standard coal equivalent, SO₂ = sulfur dioxide, t = ton. Source: Asian Development Bank estimates.

15. Table 2 indicates the main project readiness activities and the indicative timing each activity needs to be completed in order to achieve loan effectiveness in April 2017. I&G needs to establish the (i) euro withdrawal account (EWA) denominated in euro at BOB to receive euro from ADB, (ii) CNY conversion account (CCA) in CNY to receive the conversion of euro to CNY before transferring loan funds to subprojects, (iii) recycled funds account (RFA) dominated in CNY to receive reflows (principal amount) from the entrusted loans and equity investments, and (iv) interest differential account (IDA) dominated in CNY to receive interest payments, guarantee fees, and the return from early stage investment. I&G also needs to set up a guarantee loss reserve account (GLRA) in CNY for receiving ADB loan proceeds for guarantee loss reserve, expected return of the guarantee loss reserve fund and payment of any credit losses.

Table 2: Project Readiness Activities

Subproject	2016					2017				Responsibilities
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	
Due diligence of sample subprojects										ADB, I&G
ESMS establishment in I&G										ADB, I&G
Prior review and advanced approval of subprojects										ADB, I&G
FCUP Preparation & Submission										SDIC, I&G
ADB Management Review Meeting										ADB
FCUP Approval										NDRC
Preparation of framework cooperation agreement between I&G and BOB										I&G, BOB
Loan Negotiations										ADB, MOF, SDIC and I&G
ADB Board approval										ADB
Loan signing										MOF, ADB
Government legal opinion provided										MOF, SDIC and I&G
Finalization of onlending agreement										MOF, SDIC and I&G
Loan effectiveness										MOF, ADB
Establishment of EWA, CCA, RFA, IDA, and GLRA										SDIC, I&G and BOB

ADB = Asian Development Bank, BOB = Bank of Beijing, CCA = CNY conversion account, ESMS = environmental and social management system, EWA = euro withdrawal account, FCUP = Foreign Capital Utilization Plan, GLRA = guarantee loss reserve account, I&G = China National Investment and Guaranty Corporation, IDA = interest differential account, MOF = Ministry of Finance, NDRC = National Development and Reform Commission, RFA = recycled funds account, SDIC = State Development & Investment Corporation.

Source: Asian Development Bank estimates.

B. Overall Project Implementation Plan

16. Although the project implementation period is 15 years, the ADB loan will be drawn out over a period of 5 years and is expected to close on 30 September 2022. The loan implementation schedule is provided in Table 3.

Table 3: Project Implementation Plan

Activity	2016		2017				2018				2019				2020				2021				2022			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1: BTH-dedicated green financing platform established and commercial financing for pollution reduction projects leveraged																										
1. BTH-dedicated green financing platform established																										
2. 1.2 CNY 6 billion commercial co-financing leveraged by the platform																										
1. Implement fuel switching from coal to natural gas and renewable energy projects																										
2. Implement energy efficiency improvement and emission reductions projects in industries																										
3. Implement agricultural waste to-energy project																										
4. Implement distributed renewable energy project																										
5. Improve energy efficiency in buildings																										
6. Construct clean and low emission (electric and compressed/liquefied natural gas) charging/filling infrastructure																										
7. Implement clean and low emission transport projects																										
Output 2: Lowered barriers and scaled-up for financing for small and medium-sized enterprises and energy service companies from the green financing platform																										
1. Leverage Cash-flow financing from commercial banks for SME and ESCO financed																										
2. Invest green projects for SMEs and ESCOs																										
Output 3: Strengthened capacity in new financial products, and to appraise and implement green financing projects																										
1. Adaptation and implementation of ESMS																										
2. Appraise projects for cofinancing by commercial bank																										
3. Organize workshops on energy management																										
4. Organize workshops on project appraisal and management																										
Reporting and Monitoring																										
Recruitment of Appraisal Center for Environment and Engineering																										
Inception/annual/midterm review mission																										
Project progress reports and safeguards report																										
Project audit report																										
Project completion report																										
Project progress reports and safeguards report																										
Project audit report																										
Project completion report																										

Loan Effectiveness

Loan closing

Physical completion

BTH = Beijing-Tianjin-Hebei, ESMS = environmental and social management system, SME = small and medium-sized enterprises.

Source: Asian Development Bank estimates.

III. PROJECT MANAGEMENT ARRANGEMENTS³²

A. Project Implementation Arrangements and Procedures

1. General

17. The National Development and Reform Commission (NDRC) will set-up a steering committee consisting of representatives from NDRC, Ministry of Finance (MOF), Ministry of Environmental Protection, and the provincial governments of the greater BTH region to provide strategic guidance and oversight to project implementation. I&G will act as the executing agency and implementing agency of the project. The steering committee will ensure the achievement of development objectives and the expected outcomes set by the central government. the State Development & Investment Corporation (SDIC)³³ will exercise oversight over the project. I&G will enter into framework cooperation agreement (FCA) with the BOB for entrusted loans, investment in early stage companies and investment in high credit quality³⁴ and highly liquid³⁵ financial assets to support guarantees.³⁶ A BTH region dedicated GFP will be established in I&G to invite proposals for eligible subprojects. The provincial governments may also refer potential subprojects to the BTH region dedicated GFP.

18. I&G will make independent decisions based on the technical merit, credit quality, environmental due diligence, and agreed subproject selection criteria to finance a particular subproject, and they will assume the full credit risk of the financed subprojects. I&G will be responsible for day-to-day project management implementation, and monitor the implementation and performance of subprojects, including measurement and verification of emission and pollution reduction. I&G will prepare semi-annual progress reports on project implementation to be submitted to ADB. I&G will assess, appraise, and approve individual subprojects to mitigate the technical and financial risks, and an ESMS in accordance with ADB's Safeguard Policy Statement (2009) will be established before the loan effectiveness.

19. The PRC will be the borrower. The loan proceeds will be onlent from MOF to I&G through SDIC on identical terms offered by ADB to MOF. SDIC will cosign the onlending agreement with MOF and I&G, the cosigning will enhance the credit of I&G. The risks of interest rate and foreign exchange rate fluctuation will be borne by I&G. They will also be responsible for the payment of commitment fees on any undisbursed part of the loan.

2. Special Features of FIL Loan

20. **Financing Products.** Using the proceeds of the FIL, I&G will offer the following financial products in the proposed project: (i) unsecured loans administrated on behalf of I&G by a commercial bank at I&G's credit risk (entrusted loans); (ii) entrusted loans secured by a transfer of a controlling interest in the borrower; (iii) entrusted loans secured by third party guarantees or by collateral security; (iv) provision of guarantees, including performance bonds to cofinanciers; and (v) investments in early stage companies.

³² Unless otherwise defined in this PAM, terms used in this PAM have the meanings given to them in the Loan Agreement.

³³ State Development & Investment Corporation is one of the largest investment corporations in the PRC with total assets in 2015 amounting to more than \$76.2 billion equivalent.

³⁴ AA- or better.

³⁵ I&G has to be able to sell the bond quickly without losing value when the guarantee is called.

³⁶ Including green bonds.

21. **Subloans' Tenor.** The tenor of subloans varies depending on the nature of the subprojects. For clean energy and waste to energy projects, it normally takes 5–10 years for the subborrowers to payback the loans, while for energy efficiency and green transport projects, it may take 3–5 years. As the initial subloans are repaid, the proceeds will be re-lent to other subprojects. For this purpose, an RFA will be established to receive the principal repayments of the entrusted loans. It is expected that the ADB loan proceeds will be re-utilized at least two times before it is repaid to ADB. It is required that the SDIC and I&G ensure subsequent subprojects comply with (i) subproject selection criteria for entrusted loans and guarantees, (ii) selection criteria for early stage investment, and (iii) all applicable national social and environmental laws and regulations. Meaningful consultations shall be conducted and GRM shall be established for the subprojects following ADB's requirements.

3. Subproject Selection Procedure

22. A detailed subproject selection criteria for entrusted loans and guarantees (Appendix 2), and early stage investment (Appendix 3), have been prepared to ensure that subprojects meeting the development objectives of the project and complying with relevant ADB policies are selected to receive either entrusted loans, guarantees or early stage investment supported under the BTH region dedicated GFP.

23. A list of initial representative subprojects have been prepared during the project preparation and initial due diligence have been carried out by I&G jointly with the ADB project team. A free limit of €50 million has been set. I&G is free to approve entrusted loans and guarantees amounting to less than the free limit for a subproject without seeking ADB's no objection. I&G shall keep a record of the results of its due diligence and make it available for inspection by representatives of the ADB on request. I&G is required to prepare subprojects appraisal report to verify compliance with the selection criteria and obtain ADB's "no objection" for subprojects (i) financed with retroactive financing; (ii) that receive financing in excess of "free limit" of €50 million; and (iii) rated as "Category A" for environment under the SPS.

4. Specific Implementation Arrangements for Subloan

24. Prior to providing or committing to provide any relent proceeds for (i) the first entrusted loan to an ESCO, (ii) the first entrusted loan to a financial leasing company, (iii) the first entrusted loan to a non-ESCO subborrower; (iv) the first cofinancing subloan; and (v) the first equity investment, I&G shall submit for ADB's prior review and approval documentation related to such proposed transaction including an appraisal report, in such form and detail as ADB may request, describing the subproject, the qualified enterprise, the terms and conditions of the proposed use of proceeds and drafts of the proposed project implementing contracts for the transaction.

25. Whenever I&G proposes to make or guarantee a subloan or make an equity investment or where a financial leasing company proposed to make a financial lease where (i) the proposed subloan or equity investment is in an amount exceeding the free limit or (ii) the subproject is "Category A" for environment under the SPS, I&G shall, or shall ensure that the financial leasing company shall, before entering into or agreeing to the related subloan or guarantee, submit to ADB a "no objection" application for approval of the related subloan and subproject. Such application shall be in a form satisfactory to ADB and shall contain a description and appraisal of the subproject, the qualified enterprise, the terms and conditions of the proposed subloan, drafts of the proposed project implementing contracts for the transaction, and such other information as ADB shall reasonably request. A subloan or equity investment shall be deemed to exceed the free limit if the amount of such subloan or equity investment, when added to the amount of any

other subloans and equity Investments previously made or authorized for the same Subproject or qualified enterprise, exceeds the free limit.

26. I&G shall ensure that each subborrower and recipient of an equity investment, prior to receiving any financial assistance from the project, enters into an entrusted loan agreement or a guarantee counter-indemnity agreement or a financial lease agreement and leasing subproject agreement or an equity investment agreement or an energy performance contract, in each case acceptable to ADB and that reflects the applicable requirements of the Loan Agreement, the Project Agreement and this PAM in addition to any other provisions a prudent financier would request and that describes clearly and in reasonable detail the subproject for which the subloan or equity investment is to be used.³⁷

B. Project Implementation Organizations: Roles and Responsibilities

27. The roles and responsibilities of the different entities involved in project implementation and oversight are summarized in Table 4.

Table 4: Roles and Responsibilities

Project Implementation Organizations	Management Roles and Responsibilities
Steering Committee (representatives from NDRC, MOF, MOEP, the provincial governments of the greater BTH region)	<ul style="list-style-type: none"> • Provide strategic guidance and oversight to project preparation and implementation; • Coordinate project implementation activities among government agencies; and • Resolve any institutional problems affecting project preparation and implementation.
Executing Agency (I&G)	<ul style="list-style-type: none"> • SDIC and I&G, together, enter into onlending agreement with MOF; • SDIC and I&G, together, enter into and comply with Project Agreement; • Provide overall guidance and supervision for project preparation and implementation; • Responsible for coordinating project implementation activities among government agencies; • Ensure that ESMS is established and implemented at I&G and each financial leasing companies; • Has final responsibility for ESMS implementation; and • Prepare and submit entity annual audited and project financial statements to ADB.
Implementing Agency and PMO (I&G)	<ul style="list-style-type: none"> • Act as direct counterpart for ADB and assume major responsibility for day-to-day project implementation; • Provide staff resources with competence in technical, environmental and financial issues pertaining to the project implementation; • Enter into FCA with BOB to establish and monitor (i) EWA for receiving ADB loan proceeds for entrusted loans, equity investment and guarantee loss reserve; (ii) RFA for revolving the reflows (principal repayments); and (iii) IDA for receiving interest payments and guarantee fees from the subprojects, expected return from early stage investment, and payment of eligible expenses including the operating expenses of I&G in managing the platform, and adverse movement in exchange rate and interest rate; (iv) GLRA for receiving ADB loan proceeds for guarantee loss reserve,

³⁷ For performance bond, only guarantee letter will be provided, which shall include the detailed information of the subproject.

Project Implementation Organizations	Management Roles and Responsibilities
	<p>expected return of the guarantee loss reserve fund and payment of any credit losses; and (v) CCA for receiving conversion of euro to CNY before transferring to subprojects;</p> <ul style="list-style-type: none"> • Review and assess subproject applications according to the selection criteria and approval process for subprojects described in this PAM; • Approve entrusted loans and guarantees for subprojects to be financed; • Obtain ADB's no objection where it is required; • Enter into entrusted loan agreements with subborrowers and the financial leasing companies for the entrusted loan; • Issue guarantees to cofinancing lenders; • Enter into entrusted loan agreements with financial leasing companies. • Enter into guarantee counter-indemnity agreement with subborrowers for providing guarantee, for subborrowers to receive financing from the cofinanciers; • Enter into financial asset purchase agreement with bond issuers for the guarantee loss reserve if I&G decides to purchase bonds; • Enter into equity investment agreements with early stage companies and inject equity into such company; • Establish a credit risk management mechanism to monitor its credit risk, interest rate risk and exchange rate risk in connection with the project; • Ensure the establishment and implementation of an ESMS as agreed with ADB, ensure environmental and social safeguards compliance of all subprojects under the project; • Establish and implement project grievance redress mechanism; • Monitor the implementation progress of subprojects, including compliance with the terms and conditions of the project implementing contracts. Require remedial actions in the event of noncompliance with the obligations; • Prepare the ADB loan withdrawal applications with the necessary supporting documents described in the disbursement section of this PAM; • Participate in the external audit of project accounts by providing ADB access to project auditors; • Monitor interest payment, guarantee fees, return from early stage investment, return from guarantee loss reserve fund and principal repayment of entrusted loans, and equity investment by the subborrowers; • Monitor the performance of BOB; • Prepare and submit (i) semi-annual project progress report; (ii) semi-annual ESMS implementation reports during the implementation period and annual report during the operation period; (iii) semi-annual consolidated environmental monitoring reports during the first three years after loan effectiveness and annually until project closure, (iv) consolidated audited statement of utilization of funds; (v) audited entity financial statements of I&G, SDIC, BOB, and each financial leasing company; and (vi) a completion report on the utilization of the Loan, the execution of the subprojects, their costs, the performance by I&G of its obligations under the Project Agreement and the accomplishment of the purposes of the loan within 3 months after the end of the grace period or as ADB otherwise specified; and • Liaise with ADB, BOB, financial leasing companies, cofinancing commercial banks, subborrowers and other stakeholders.

Project Implementation Organizations	Management Roles and Responsibilities
Entrusted Bank (Bank of Beijing)	<ul style="list-style-type: none"> • Enter into FCA with I&G; • Manage(i) EWA; (ii) RFA;(iii) IDA; (iv) GLRA; and (v) CCA; • Provide cofinancing for subprojects when I&G provide guarantee to the same subprojects; • Participate in subproject due diligence along with I&G when it proposes to cofinance with I&G; • Propose subproject for cofinancing to I&G; • Manage exchanges of foreign and domestic currencies for I&G; • Disburse the entrusted loan to subborrowers and financial leasing companies and equity investment to equity investees within 3 days of receipt of ADB loan proceeds to I&G's EWA; • Disburse the amount for early stage investment; • Disburse the amount for investments in high credit quality and highly liquid financial assets based I&G's instruction; and • Submit entity annual audited financial statements to ADB, through I&G.
Subborrowers and Equity Investees (end-borrowers of ADB funds)	<ul style="list-style-type: none"> • Repay the loan principals; • Pay interest and guarantee fees in a timely manner as stated in the relevant agreements; • Implement subprojects in accordance with the project implementing contracts; • Ensure the subborrowers, financial leasing companies, and equity investees comply with the requirements assigned to them under the ESMS, including provide information and reports required to I&G; • Get approvals from relevant authorities such as local environmental protection bureaus and the Development Reform Commissions; • Undertake the procurement of goods and works in compliance with the procurement manual; and • Provide monitoring and evaluation information and participate in the completion review of the subproject.
ADB	<ul style="list-style-type: none"> • Provide guidance and support to executing and implementing agencies to ensure compliance with Loan and Project Agreements; • Disburse the loan in accordance with the agreed procedures upon receipt of duly authorized withdrawal applications and necessary supporting documentation; • Review project progress reports and monitors implementation of ESMS; • Review and endorse applications of certain subprojects; • Require I&G to act on any non-compliance issues; • Conduct regular loan review missions, midterm review mission, and project completion mission; and • Review annual audit reports and follow up on audit recommendations.

ADB = Asian Development Bank, BOB = Bank of Beijing, BTH = Beijing-Tianjin-Hebei, CCA = CNY conversion account, CNY = Chinese Yuan, EWA = euro withdrawal account, ESMS = Environmental and Social Management System, FCA = framework cooperation agreement, GLRA = guarantee loss reserve account, GRM = grievance redress mechanism, IDA = interest differential account, I&G = China National Investment and Guaranty Corporation, MOEP = Ministry of Environmental Protection, MOF = Ministry of Finance, NDRC = National Development Reform Commission, PAM = Project Administration Manual, PMO = project management office, RFA = recycled funds account, SDIC = State Development & Investment Corporation.

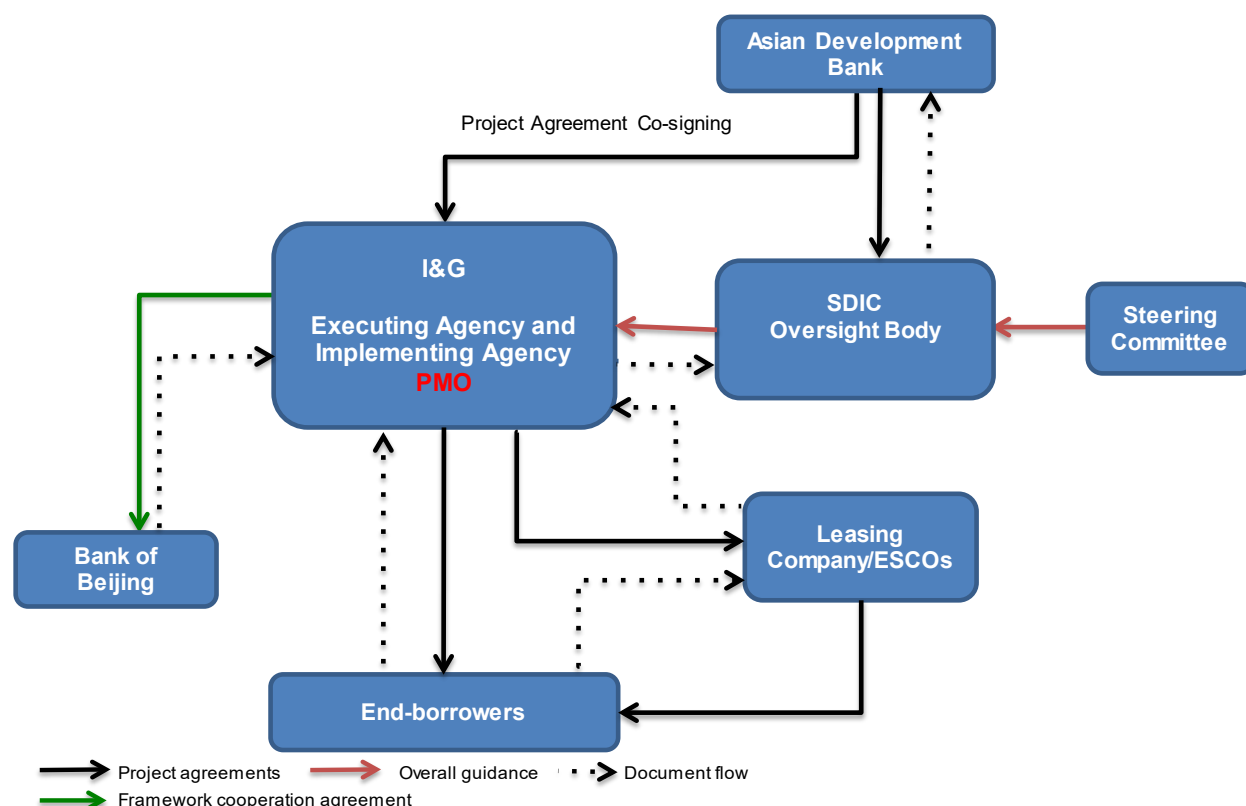
Source: Asian Development Bank estimates.

C. Key Persons Involved in Implementation

Executing Agency	
State Development & Investment Corporation	Mr. Liu Xiaotian Project Manager, Strategy Development Division +861066579547 liuxiaotian@sdic.com.cn SDIC Building 6, No. 6 Beidajie, Fuchengmen, Xicheng District, Beijing
<hr/>	
Implementing Agency	
China National Investment and Guaranty Corporation	Ms. Duan Xiumei Deputy General Manager, Legal Affair Center, I&G +861088822632 duanxm@guaranty.com.cn 9 Floor, Office Building, No.100 Xisanhuan Beilu, Haidian District, Beijing
<hr/>	
Asian Development Bank	Ms. Sujata Gupta
Sustainable Infrastructure Division, East Asia (EASI)	Director Telephone No: +63-2-8632 6156 Email address: sgupta@adb.org
Mission Leader	Ms. Yun Zhou Senior Energy Specialist Telephone No.: +63-2-8632 5418 Email address: yunzhou@adb.org

D. Project Organization Structure

Figure 1: Project Organization Chart



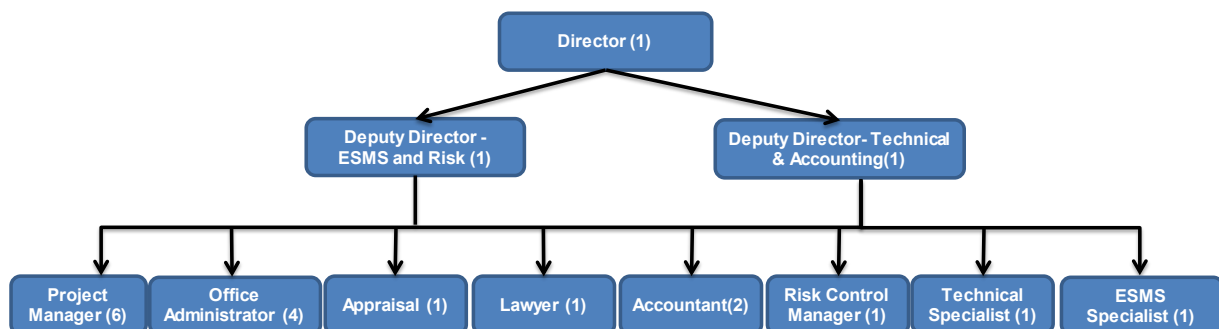
ESCO = energy service companies, I&G = China National Investment and Guaranty Corporation, SDIC = State Development & Investment Corporation.

Source: Asian Development Bank Estimates

28. I&G has established a dedicated full-time PMO with around 20 experienced staff with academic qualifications and experience in technical, environmental and financial responsible for implementation and management of the project including two staff responsible for the ESMS establishment, operation and reporting. I&G will provide staff resources and keep sufficient experienced staff in the PMO. The PMO should at least include and maintain the positions shown in Figure 2. The PMO must have a team of experts with expertise to conduct but not limited to the following (i) assessing the risk profile of the subprojects or investees, (ii) evaluating the technology and business model, (iii) assessing capacity of the subborrowers, (iv) reviewing and assessing subproject applications according to the selection criteria and approval process for subprojects; (v) approving entrusted loans and guarantees for subprojects to be financed; (vi) obtaining ADB's no objection where it is required; (vii) issuance of guarantees to cofinancing lenders; (viii) establishing a credit risk management mechanism to monitor its credit risk, interest rate risk and exchange rate risk in connection with the project; (iv) monitoring the implementation progress of subprojects, including compliance with the terms and conditions of the project implementing contracts; (x) taking remedial actions in the event of noncompliance with the obligations; (xi) preparing the ADB loan withdrawal applications; (xii) participating in the external audit of project accounts by providing ADB access to project auditors; (xiii) monitoring interest payment, guarantee fees, return from early stage investment, return from guarantee loss reserve fund and

principal repayment of entrusted loans, guarantee loss reserve and equity investment by the subborrowers; and (xiv) monitoring the performance of BOB.

Figure 2: PMO Organizational Chart



IV. COSTS AND FINANCING

29. The project consists of establishing the GFP to mobilize financing for energy efficiency, renewable and low carbon technologies and pollution control projects. The specific subprojects will be undertaken by a number of subborrowers. The financing provided through GFP will mainly be utilized by subborrowers for purchase and installation of equipment. It is not envisaged that the energy efficient and environment improvement projects to be financed under the project will have significant civil works or require land acquisition.

30. The subprojects will be financed through a combination of subborrower's equity contribution and entrusted loans and financial leasing companies provided using ADB loan funds and cofinancing provided by domestic commercial banks with or without guarantee support from the GFP. The interest during construction of entrusted loans and cofinancing loans of subprojects are included in the cost estimates of appraised subprojects. The subproject cost estimates also include the taxes and duties, transport and insurance cost.

31. The investment cost of first batch of subprojects is estimated to be €1,675.0million including the financial charges on debts. An estimated €1.2 billion cofinancing is expected from first batch subprojects. Since the payback period of subprojects is typically 3–8 years, as the initial batch of subloans is repaid, the proceeds will be re-lent to another set of subprojects. It is expected that reflows from subprojects will be re-lent to finance additional batches of subprojects having an investment requirement of approximately €1.2 billion each. Hence, the total investment to be mobilized by GFP is expected to be in the range of €3.6billion.

32. The government has requested a loan of €458 million from ADB's ordinary capital resources to help finance the project. The loan size is based on government's development financing needs and potential development impact. The government's green development-related financing need is estimated at \$1 trillion from 2016–2020. The government intends to meet this gap by mobilizing cofinancing from domestic and international sources. For the proposed loan domestic cofinancing should comprise borrowing of €863 million from local commercial banks and financial institutions, including but not limited to BOB, China Development Bank, China Merchant Bank, Guangfa Bank, China CITIC Bank, and China Everbright Bank. ADB's project will help meet part of the financing needs. ADB and the domestic commercial banks and financial institutions will enter into a separate collaborative cofinancing arrangement in the form of a memorandum of understanding to ensure the application of ADB policies and other requirements.

33. The loan will have a 15-year term, including a grace period of 10 years,³⁸ an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR) lending facility, a commitment charge of 0.15% per year, an annuity repayment at 10% discount rate option, and such other terms and conditions set forth in the Loan and Project agreements. The average loan maturity is 12.95 years; therefore, no maturity premium will be payable to ADB. The subborrowers are estimated to provide about €330million through counterpart contributions. Other cofinanciers are estimated to provide collaborative commercial cofinancing of €863.6 million.

A. Cost Estimates Preparation and Revisions

34. The cost estimates for appraised subprojects have been prepared by the project preparatory technical assistance consultants based on the information from subproject feasibility studies. The feasibility studies have been prepared by the subborrowers using domestic

³⁸ A longer grace period is essential to allow for an effective rollover of ADB loan proceeds.

accredited engineering design institutes. The cost estimates of subprojects to be identified and subsequent batches of subprojects are preliminary estimates and these estimates will be revised when these subprojects are identified and appraised. As and when the subproject cost estimates are verified, the cost estimates in Tables 6, 8, 9 and 10 will be revised.

B. Key Assumptions

35. The following key assumptions underpin the cost estimates and financing plan:

- (i) Exchange rate: CNY7.4300 = €1.00 (as of 1 November 2016).³⁹
- (ii) Physical contingencies computed at 5% of the total base cost. Price contingencies based on expected cumulative inflation over the implementation period are presented in Table 5. Contingencies include provision for potential exchange rate fluctuation under the assumption of the purchasing power parity exchange rate.

Table 5: Escalation Rates for Price Contingency Calculation

Item	2017	2018	2019	2020	2021	Average
Foreign rate of price inflation	1.4%	1.5%	1.5%	1.5%	1.5%	1.5%
Domestic rate of price inflation	2.3%	2.4%	2.4%	2.4%	2.4%	2.4%

Source: Asian Development Bank estimates.

- (iii) Interest during implementation for ADB loan has been computed at the euro 5-year swap rate plus a spread of 0.5%. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount.
- (iv) The interest during construction of entrusted loans and cofinancing loans were calculated assuming an interest rate of 5%.
- (v) I&G will provide some in-kind contributions in the form of office space and shared use of facilities. These were not included in the project cost estimates.

³⁹<http://www.exchangerates.org.uk/USD-CNY-exchange-rate-history.html>

C. Detailed Cost Estimates by Expenditure Category

36. The detailed cost estimates for appraised subprojects by expenditure category together is provided in Table 6. The cost estimates by expenditure category for the subsequent batches of subprojects will be prepared during project implementation.

**Table 6: Cost Estimates by Expenditure Category
(CNY million) (€ million)**

Item	In CNY Million			In € million			% of Base Cost
	Foreign Exchange	Local Currency	Total	Foreign Exchange	Local Currency	Total	
I. Appraised Subprojects							
Subproject 1 (Waste heat Recovery for District Heating)							
1. Base Costs	153.16	136.84	290.00	21.09	18.84	39.93	89.51%
a. Civil Works	6.92	27.68	34.60	0.95	3.81	4.76	10.68%
b. Equipment Cost	144.84	96.56	241.40	19.95	13.30	33.24	74.51%
c. Subproject Management Cost	1.40	12.60	14.00	0.19	1.74	1.93	4.32%
2. Contingencies	4.20	16.80	21.00	0.58	2.31	2.89	6.48%
3. Finance Charges During Construction	13.00	0.00	13.00	1.79	0.00	1.79	4.01%
Subtotal (1)	170.36	153.64	324.00	23.46	21.16	44.62	100.00%
Subproject 2 (Harnessing Biomass Energy from Agricultural Waste in Hebei)							
1. Base Costs	152.73	235.56	388.29	20.69	31.92	52.61	95.47%
a. Civil Works	27.35	109.42	136.77	3.71	14.82	18.53	33.63%
b. Equipment Cost	120.27	80.18	200.45	16.30	10.86	27.16	49.29%
c. Subproject Management Cost	5.11	45.96	51.07	0.69	6.23	6.92	12.56%
2. Contingencies	1.82	7.27	9.09	0.25	0.99	1.23	2.24%
3. Finance Charges During Construction	9.33	0.00	9.33	1.26	0.00	1.26	2.29%
Subtotal (2)	163.88	242.83	406.71	22.20	32.90	55.11	100.00%
Subproject 3 (Desulfurization and Denitrification System to Reduce Emission in Tianjin and Shanxi)							
1. Base Costs	19.94	49.44	69.38	2.75	6.81	9.55	86.21%
a. Civil Works	1.00	4.00	5.00	0.14	0.55	0.69	6.21%
b. Equipment Cost	15.00	10.00	25.00	2.07	1.38	3.44	31.07%
c. Subproject Management Cost	3.94	35.44	39.38	0.54	4.88	5.42	48.93%
2. Contingencies	1.39	5.55	6.94	0.19	0.76	0.96	8.62%
3. Finance Charges During Construction	4.16	0.00	4.16	0.57	0.00	0.57	5.17%
Subtotal (3)	25.49	54.99	80.48	3.51	7.57	11.08	100.00%
Subproject 4 (Distributed Energy for Shilong Economic Development Park in Beijing)							
1. Base Costs	15.12	25.02	40.15	2.05	3.39	5.44	87.74%
a. Civil Works	2.02	8.08	10.10	0.27	1.09	1.37	22.07%
b. Equipment Cost	12.12	8.08	20.20	1.64	1.09	2.74	44.14%
c. Subproject Management Cost	0.98	8.86	9.85	0.13	1.20	1.33	21.52%
2. Contingencies	0.92	3.70	4.60	0.12	0.50	0.63	10.10%
3. Finance Charges During Construction	0.20	0.81	1.01	0.03	0.11	0.14	2.21%
Subtotal (4)	8.12	37.64	45.76	1.10	5.10	6.20	100.00%
Subproject 5 (Green leasing)							
1. Base Costs	267.69	267.65	535.34	36.27	36.26	72.53	87.81%
a. Civil Works	18.06	72.24	90.30	2.45	9.79	12.23	14.81%
b. Equipment Cost	246.15	164.10	410.25	33.35	22.23	55.58	67.29%
c. Subproject Management Cost	3.48	31.31	34.79	0.47	4.24	4.71	5.71%
2. Contingencies	12.22	48.88	61.10	1.66	6.62	8.28	10.02%
3. Finance Charges During Construction	2.64	10.56	13.20	0.36	1.43	1.79	2.17%
Subtotal (5)	83.99	525.65	609.64	11.38	71.22	82.60	100.00%
Subproject 6 (Distributed Energy for Space Heating in Zhengding District Hebei)							
1. Base Costs	51.95	45.47	97.42	7.04	6.16	13.20	89.04%
a. Civil Works	2.00	8.00	10.00	0.27	1.08	1.35	9.14%
b. Equipment Cost	49.45	32.97	82.42	6.70	4.47	11.17	75.33%
c. Subproject Management Cost	0.50	4.50	5.00	0.07	0.61	0.68	4.57%
2. Contingencies	1.00	4.00	5.00	0.14	0.54	0.68	4.57%

Item	In CNY Million			In € million			% of Base Cost
	Foreign Exchange	Local Currency	Total	Foreign Exchange	Local Currency	Total	
3. Finance Charges During Construction	6.99	0.00	6.99	0.95	0.00	0.95	6.39%
Subtotal (6)	59.94	49.47	109.41	8.12	6.70	14.82	100.00%
Subproject 7 (Scale Up Energy Efficiency in Buildings)							
1. Base Costs	1.04	0.98	2.02	0.14	0.14	0.28	95.42%
a. Civil Works	0.05	0.19	0.24	0.01	0.03	0.03	11.11%
b. Equipment Cost	0.97	0.65	1.62	0.13	0.09	0.22	76.56%
c. Subproject Management Cost	0.02	0.15	0.16	0.00	0.02	0.02	7.75%
2. Contingencies	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
3. Finance Charges During Construction	0.10	0.00	0.10	0.01	0.00	0.01	4.58%
Subtotal (7)	1.13	0.98	2.12	0.16	0.14	0.29	100.00%
Subproject 8 (Wind Farm Development in Shandong)							
1. Base Costs	175.95	184.05	360.00	23.84	24.94	48.78	86.21%
a. Civil Works	9.30	37.20	46.50	1.26	5.04	6.30	11.14%
b. Equipment Cost	162.36	108.24	270.60	22.00	14.67	36.66	64.80%
c. Subproject Management Cost	4.29	38.61	42.90	0.58	5.23	5.81	10.27%
2. Contingencies	7.20	28.80	36.00	0.98	3.90	4.88	8.62%
3. Finance Charges During Construction	21.60	0.00	21.60	2.93	0.00	2.93	5.17%
Subtotal (8)	204.75	212.85	417.60	27.74	28.84	56.58	100.00%
Subproject 9 (Investment in R&D for Smart Electric Bicycles)							
1. Base Costs	13.34	59.05	72.38	1.81	8.00	9.81	89.00%
a. Civil Works	0.36	2.85	3.56	0.05	0.39	0.43	3.94%
b. Equipment Cost	12.95	55.55	68.50	1.75	7.53	9.28	84.22%
c. Subproject Management Cost	0.03	0.29	0.32	0.00	0.04	0.04	0.39%
2. Contingencies	0.81	7.29	8.10	0.11	0.99	1.10	9.96%
3. Finance Charges During Construction	0.17	0.68	0.85	0.02	0.09	0.12	1.05%
Subtotal (9)	14.32	67.02	81.33	1.94	9.08	11.02	100.00%
Subproject 10 (Investment in R&D of Energy Saving Equipment)							
1. Base Costs	25.08	65.13	90.21	3.40	8.82	12.22	88.76%
a. Civil Works	2.14	17.11	21.39	0.29	2.32	2.61	18.94%
b. Equipment Cost	22.91	45.59	68.50	3.10	6.18	9.28	67.40%
c. Subproject Management Cost	0.03	0.29	0.32	0.00	0.04	0.04	0.31%
2. Contingencies	1.02	9.18	10.20	0.14	1.24	1.38	10.04%
3. Finance Charges During Construction	0.24	0.98	1.22	0.03	0.13	0.17	1.20%
Subtotal (10)	26.35	75.28	101.63	3.57	10.20	13.77	100.00%
Subproject 11 (Waste heat Recovery for District Heating in Hebei)							
1. Base Costs	136.00	164.00	300.00	18.43	22.22	40.65	90.91%
a. Civil Works	12.00	48.00	60.00	1.63	6.50	8.13	18.18%
b. Equipment Cost	120.00	80.00	200.00	16.26	10.84	27.10	60.61%
c. Subproject Management Cost	4.00	36.00	40.00	0.54	4.88	5.42	12.12%
2. Contingencies	2.00	8.00	10.00	0.27	1.08	1.35	3.03%
3. Finance Charges During Construction	20.00	0.00	20.00	2.71	0.00	2.71	6.06%
Subtotal (11)	158.00	172.00	330.00	21.41	23.30	44.71	100.00%
Sub Total (1-11)	916.33	1,517.06	2,508.67	124.59	216.21	340.80	
II. Subprojects to be Identified*	4,049.29	4,949.13	8,998.42	548.64	670.56	1,219.20	
III. Project Management Expenses of I&G	17.27	155.44	172.71	2.34	21.06	23.4	
IV. Green Bond Used for Guarantees	676.06	0.00	676.06	91.60	0.00	91.6	
Total Project Cost (I+II+III+IV+V)	5,658.95	6,621.63	12,355.86	767.17	907.83	1,675.00	

I&G = China National Investment and Guaranty Corporation, R&D = research and development.

* The interest cost of ADB loan proceeds during implementation has been estimated to be €5.5 million is not included.

Sources: Asian Development Bank estimates.

D. Allocation and Withdrawal of Loan Proceeds

37. The ADB loan proceeds have been allocated for entrusted loans, equity investments, and guarantee loss reserve, as described in Table 7. The category for allocation of entrusted loan and equity investment includes allocation to subprojects which are already appraised, to be appraised and identified during loan implementation based on the financing requirements of these subprojects. It is expected that allocation for entrusted loan will be no less than €249.8 million, financial leasing no greater than €91.6 million, and equity investments no greater than €25 million. In order to manage its liquidity reserve for guarantees, I&G will use ADB loan proceeds for investments in high credit quality and highly liquid financial assets. The initial allocation of ADB loan proceeds to support the guarantee facility will be capped at €91.6 million.

Table 7: Allocation and Withdrawal of Loan Proceeds

No.	Category	Total Amount Allocated for ADB Financing (€ million)	Percentage and Basis for Withdrawal from the Loan Account
1.	Provision of Entrusted Loans and Equity Investments ^a	366.40	100% of expenditures claimed
2.	Provision of Guarantee Loss Reserve ^{a,b}	91.60	100% of expenditures claimed
Total		458.00	

ADB = Asian Development Bank, BOB = Bank of Beijing, ESMS = environmental and social management system, FCA = framework cooperation agreement, I&G = China National Investment and Guaranty Corporation, MOF = Ministry of Finance, SDIC = State Development & Investment Corporation .

^a No withdrawals shall be made until the following have been met: (i) the onlending agreement between MOF and SDIC and I&G, and the FCA between I&G and BOB have been signed; (ii) templates for a leasing subproject agreement, a general entrusted loan agreement, a financial leasing company entrusted loan agreement and such other project implementing contracts, as applicable, have been approved by ADB; (iii) a Chinese yuan account has been opened in the entrusted bank; and (iv) an ESMS has been adopted by I&G.

^b The maximum amount that Borrower may withdraw from the Loan Account in each withdrawal under Category 2 (Guarantee Loss Reserve) in the Table 13. After the first withdrawal under such Category, I&G may not make any subsequent withdrawal under such Category until it has provided evidence satisfactory to ADB that guarantees in the amount specified in the Table 13 as a condition to such subsequent withdrawal.

Source: Asian Development Bank estimates.

E. Detailed Cost Estimates by Financier (€ million)

Item	ADB Loan		Cofinancing Banks		Sub Borrower		I&G		Total	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
I. Appraised Subprojects										
Subproject 1 (Waste heat Recovery for District Heating)	17.99	40.32%	-	0.00%	26.63	59.68%	-	0.00%	44.62	100.00%
Subproject 2 (Harnessing Biomass Energy from Agricultural Waste in Hebei)	41.31	74.97%	13.77	24.99%	0.02	0.04%	-	0.00%	55.11	100.00%
Subproject 3 (Desulfurization and Denitrification System to Reduce Emission in Tianjin and Shanxi)	4.65	41.96%	-	0.00%	6.43	58.04%	-	0.00%	11.08	100.00%
Subproject 4 (Distributed Energy for Shilong Economic Development Park in Beijing)	4.96	80.00%	-	0.00%	1.24	20.00%	-	0.00%	6.20	100.00%
Subproject 5 (Green leasing)	41.30	50.00%	-	0.00%	41.30	50.00%	-	0.00%	82.60	100.00%
Subproject 6 (Distributed Energy for Space Heating in Zhengding District Hebei)	11.01	74.27%	-	0.00%	3.81	25.73%	-	0.00%	14.82	100.00%
Subproject 7 (Scale Up Energy Efficiency in Buildings)	0.23	80.00%	-	0.00%	0.06	20.00%	-	0.00%	0.29	100.00%
Subproject 8 (Wind Farm Development in Shandong)	40.26	71.15%	-	0.00%	16.32	28.85%	-	0.00%	56.58	100.00%
Subproject 9 (Investment in R&D for Smart Electric Bicycles)	1.38	12.52%	-	0.00%	9.64	87.48%	-	0.00%	11.02	100.00%
Subproject 10 (Investment in R&D of Energy Saving Equipment)	1.38	10.02%	-	0.00%	12.39	89.98%	-	0.00%	13.77	100.00%
Subproject 11 (Waste heat Recovery for District Heating in Hebei)	27.53	61.57%	-	0.00%	117.85	263.57%	-	0.00%	44.71	100.00%
Sub Total (1-11)	192.00	56.34%	13.77	4.04%	235.69	69.16%	-	0.00%	340.80	100.00%
II. Subprojects to be Identified*	174.40	14.30%	863.64	70.84%	181.16	14.86%	-	0.00%	1,219.20	100.00%
III. Project Management Expenses of I&G	23.40	100.00%	-	0.00%	-	0.00%	23.40	100.00%	23.40	100.00%
IV. Green Bond Used for Guarantees	91.60	100.00%	-	0.00%	-	0.00%	-	0.00%	91.60	100.00%
Total Project Cost (I+II+III+IV+V)	458.0	27.34%	863.6	51.56%	299.0	17.85%	23.4	1.40%	1,675.0	100.00%

* The interest cost of ADB loan proceeds during implementation has been estimated to be € 5.5 million is not included.

Sources: Asian Development Bank estimates.

Table 9: Detailed Cost Estimates by Output (€ million)

	Total Cost	Output 1: Established green financing platform and leveraged commercial financing for pollution-reduction projects	Output 2: Lowered barriers and scaled-up financing for small and medium-sized enterprises and energy service companies from the green financing platform	Output 3: Strengthened capacity in new financial products and to appraise and implement green financing projects
I. Appraised Subprojects				
Subproject 1 (Waste heat Recovery for District Heating)				
1. Base Costs	6.47	0.00	6.33	0.14
a. Civil Works	0.63		0.63	
b. Equipment Cost	5.70		5.70	
c. Subproject Management Cost	0.14		0.00	0.14
2. Contingencies	0.14		0.14	
3. Finance Charges During Construction	0.41		0.41	
Subtotal (1)	7.02	0.00	6.89	0.14
Subproject 2 (Harnessing Biomass Energy from Agricultural Waste in Hebei)				
1. Base Costs	33.46	31.67		1.79
a. Civil Works	4.13	4.13		
b. Equipment Cost	27.54	27.54		
c. Subproject Management Cost	1.79	0.00		1.79
2. Contingencies	2.75	2.75		
3. Finance Charges During Construction	1.38	1.38		
Subtotal (2)	37.59	35.80		1.79
Subproject 3 (Desulfurization and Denitrification System to Reduce Emission in Tianjin and Shanxi)				
1. Base Costs	53.47		46.44	7.03
a. Civil Works	18.83		18.83	
b. Equipment Cost	27.60		27.60	
c. Subproject Management Cost	7.03		0.00	7.03
2. Contingencies	1.25		1.25	
3. Finance Charges During Construction	1.28		1.28	
Subtotal (3)	56.01		48.97	7.03
Subproject 4 (Distributed Energy for Shilong Economic Development Park in Beijing)				
1. Base Costs	1.91	0.00	0.83	1.08
a. Civil Works	0.14		0.14	
b. Equipment Cost	0.69		0.69	
c. Subproject Management Cost	1.08		0.00	1.08
2. Contingencies	0.19		0.19	
3. Finance Charges During Construction	0.11		0.11	
Subtotal (4)	2.22	0.00	1.13	1.08

	Total Cost	Output 1: Established green financing platform and leveraged commercial financing for pollution-reduction projects	Output 2: Lowered barriers and scaled-up financing for small and medium-sized enterprises and energy service companies from the green financing platform	Output 3: Strengthened capacity in new financial products and to appraise and implement green financing projects
Subproject 5 (Green leasing)				
1. Base Costs	3.82	0.00	1.65	2.17
a. Civil Works	0.28		0.28	
b. Equipment Cost	1.38		1.38	
c. Subproject Management Cost	2.17		0.00	2.17
2. Contingencies	0.38		0.38	
3. Finance Charges During Construction	0.23		0.23	
Subtotal (5)	4.43	0.00	2.26	2.17
Subproject 6 (Distributed Energy for Space Heating in Zhengding District Hebei)				
1. Base Costs	13.41		12.73	0.69
a. Civil Works	1.38		1.38	
b. Equipment Cost	11.35		11.35	
c. Subproject Management Cost	0.69		0.00	0.69
2. Contingencies	0.69		0.69	
3. Finance Charges During Construction	0.96		0.96	
Subtotal (6)	15.07		14.38	0.69
Subproject 7 (Scale Up Energy Efficiency in Buildings)				
1. Base Costs	0.07		0.07	0.00
a. Civil Works	0.01		0.01	
b. Equipment Cost	0.05		0.05	
c. Subproject Management Cost	0.00		0.00	0.00
2. Contingencies	0.00		0.00	
3. Finance Charges During Construction	0.00		0.00	
Subtotal (7)	0.07		0.07	0.00
Subproject 8 (Wind Farm Development in Shandong)				
1. Base Costs	0.21	0.21		0.02
a. Civil Works	0.02	0.02		
b. Equipment Cost	0.17	0.17		
c. Subproject Management Cost	0.02	0.02		0.02
2. Contingencies	0.00	0.00		
3. Finance Charges During Construction	0.01	0.01		
Subtotal (8)	0.22	0.22		0.02
Subproject 9 (Investment in R&D for Smart Electric Bicycles)				
1. Base Costs	49.57		43.67	5.91
a. Civil Works	6.40		6.40	

	Total Cost	Output 1: Established green financing platform and leveraged commercial financing for pollution-reduction projects	Output 2: Lowered barriers and scaled-up financing for small and medium-sized enterprises and energy service companies from the green financing platform	Output 3: Strengthened capacity in new financial products and to appraise and implement green financing projects
b. Equipment Cost	37.26		37.26	
c. Subproject Management Cost	5.91		0.00	5.91
2. Contingencies	4.96		4.96	
3. Finance Charges During Construction	2.97		2.97	
Subtotal (9)	57.51		51.60	5.91
Subproject 10 (Investment in R&D of Energy Saving Equipment)				
1. Base Costs	41.31	0.00	35.80	5.51
a. Civil Works	8.26		8.26	
b. Equipment Cost	27.54		27.54	
c. Subproject Management Cost	5.51		0.00	5.51
2. Contingencies	1.38		1.38	
3. Finance Charges During Construction	2.75		2.75	
Subtotal (10)	45.44	0.00	39.93	5.51
Subproject 11 (Waste heat Recovery for District Heating in Hebei)				
1. Base Costs	1334.42	0.00	115.00	1675.00
a. Civil Works	23.40		23.40	
b. Equipment Cost	91.60		91.60	
c. Subproject Management Cost	1675.00		0.00	1675.00
2. Contingencies	0.00		0.00	
3. Finance Charges During Construction	0.00		0.00	
Subtotal (11)	0.00	0.00	115.00	1675.00
Sub Total (1-11)	225.58	36.02	165.24	24.34
II. Subprojects to be Identified*	1,334.42	467.05	600.49	66.72
III. Project Management Expenses of I&G	23.40			23.40
IV. Green Bond Used for Guarantees	91.60	27.48	18.32	
Total Project Cost (I+II+III+IV+V)	1,675.00	530.5	784.0	114.5

ADB = Asian Development Bank, I&G = China National Investment and Guaranty Corporation, R&D = research and development, SME = small and medium-sized enterprise.

*The interest cost of ADB loan proceeds during implementation estimated at € 5.5 million is not included.

Note: Numbers may not sum precisely because of rounding.

Source: Asian Development Bank estimates.

F. Detailed Cost Estimates by Year

38. The yearly breakdown of subproject cost estimates by subproject approval and utilization is provided in the Table 10 for appraised subprojects. The details of subprojects to be identified are indicative at this stage and these will be verified and Table 10 will be revised during loan implementation.

Table 10: Detailed Cost Estimates by Year (€ million)

Item	Total cost	Detailed Cost Estimates by Year (€ million)									
		2017		2018		2019		2020		2021	
		Approval	Utilization	Approval	Utilization	Approval	Utilization	Approval	Utilization	Approval	Utilization
I Appraised Subprojects											
Subproject 1 (Waste heat Recovery for District Heating)	7.02	7.02	3.51		3.51						
Subproject 2 (Harnessing Biomass Energy from Agricultural Waste in Hebei)	37.59	37.59	18.80		18.80						
Subproject 3 (Desulfurization and Denitrification System to Reduce Emission in Tianjin and Shanxi)	56.01	56.01	28.00		28.00						
Subproject 4 (Distributed Energy for Shilong Economic Development Park in Beijing)	2.22	2.22	1.11		1.11						
Subproject 5 (Green leasing)	4.43	4.43	2.22		2.22						
Subproject 6 (Distributed Energy for Space Heating in Zhengding District Hebei)	15.07	15.07	7.53		7.53						
Subproject 7 (Scale Up Energy Efficiency in Buildings)	0.07	0.07	0.07								
Subproject 8 (Wind Farm Development in Shandong)	0.22	0.22	0.22								
Subproject 9 (Investment in R&D for Smart Electric Bicycles)	57.51	57.51	28.75		28.75						
Subproject 10 (Investment in R&D of Energy Saving Equipment)	45.44	45.44	22.72		22.72						
Subproject 11 (Waste heat Recovery for District Heating in Hebei)	225.58	225.58	112.94		112.64						
II. Subprojects to be Identified*	1,334.42										
III. Project Management Expenses of I&G	23.40										
IV. Green Bond Used for Guarantees	91.60	20	20	20	20	20	20	20	20	20	20
Total Project Cost (I+II+III+IV+V)	1,675.00										

* The interest cost of ADB loan proceeds during implementation has been estimated to be € 5.5 million is not included.

I&G = China National Investment and Guaranty Corporation.

Source: ADB cost estimates.

G. Contract and Disbursement S-Curve

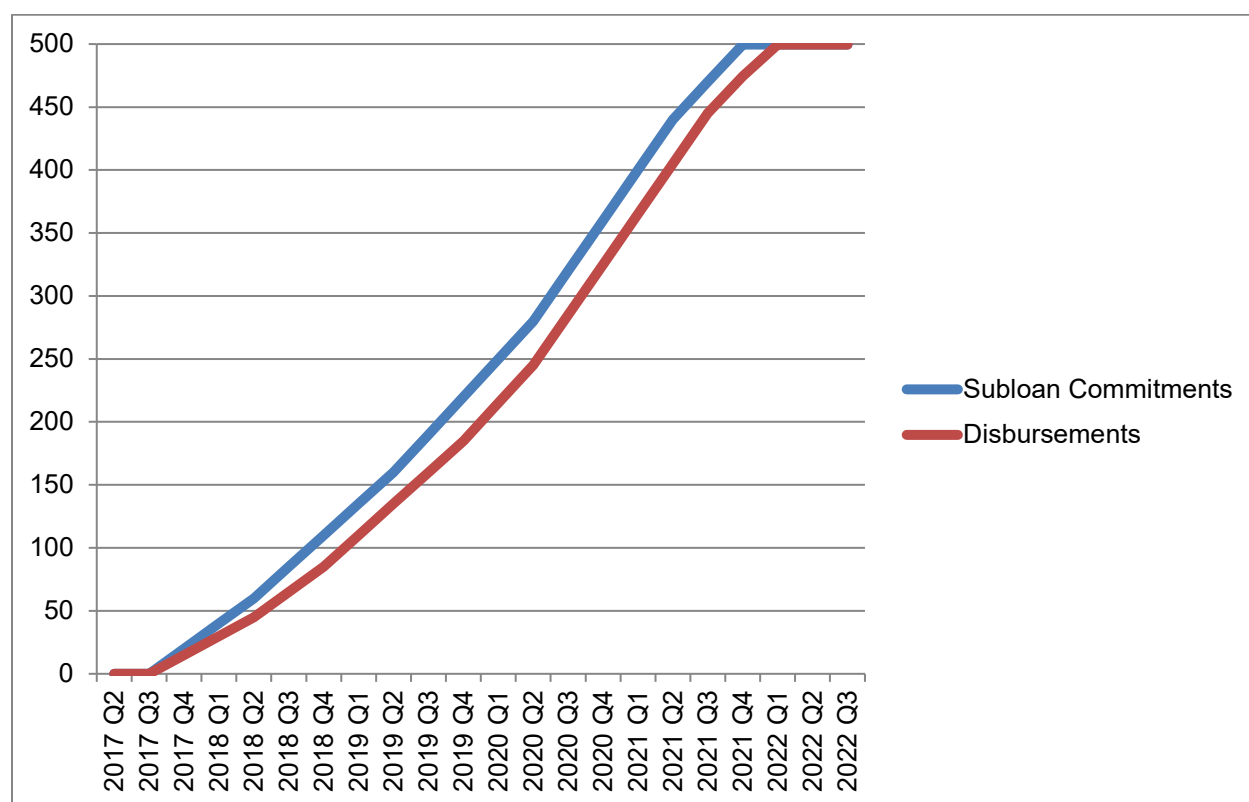
39. The S-curve (Figure 3) provides estimates of how the ADB loan funding will be committed and disbursed during the course of loan implementation. It is only for ADB financing which will be recorded in ADB's systems for internal monitoring and reporting purposes. Counterpart funds and any other cofinancing are therefore excluded. The projection for commitment in this case relates to approval of entrusted loans, guarantee loss reserve, financial leasing and equity investments.

Table 11: Commitment and Disbursements Projections
(\$ million)

Year	Subloan Commitments					Projected Disbursement				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2017				20	20				15	15
2018	20	20	25	25	90	15	15	20	20	70
2019	25	25	30	30	110	25	25	25	25	100
2020	30	30	40	40	140	30	30	40	40	140
2021	40	40	30	29.6	139.6	40	40	40	29.6	149.6
2022	0				0	25	0	0		25
Total					499.6					499.6

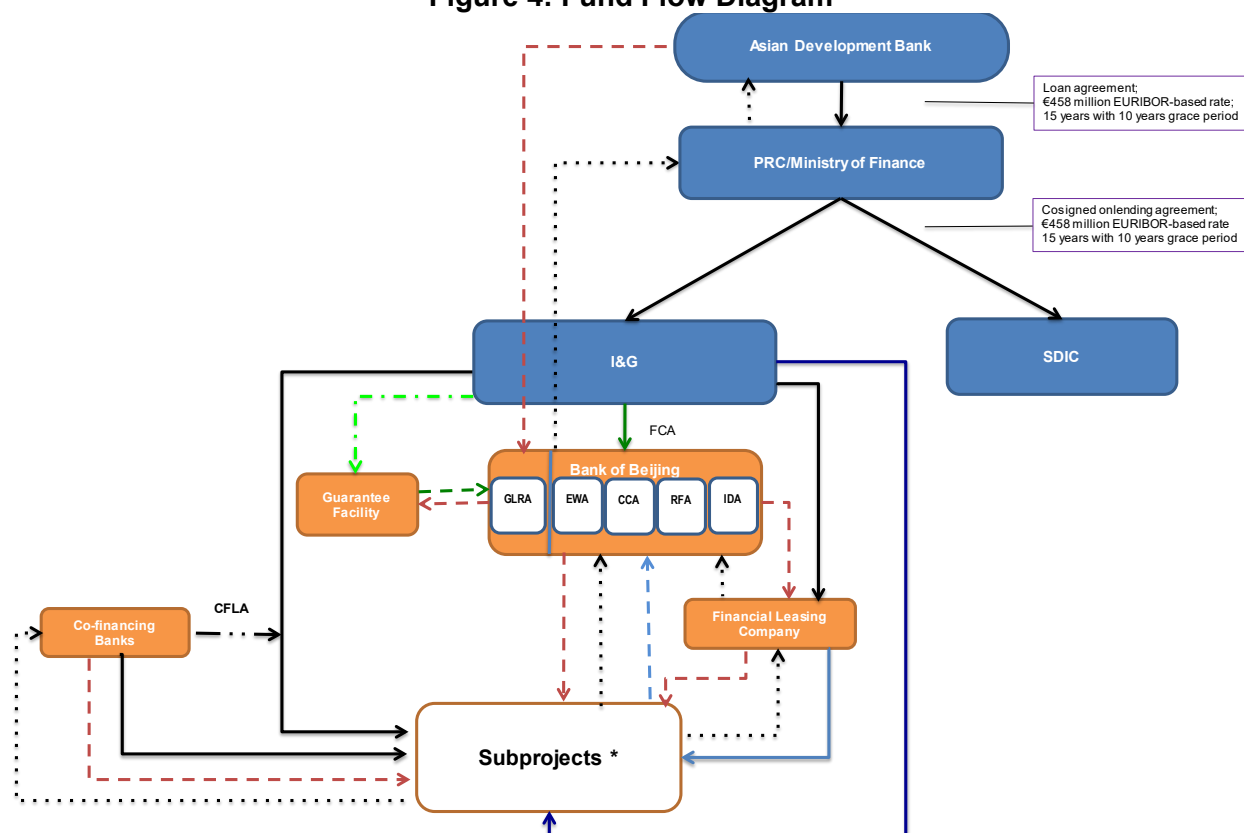
Source: Asian Development Bank.

Figure 3: Commitment and Disbursements S-Curve
(\$ million)



H. Fund Flow Diagram

Figure 4: Fund Flow Diagram



Legend:

- LA, OA, GLRA, EWA, CCA, RFA, IDA**
- loan repayment**
- framework cooperation agreement**
- financial assets purchase contract**
- return of guarantee loss reserve fund**
- indicative fund flow**
- cofinancing loan agreement**
- guarantee fee**
- counter-guarantee contract**
- leasing agreement**

* Subprojects includes subloans and equity investments in early stage companies.

CCA = CNY conversion account, CFLA = cofinancing loan agreement, EWA = euro withdrawal account, FCA = framework cooperation agreement, GLRA = guarantee loss reserve account, IDA = interest differential account, I&G = China National Investment and Guaranty Corporation, LA = Loan Agreement, OA = relending agreement, RFA = recycled fund account, PRC = People's Republic of China, SDIC = State Development & Investment Corporation.

Source: Asian Development Bank estimates.

40. Figure 4 shows the (i) agreements between ADB, PRC/MOF, SDIC, I&G, BOB, the financial leasing companies, investees, and subborrowers; and (ii) cash flows of ADB loan funds to subborrowers. The agreement flow, loan disbursement and fund flow are as follows:

- (i) ADB will enter into the Loan Agreement with PRC, acting through MOF, and MOF will enter into a onlending agreement with SDIC and I&G on the same terms as the agreement between ADB and MOF.
- (ii) I&G will enter into an FCA with BOB for the operation of the euro-denominated EWA, CNY-denominated RFA, IDA, CCA and GLRA, as well as acting as

- entrusted bank for the entrusted loans.
- (iii) I&G will enter into (a) entrusted loan agreements with subborrowers and financial leasing companies for the entrusted loans, (b) guarantee counter-indemnity agreement with subborrowers for providing guarantee, for subborrowers to receive financing from the cofinanciers, and (c) equity investment agreements with early stage companies.
- (iv) ADB loan proceeds will be disbursed to I&G's EWA maintained at BOB.
- (v) Upon receipt of loan proceeds, BOB will convert the loan proceeds into CNY in the CCA and transfer the funds to the subborrowers'/leasing companies' account and GLRA within three days of receipt of funds.
- (vi) The entrusted loan repayments will be divided to principal repayment and interest repayment, and these cash flows will be transferred by BOB to the RFA and IDA, respectively.
- (vii) The cash flows accumulated in the RFA after the completion of the initial subprojects will be used for financing subprojects until ADB loan principal repayments are due.
- (viii) The GLRA will receive (a) guarantee loss reserve fund after it is converted to CNY, (b) expected return of the guarantee loss reserve fund, and (c) payment of any credit losses.
- (ix) The IDA will receive (a) interest payments from entrusted loans, (b) guarantee fees from guarantee facility, and (c) the return from early stage investment.

V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

41. The financial management assessment (FMA)⁴⁰ was conducted in August 2016 in accordance with ADB's Guidelines for the Financial Management and Analysis of Projects and the Financial Due Diligence: A Methodology Note. The FMA considered the capacity of SDIC, I&G, and BOB, including funds-flow arrangements, staffing, accounting and financial reporting systems, financial information systems, and internal and external auditing arrangements. The FMA undertaken at project preparation did not include the financial leasing company, which will be conducted prior to loan approval by ADB.

42. The FMA results for SDIC, I&G, and BOB show that financial management systems and procedures for proper financial management and reporting are in place. These entities also have adequate accounting, reporting, and monitoring systems for ADB loan implementation. Entity-related governance risks are low with regards to (i) accounting policies and procedures, (ii) staffing, (iii) reporting and monitoring, (iv) information systems, (v) internal audit, and (vi) external audit.

43. The PMO staff is professional with long-standing years of experience. I&G uses mature and structured credit appraisal and project appraisal tools, procedures and investment decision processes. The staff is highly proficient in applying those systems. I&G has also proven successful track record in equity investments and established a successful partnership with a trust fund management company. I&G's credit and project appraisal process and tools equip the staff to structure each deal to suit its specific risk profile. For equity investments, I&G has partnered with fund management companies with successful track records and they can extend the cooperation for early stage investment for the proposed FIL project. ADB reviewed I&G's appraisal method, practices, and confirmed that I&G is well equipped to structure loan and guarantee deals to the needs and the risk profile of SME guarantees, secured and unsecured loans for SMEs, project financing, early stage investments, credit lines for ESCOs, financial leasing, and investment in high credit quality and highly liquid financial assets. The application of I&G's processes, standards, and systems is sufficient for the prudent implementation of the proposed FIL project.

44. I&G has implemented the World Bank/Global Environment Fund China Energy Conservation Promotion Project Phase II - ESCO Loan Guarantee Program during 2003–2009 and achieved excellent performance records, which demonstrates the company's experience in SME and energy efficiency project guarantees and investments. However, to date, I&G have not yet worked with ADB. Therefore, their staff may require training in ADB disbursement, procurement, reporting, and other procedures during project implementation. They will also undergo continuous capacity building during project implementation.

45. Risks in association with the ADB loan project have been identified. The overall assessment concluded that the financial management risk level of the project is low. The proposed mitigation action plan below is proposed to be implemented by the related parties:

⁴⁰ Financial Management Assessment (accessible from the list of supplementary documents in Appendix 2 of the Report and Recommendation of the President to the Board of Directors).

Table 12: Financial Management Action Plan

Risks	Impact	Likelihood	Risk Assessment^a	Proposed Mitigation
Inherent Risks				
<p>Country Specific Risks. National accounting standards as issued by the Ministry of Finance are equivalent to International Accounting Standards and acceptable to ADB. Audit reports of supreme audit institution are submitted timely in accordance with ADB requirements.</p> <p>ADB experiences in project implementation shows generally high financial management capacity and high rate of timely implementation of projects. Audit reports of supreme audit institution are submitted timely in accordance with ADB requirements.</p>	low	less likely	low	
<p>Entity Specific Risks (1). The structure might appear complex, but as a sophisticated NBF1, I&G, which has already been active in all major capital market segments, knows well about the designated financial products, the related players, the asset allocation skills, a large scope of client base and the associated risk mitigation skills. The complexity risk is low to I&G. Roles and responsibilities are well defined and partnership with the entrusted bank, the technical institute and environmental consulting company has been primarily established.</p>	low	unlikely	low	Documentation and reporting on the project operation shall follow the PAM requirement.
<p>Entity Specific Risks (2). Both SDIC and I&G are large central SOEs specialized in financial business. I&G has a long-standing experience in the (i) guarantee business, particularly for small and medium- sized enterprises, and (ii) investment operations, including liquidity management instruments, fixed-income investments and equity type investments. I&G was the PRC's first national guarantee institute. It is spearheading application of new risk management methods and controlling its operations according to internal standards to maintain high asset quality, profitability and liquidity. Once successfully tested by itself, it is working with regulators for the formulation of new guarantee company regulations. In addition, I&G has implemented the World Bank/Global Environment Fund <i>China Energy Conservation Promotion Project Phase II-ESCO Loan Guarantee Program</i> during 2003-2009 and achieved excellent performance records and gained experience in SME and EE project guarantees.</p>	low	unlikely	low	
<p>Entity Financial Strength. The financial standing of both SDIC and I&G is solid. Cosigning of the onlending agreement will enable SDIC to enhance the credit of I&G for the project, which will further reinforce the repayment capacity, and can minimize any default risk of ADB loan. In addition, their financial outlook is positive.</p>	low	unlikely	low	Audited financial statements of both SDIC and I&G shall be provided to ADB for monitoring purpose.

Risks	Impact	Likelihood	Risk Assessment ^a	Proposed Mitigation
Inherent Risks				
<p>Financial sustainability of the project implementation structure. The financial sustainability of the entire FIL project is tested with positive cash flows under very conservative assumptions.</p> <p>I&G is a leading and the largest guarantee institute in China. It has been quite profitable with averaged 49.2% of net profit margin in the past 5 years, and has consecutively achieved low compensation rate in the past 2 years (0.17% in 2014 and 0.018% in 2015). The net guarantee loss after obtaining recourse revenues is consecutively zero. I&G is familiar with the potential foreign exchange risk and interest risk management, and has proposed to borrow €458 million. It can seek SDIC's support for hedging foreign exchange risk since SDIC has EURO revenues from overseas investment projects.</p> <p>In addition, many commercial banks can provide swap products and advices to I&G to hedge these risks.</p> <p>As for the procurement of highly liquid financial assets, I&G may not be able to find attractive highly liquid financial assets with higher interest rate in sufficient amount, thus affecting the reflow account's liquidity, and further affecting the immediate funding support to replenish the compensation reserve account for guarantee portfolio.</p>	high	unlikely	moderate	<p>I&G has already commenced the search of suitable highly liquid financial assets. And if occasionally there is no sufficient highly liquid financial assets in the market, I&G is allowed to reallocate the planned green bond investment to entrusted loan.</p> <p>I&G to seek support in exchange rate and interest rate fluctuation risk management.</p> <p>80% or less total liabilities to assets ratio, maximum 8 times of financing guaranty leverage ratio and 3% or less compensation rate^b will be covenanted for I&G to ensure its sustainable operation.</p> <p>I&G will recruit competent banks for advices and deal arrangement in foreign exchange risk control and interest rate risk control.</p>
<p>Quality of due diligence and investment appraisal. I&G has established effective credit and project appraisal procedures, risk rating tools and investment decision processes for guarantee (including entrusted loan) and investment products respectively. Thereby, I&G is equipped to provide entrusted loan, credit lines and guarantees appropriate for each specific subproject/subborrower risk. For equity investments, I&G has partnered with fund management companies with successful track records and they can extend the cooperation for early stage equity investment for the ADB FIL project. In addition, I&G can cooperate with high-tech incubators for potential investment and risk sharing.</p>	low	unlikely	low	<p>I&G shall comply with PAM for selection of subprojects/companies. For credit and financial analysis of projects and risk structuring, the company shall apply its own systems, procedures, and investment decision processes.</p>
<p>Staffing. The accounting personnel at the SDIC, I&G and BOB have long-standing working experience and are excellently qualified with adequate financial skills. I&G has specially established a PMO staffed with 20 persons, whose responsibilities and tasks are well divided and clearly defined for implementing the project. At the moment, PMO has designated eight project managers responsible for the entrusted</p>	high	unlikely	substantial	<p>Ensuring the PMO has sufficient experienced staff by I&G will be covenanted. I&G is also committed to providing all necessary support to the PMO from other related departments.</p>

Risks	Impact	Likelihood	Risk Assessment ^a	Proposed Mitigation
Inherent Risks				
loan/guarantee products, and three professional staff for the investment operation. All of them have demonstrated high efficiency and good capability in subproject identification and due diligence survey before the fact-finding. The staffing of PMO is deemed adequate.				
Accounting policies and financial management system. The SDIC, I&G, and entrusted bank practice accrual accounting in accordance with the PRC's GAAP. The SDIC and I&G have all adopted Accounting Standards for Business Enterprises approved by MOF, which is consistent with IAS on a project accounting level. SDIC has established a complete system in budget management and asset management by applying enterprise resource planning. I&G will follow the same rules of SDIC.	low	less likely	low	Capacity training on ADB requirements and procedures of disbursement and procurement will be provided to ensure they are understood by all related staff in advance.
Internal audit. The day-to-day project accounting, monitoring, reporting, and audit will be the responsibility of I&G. I&G has an independent internal audit department staffed with eight qualified personnel and this department staffing is deemed adequate. The PRC Government is cracking down on corruption, in particular in central SOE. The governance during the project implementation is ensured. Continuous routine internal audits are carried out for I&G as well as for all new investment projects. The Audit Department of I&G has vast experience in project auditing.	low	unlikely	low	The project is subject to I&G-organized routine internal audit, with necessary adaptation to meet special ADB monitoring and reporting requirement.
External Audit. SDIC and I&G are subject to annual external audits from a group of CPA firms designated by SASAC. All these SASAC-designated auditing firms are experienced in auditing large-scale businesses, are familiar with the IAS and can provide proficient auditing services to the ADB loan related entities. The project will also receive government-organized audits after project completion.	low	unlikely	low	The project will be subject to annual external audit and government-organized acceptance audit.
Reporting and Monitoring. The reporting and monitoring of the project will be carried out mainly by I&G with guidance by the PAM.	low	less likely	low	The PAM will include guidance on preparing progress reports and annual reports.
Funds flow/Disbursement Arrangements. Fund flow will be much simpler than previous FIL projects. Since MOF agrees to accept the SDIC to provide credit enhancement measures that do not require involvement of a bank. SDIC and I&G will cosign the onlending agreement with MOF. Thereby there is no need of onlending agreement between SDIC and I&G. Furthermore, I&G has foreign currency account, so that they can directly receive ADB loan proceeds.	low	unlikely	low	A disbursement manual will be prepared. A disbursement training will be provided to strengthen capacity of all stakeholders.

Risks	Impact	Likelihood	Risk Assessment ^a	Proposed Mitigation
Inherent Risks				
Project implementation delay risks. The implementation structure is simpler than previous ADB energy efficiency and environment improvement FIL project without multiple layers of onlending. I&G is well prepared and they have a large customer base to allow them to quickly solicit potential sub projects. Thus, the project implementation delay risk is relatively low.	low	unlikely	low	ADB will provide support for formulation of key agreement templates.
Information Systems. Both SDIC and I&G use specialized accounting software, which is in compliance with the PRC Accounting Standards. The trusted bank has further sophisticated accounting software that can provide detailed project account transaction recording, loan fund flow tracking, financial book summary and archive index management	low	unlikely	low	
Overall Project Risk	high	unlikely	moderate	Implementing the mitigation actions recommended will reduce the risk to low.
Overall Risk	high	unlikely		

ADB = Asian Development Bank, BOB = Bank of Beijing, CPA = certified public accountant, ESCO = energy service company, FIL = financial intermediary loan, GAAP = generally accepted accounting principles, IAS = international accounting standards, I&G = China National Investment and Guaranty Corporation, NBFi = Non-bank Financial Institution, PAM = project administration manual, PMO = project management office, PRC = People's Republic of China, SASAC = State-owned Assets Supervision and Administration Commission, SDIC = State Development & Investment Corporation, SOE = state owned enterprise.

^a Pre-mitigation risks are assessed on a four-point scale of Low, Moderate, Substantial and High and are rated on a "as-is" basis.

^b Compensation rate is defined as compensation amount paid for guaranteed non-performing loans in a year / the expired guaranty amount in the year including the guaranty for non-performing loans. As per Chinese regulations, guarantee institute can get government's subsidy for SME guarantee loss on the condition that its compensation rate is no more than 2%.

Source: Asian Development Bank.

46. To ensure the smooth implementation of the FIL, I&G will ensure meeting the following financial covenants: (i) a maximum of eight times of financing guaranty leverage ratio, meaning that the outstanding guaranty provided by I&G at no time may exceed eight times of its net assets; (ii) a maximum of 80% of total liabilities to total assets ratio; and (iii) a guarantee compensation rate no greater than 3%.⁴¹

⁴¹ Guarantee compensation rate is defined as total compensation expenditure in the year divided by total expired guarantee amount for the year. The compensation amount paid for guaranteed non-performing loan is the gross amount the guarantee institution pays to the lending bank on behalf of the defaulted borrower, before recourse to collaterals. So if the recovery rate is assumed 50%, the net loss to I&G will be capped at 1.5% (=3% x [1%-50%]).

B. Disbursement

1. Disbursement Arrangements for ADB Funds

47. The loan proceeds will be disbursed in accordance with ADB's Loan Disbursement Handbook (2015, as amended from time to time), and detailed arrangements agreed upon between the government and ADB. Online training for project staff on disbursement policies and procedures is available.⁴² Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control. Pursuant to ADB's SPS (2009), ADB funds may not be applied to the activities described in the ADB Prohibited Investment Activities List set forth in Appendix 6. I&G and the cofinanciers will also ensure that their investments are in compliance with all applicable national laws and regulations.

48. Before the submission of the first withdrawal application, I&G through MOF will submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the government, together with the authenticated specimen signatures of each authorized person.⁴³ The minimum value per withdrawal application is in accordance with the Loan Disbursement Handbook. Individual payments below such amount should be paid by I&G and subsequently claimed to ADB through reimbursement, unless otherwise accepted by ADB.

49. Loan proceeds will be used for making subloans (including via entrusted loans to financial leasing companies) and equity investments and investing in high credit quality and highly liquid financial assets. I&G is required to provide the following project implementing contracts to ADB and obtain a Subloan number from ADB before submitting a withdrawal application.

- a) For entrusted loans to subborrowers: Entrusted loan agreement between BOB, I&G and qualified subborrower.
- b) For entrusted loan to ESCOs:
 - (i) Entrusted loan agreement between BOB, I&G and ESCO.
 - (ii) Energy performance contract between ESCO and host company.
- c) For entrusted loan to financial leasing company:
 - (i) Entrusted loan agreement between BOB, I&G and financial leasing company.
 - (ii) Leasing subproject agreement between financial leasing company and qualified subborrower.
- d) For equity investment in early stage low-carbon technology companies: equity investment agreement between I&G and qualified investee.

50. **Withdrawals for guarantee loss reserve.** I&G will invest in high credit quality and highly liquid financial assets using the guarantee loss reserve fund. Once the conditions for withdrawal have been met, I&G may withdraw up to €30 million from the loan account for the guarantee loss reserve before they make any guarantee. The withdrawal application currency for the guarantee loss reserve will be in euro and the direct payment procedure will be used. I&G will set up GLAR at BOB for guarantee loss reserve. The guarantee loss reserve fund will be transferred from the EWA to GLAR once it is converted to CNY. No subsequent withdrawal will be made under such category until I&G has provided evidence⁴⁴ that not less than €30 million guarantee is provided to the qualified subprojects in compliance with the selection criteria. The third withdrawal will be made when I&G has provided evidence and ensure that no less than €140 million of guarantees has

⁴² Disbursement eLearning. http://wpqr4.adb.org/disbursement_elearning

⁴³ Appendix 4A of the Loan Disbursement handbook.

⁴⁴ Including guarantee counter-indemnity agreements and a summary of the qualified guarantees provided.

been provided to the qualified subprojects. The last withdrawal will be allowed only when the aggregate amount for guarantees provided to the qualified subprojects by I&G reached €250 million. The disbursement schedule for guarantee loss reserve will follow Table 13. I&G shall, prior to the loan closing date, exert its best endeavors to provide guarantees for cofinancing in an amount equal to not less than €642million. I&G will submit a certification that such requirements are met when submitting a withdrawal application under this Category.

Table 13: Disbursement Schedule for Guarantee Loss Reserve

	First withdrawal (€ million)	Second withdrawal (€million)	Third withdrawal (€million)	Fourth withdrawal (€million)
Withdrawal amount	30	20	20	21.6
Guarantee made	0	30	140	250

51. **Withdrawal for entrusted loans to subborrowers, ESCOs, financial leasing companies, and equity investments.** Loan proceeds will be disbursed to I&G's EWA to be set up at BOB. The EWA will be denominated in euro. BOB will convert the ADB funds into CNY in I&G's CCA. BOB will disburse the loan proceeds to subborrowers, financial leasing company and equity investees within three days of receipt of ADB loan proceeds. I&G will submit withdrawal applications for payment or reimbursement of eligible expenditures in CNY as described in the SOE sheets. I&G will indicate special instructions that payment will be in euro.⁴⁵

52. **Statement of expenditure (SOE).** For withdrawals for guarantee loss reserve, subloans, equity investment and investment in high credit quality and highly liquid financial assets, the SOE for financial intermediation loan may be used.⁴⁶ The applicable project implementing contracts in para. 49 will be submitted as supporting documents, and should be maintained and made readily available for review by ADB's disbursement and review missions, upon ADB's request, and for independent audit.

53. **Condition for all withdrawal.** No withdrawals shall be made until the following have been met: (i) the onlending agreement between MOF and SDIC and I&G, and FCA between I&G and BOB have been signed; (ii) templates for a leasing subproject agreement, a general entrusted loan agreement, a guarantee counter-indemnity agreement, a financial leasing company entrusted loan agreement and such other project implementing contracts, as applicable, have been approved by ADB; (iii) a euro and Chinese yuan accounts have been opened in the entrusted bank; and (iv) an ESMS has been adopted by I&G.

54. **Retroactive financing.** Withdrawals from the loan account may be made with ADB's prior approval for (i) refinancing, with entrusted loans, loans made by I&G to qualified subborrowers for qualified debt subprojects before the effective date, and (ii) making subloans to qualified subborrowers to finance qualified debt subprojects commenced before the effective date, provided that both any loan being refinanced and each expenditure supported by such subloan or refinancing subloan was incurred, not earlier than 12 months before the date of the ADB Loan Agreement, and provided further, that the subproject to be refinanced has been vetted under I&G's ESMS and is fully compliant; subject to a maximum amount for all such refinancing equivalent to 20% of the Loan amount. I&G will submit a certification that such requirements are met when submitting a withdrawal application under retroactive financing.

⁴⁵ Refer to Section 3D of Appendix 7A of the Loan Disbursement Handbook.

⁴⁶ Appendix 7D of the Loan Disbursement Handbook.

C. Accounting

55. I&G shall (i) maintain separate accounts for (i) EWA, (ii) RFA, (iii) IDA, (iv) GLRA, (v) CCA and records for the project, and shall cause each financial leasing company to maintain and provide to I&G separate accounts and records for the project funds managed by it; and (ii) prepare an annual consolidated statement of utilization of funds (SUF)⁴⁷ for the project (including funds managed by the financial leasing company) in accordance with accounting principles acceptable to ADB. A sample SUF is in Appendix 4.

56. In addition to the annual SUFs, SDIC, I&G, BOB, and each financial leasing company shall provide to ADB its annual financial statements prepared in accordance with financial reporting standards acceptable to ADB.

D. Auditing and Public Disclosure

57. I&G will cause the annual consolidated SUF to be audited annually in accordance with international standards on auditing and with the government's audit regulations, or with auditing standards acceptable to ADB, by an independent auditor whose qualifications, experience and terms of reference are acceptable to ADB. The audited SUF together with the auditor's report will be furnished in the English language by I&G to ADB within 6 months after the close of the fiscal year to which they relate.

58. The audit report for the SUFs will include a management letter and auditor's opinions, which cover (i) whether the project financial statements present an accurate and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting standards; (ii) whether the proceeds of the loan were used only for the purposes of the project; and (iii) whether the borrower or executing agency was in compliance with the financial covenants contained in the legal agreements and the PAM (where applicable).

59. In addition to the annual audited SUF, SDIC and I&G will (i) have its financial statements audited annually by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB, in accordance with international auditing standards or the national equivalent acceptable to ADB; (ii) as part of each such audit, have the auditors prepare the auditors' opinion(s) on the financial statements and compliance with any financial covenants it is required to maintain as specified in the loan or project agreements; and (iii) furnish to ADB not later than 6 months after the end of the fiscal year to which they relate, copies of such audited financial statements and auditors' opinion(s), all in the English language, and such other information concerning these documents and the audit as ADB shall from time to time reasonably request.

60. I&G shall require BOB and each financial leasing company to provide to I&G, and I&G shall provide to ADB copies of each such entity's audited annual financial statements immediately on their publication by such entity and in any event not later than 6 months after the end of the fiscal year to which they relate.

⁴⁷ In the case of financial intermediation loans, an audited SUF will be submitted in lieu of the audited project financial statements. The audited SUF will indicate: (i) the opening balance; (ii) the name of financial intermediary; (iii) details of subloans; (iv) closing balance; (v) comparative figures for prior year; and (vi) cumulative amount to date. The audited SUF will also be accompanied by adequate explanatory notes which will include the basis of preparation, reporting currency, undrawn external assistance, and details of subloans such as amounts committed, disbursed up to the previous year, disbursed during the current reporting period, cumulative disbursement, undisbursed commitments, percentage of loan utilized, etc.

61. The Government, SDIC, and I&G have been made aware of ADB's approach to delayed submission, and the requirements for satisfactory and acceptable quality of the SUF.⁴⁸ ADB reserves the right to require a change in the project account auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

62. Public disclosure of the annual audited SUFs for the project, including the auditor's opinion on the statements, will be guided by ADB's Public Communications Policy 2011.⁴⁹ After the review, ADB will disclose the audited SUFs and the opinion of the auditors on the statements no later than 14 days of ADB's confirmation of their acceptability by posting them on ADB's website. The management letter, additional auditor's opinions, and audited SDIC, I&G, BOB, and financial leasing company entity financial statements will not be disclosed.⁵⁰

⁴⁸ADB's approach and procedures regarding delayed submission of audited project financial statements:

- (i) When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (a) the audit documents are overdue; and (b) if they are not received within the next 6 months, requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.
- (ii) When audited project financial statements are not received within 6 months after the due date, ADB will withhold processing of requests for disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters. ADB will (a) inform the executing agency of ADB's actions; and (b) advise that the loan may be suspended if the audit documents are not received within the next 6 months.
- (iii) When audited project financial statements are not received within 12 months after the due date, ADB may suspend the loan.

⁴⁹ Public Communications Policy: <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>.

⁵⁰ This type of information would generally fall under public communications policy exceptions to disclosure. ADB. 2011. *Public Communications Policy*. Para 97(iv) and/or 97(v).

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting and Retroactive Financing

63. All advance contracting and retroactive financing will be undertaken in conformity with ADB Procurement Guidelines (2015, as amended from time to time) and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The borrower, SDIC and I&G have been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the project.

64. **Advance contracting and retroactive financing.** Subprojects to be retroactively financed must comply with ESMS. All retroactive financing of subprojects before the loan effective date is subject to ADB's prior review and approval documentation related to such proposed transaction including an appraisal report, in such form and detail as ADB may request, describing the subproject, the qualified enterprise, the terms and conditions of the proposed use of proceeds and drafts of the proposed project implementing contracts for the transaction. Retroactive financing may be made for (i) refinancing loans made by I&G to subborrowers for subprojects before the loan effective date, and (ii) making subloans to subborrowers to finance subprojects which commenced before the loan effective date, provided that both any loan being refinanced and each expenditure supported by such subloan or refinancing subloan was incurred not earlier than 12 months before the signing of the ADB loan agreement, the subproject to be refinanced has been evaluated under I&G's ESMS and is fully compliant, and the amount of aggregate retroactive financing does not exceed 20% of the total ADB loan amount. I&G will submit a certification that such requirements are met when submitting a withdrawal application under retroactive financing.

B. Procurement of Goods, Works, and Consulting Services

65. Procurement activities will be carried out in accordance with ADB's Procurement Guidelines applicable to FILs, and adopt appropriate procedures, including (i) payment of reasonable prices, and (ii) fair canvassing when selecting suppliers. Procurement must be from ADB member countries. Subborrowers will be encouraged to procure all goods through competitive bidding or shopping when such procedures are most appropriate in the interest of economy and efficiency. To provide guidance to subborrowers in undertaking procurement using ADB loan proceeds, and for I&G to monitor the procurement activities undertaken by subborrowers, a project specific procurement manual have been prepared and included in Appendix 5.

C. Procurement Plan

66. As the project is using FIL modality, I&G is not responsible for directly procuring goods and services, procurement plan has not been prepared.

VII. SAFEGUARDS

A. Environmental and Social Safeguards

67. **Environment safeguards.** The project follows FIL modality and an ESMS is developed to meet FIL requirements. The FIL project may include subprojects with category A for environment.

68. **Social safeguards.** The subproject selection criteria (Appendix 2 of this PAM) exclude subprojects that (i) have any land acquisition, (ii) result in labor retrenchment or labor redundancies; or (iii) have impacts on ethnic minorities. I&G is required to ensure that this requirement is met during the screening of newly identified subprojects in accordance with the procedures stipulated in the ESMS.

B. Environmental and Social Management System

69. ESMS describes (i) institutional due diligence of SDIC, I&G, ACEE, and BOB involved in the BTH dedicated GFP; (ii) ESMS policy; (iii) GFP environmental and social safeguards requirements; (iv) project selection criteria; (v) ADB prohibited investment activity list; (vi) environmental and social management procedures, including establishment and operation of subproject level and BTH dedicated GFP level grievance redress mechanisms; (vii) institutional responsibilities, staffing, training, and ESMS operation budget; and (viii) assurances of the BTH dedicated GFP. The ESMS describes specific requirements for category A projects, including the ADB clearance on full environmental due diligence reports of these subprojects, including environmental audit if the subproject involves existing facilities. For category A projects, it also describes the requirement of 120 days disclosure on ADB website prior to subproject approval by the I&G.

70. I&G will take final responsibility of ESMS implementation while I&G will take day-to-day responsibility of implementation of ESMS. Due to limited experience and insufficient expertise on environmental and social safeguards at I&G, I&G made a long-term partnership and contractual arrangement with ACEE, a qualified and specialized institute for environmental impact assessment. ACEE will actively support I&G for ESMS implementation. In addition, qualified FIL implementation environment consultants will be engaged for (i) conducting environmental impact assessment reports of category A subproject, (ii) environmental audit for existing facilities, (iii) preparing initial environmental examination for category B subprojects with high risk as defined in the ESMS. I&G shall not provide financial support to any subprojects, unless the subprojects have been assessed and confirmed to be in compliance with all ESMS requirements, by the ACEE or another consultant approved in writing by ADB. After one year of implementation of the ESMS, ADB will reassess the capacity of I&G's internal safeguards experts. If ADB is satisfied with their capacity, I&G's internal safeguard experts can also sign off and approve safeguard assessments of subprojects. I&G shall ensure that each financial leasing company adopts and implements an ESMS. ESMS will be implemented for all the subprojects financed by the proposed BTH dedicated GFP beyond the ADB project completion.

71. Environmental and social performance will be evaluated on a semi-annual basis. I&G will ensure that environmental and social safeguards monitoring requirements indicated in the ESMS are met. I&G shall ensure that safeguards grievance redress mechanisms are established as provided in the applicable ESMS.

VIII. GENDER AND SOCIAL DIMENSIONS

72. I&G is required to ensure the relevant labor laws and occupational health standards are complied with by all the subborrowers. The occupational health and safety procedures adopted by identified subborrowers and their compliance with relevant domestic laws and regulations have been assessed and found to be adequate. Subprojects resulting in labor retrenchment and redundancies due to introduction of new technologies will not be included in the project. This is included in subproject selection criteria and I&G is required to ensure this requirement with respect to future subprojects. The subborrowers are expected to provide equal opportunities to female workers and ethnic minorities and improve the working conditions of these workers as a result of improvements achieved under the project.

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION

A. Project Design and Monitoring Framework

Impacts the Project is Aligned with Air pollution reduced and public health in the BTH region improved (Comprehensive Action Plan for Air Pollution Prevention and Control of the PRC and the Thirteenth Five-Year Plan) ^a			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
Outcome Air quality improvements and CO ₂ emission reduction accelerated	By 2024: a. The investment in pollution reduction doubles from 2015 levels (2015 baseline: CNY15 billion) b. Annual concentration of PM _{2.5} reduced by 25%; SO ₂ and NO _x reduced by 15% in the BTH region (2015 baseline: PM _{2.5} is 73µg/m ³ ; SO ₂ is 7.83 million tons and NO _x is 8.19 million tons) c. Ratio of days with good air quality (AQI <100) per year reaches >80.0% in cities at or above prefecture level in the BTH region, benefiting more than 200 million people. (2015 baseline: 76.7%) d. At least 5 million tons of CO ₂ emissions per year avoided compared with 2015 (2015 baseline: 10.3 billion tons)	a–b. Beijing and Tianjin municipalities; Hebei, Henan, Shandong, Shanxi, and Liaoning provinces; and Inner Mongolia Autonomous Region annual yearbooks a–d. Midterm review of the green financing platform in 2019 to check that the trajectory confirms the progress is on track c. Ministry of Environmental Protection report on Thirteenth Five-Year Plan targets d. National and international data and reports under the Paris Agreement	The economic slowdown reduces appetite for green investments. Weak demand from borrowers may slow implementation.
Outputs 1. BTH-dedicated green financing platform established and commercial financing for pollution-reduction projects leveraged	By 2022: 1a. At least CNY6 billion commercial cofinancing leveraged by the platform (2015 baseline: 0)	1a–1d. Regular reports on GFP implementation and project completion report	Complexity due to the multitude of lending instruments within the platform may affect the safeguard compliance, and technical and financial due diligence.

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
<p>2. For SMEs and ESCOs from the green financing platform, barriers lowered and financing scaled up</p> <p>3. Capacity in new financial products and</p>	<p>1b. CNY1 billion invested in energy efficiency and distributed renewable projects to reduce share of coal to 62% in the mix (2015 baseline: 64%)</p> <p>1c. At least 1 million square meters of floor area retrofitted with energy-efficient heating, and other measures and smart control (2015 baseline: 0)</p> <p>1d. Low-emission public transport promoted through green leasing in at least three cities of the BTH region (2015 baseline: 0)</p> <p>1e. Clean and energy-efficient agriculture biomass utilization demonstrated (2015 baseline: 0)</p> <p>By 2022: 2a. Cash-flow financing through at least two commercial banks for SME and ESCO financed by the platform (2015 baseline: 0)</p> <p>2b. CNY1 billion invested in SMEs and ESCOs for green investment projects by the platform (2015 baseline: 0)</p> <p>By 2022: 3a. 40 investment</p>	<p>1a–1d. At least three commercial banks partner with the platform for entrusted loans and cofinancing</p> <p>1b. At least 100 distributed renewable energy Projects financed by the platform</p> <p>1c. Energy audit report of building energy efficiency and district heating retrofit projects supported by GFP</p> <p>1d. Green leasing projects assessment report of GFP</p> <p>1e. Project completion report</p> <p>2a–2b. Subproject appraisal reports and project completion reports</p> <p>2a. Midterm survey with ESCOs, SMEs and commercial banks to assess the impact</p> <p>3a–3c. Subprojects appraisal reports</p>	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
to appraise and implement green financing projects strengthened	<p>projects appraised for cofinancing by commercial banks (2015 baseline: 0)</p> <p>3b. 50 people trained on energy management (2015 baseline: 0)</p> <p>3c. Five workshops for 100 participants organized on project appraisal and management (2015 baseline: 0)</p>	3a–3c. Project completion report	
Key Activities with Milestones 1. BTH-dedicated green financing platform established and commercial financing for pollution reduction projects leveraged 1.1 BTH-dedicated green financing platform established (Q2 2017). 1.2 CNY6 billion commercial cofinancing leveraged by the platform (Q4 2021). 1.3 Implement fuel switching from coal to natural gas and renewable energy projects (Q4 2019). 1.4 Implement energy efficiency improvement and emission-reduction projects in industries (Q4 2018). 1.5 Implement agricultural waste-to-energy project (Q4 2018). 1.6 Implement distributed renewable energy project (Q4 2018). 1.7 Improve energy efficiency in buildings (Q4 2017). 1.8 Construct clean and low-emission (electric and compressed or liquefied natural gas) charging and filling infrastructure (Q4 2019). 1.9 Promote clean and low-emission transport projects (Q4 2018). 2. For SMEs and ESCOs from the green financing platform, barriers lowered and financing scaled up 2.1 Leverage cash-flow financing from commercial banks for SMEs and ESCOs financed (Q4 2021). 2.2 Invest in green projects for SMEs and ESCOs (Q4 2018). 3. Capacity in new financial products and to appraise and implement green financing projects strengthened 3.1 Adapt and implement ESMS (Q4 2016). 3.2 Appraise projects for cofinancing by commercial banks (Q4 2017). 3.3 Organize workshops on energy management (Q4 2019). 3.4 Organize workshops on project appraisal and management (Q4 2018).			
Inputs ADB: €458 million loan Domestic commercial banks: €863.6 million Subborrowers funding: €330 million Implementing agency-funded project management costs: €23.4 million			
Assumptions for Partner Financing The subborrowers are expected to contribute a minimum of 20% of the project cost as equity contribution, and the cooperative cofinancing to be mobilized at portfolio level is expected to be no less than €863.6 million. Total partner inputs assume ADB proceeds are reinvested three times on average during the full financial intermediation loan project life cycle.			

µg/m³ = microgram per cubic meter, ADB = Asian Development Bank, AQI = air quality index, BTH = Beijing–Tianjin–Hebei, CO₂ = carbon dioxide, ESCO = energy service company, 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, Q = quarter, SMEs = small and medium-sized enterprises, SO₂ = sulfur dioxide.

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

B. Monitoring

73. **Project performance monitoring.** The project performance will be monitored through the project performance management system (PPMS). The total project implementation period is 15 years and the loan implementation period is 5 years from the date of loan effectiveness. The estimated loan closing date is 30 September 2022 and the project completion date is 31 March 2022. I&G, will establish the PPMS in a form acceptable to ADB to monitor the progress in project implementation during the loan implementation period. The PPMS will ensure the monitoring of project's impacts, outcomes and outputs with respect to the performance targets set forth in the design and monitoring framework. I&G will exert its best endeavors to meet the performance targets set in the design and monitoring framework.

74. The PMO will prepare semi-annual progress reports in a format acceptable to ADB and submit these reports within 30 days of the end of each semi-annual period. These reports will provide (i) a narrative description of progress in project implementation, (ii) any changes to the subproject implementation schedule, (iii) problems or difficulties encountered, (iv) work to be carried out in the next 6 months with respect to each component and subproject, and (v) compliance with ESMS, and EMPs prepared for subprojects. The progress report will also report summary statement of EWA, RFA, IDA, GLRA, CCA, and any new subloans approved.

75. The PMO will prepare a consolidated English environmental monitoring report semi-annually when at least one subproject is under construction and annually when all subprojects are in operation for submission to ADB. In addition, ESMS implementation reports will be prepared during the first 3 years after loan effectiveness and annual ESMS implementation reports until the project closure for submission to ADB. The consolidated environmental monitoring reports will be disclosed in ADB website.

76. **Compliance monitoring.** The compliance status of loan and project covenants, including the provisions of the ESMS will be reported and assessed through the semi-annual progress reports and verified by ADB review missions.

C. Evaluation

77. ADB and the government will review the project implementation jointly at least once a year. In addition, ADB and the government will undertake a comprehensive midterm review approximately two years after the start of project implementation. This midterm review will include a detailed evaluation of the project scope, selection criteria, implementation arrangements, achievement of scheduled targets, and progress on engaging a subsequent batch of subprojects to be financed by the FIL reflow funds. Within 6 months of physical completion of the project, I&G will submit a project completion report to ADB. This report will then be the basis for a joint evaluation of the project conducted by I&G, and ADB during a project completion review mission to be conducted by ADB. I&G shall engage an accredited agency or agencies acceptable to ADB to undertake, within 6 months after the physical completion of each qualified subproject, measurement and verification of the energy savings and reduction in emissions of CO₂, SO₂, NO_x and PM_{2.5} achieved by such subproject and shall provide to ADB the consolidated results of the measurement and verification of such savings and reductions of all physically-completed qualified subprojects, with reference to the energy and emissions baseline established before the project implementation and from time to time at ADB's request.

D. Reporting

78. During the loan implementation period, I&G will provide ADB with (i) semi-annual progress reports in a format consistent with ADB's project performance reporting system including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) an updated lending and disbursement plan, and (d) updated implementation plan for the next 6 months; (ii) consolidated audited SUF and entity financial statements; and (iii) a project completion report within 6 months of physical completion of the project. To ensure that projects will continue to be both viable and sustainable, project accounts and entity audited financial statements together with the associated auditor's report, should be adequately reviewed. The template to be used in preparing semi-annual progress reports is in Appendix 7. Table 14 summarizes the key reporting requirements during project implementation.

Table 14: Summary of Key Reporting Requirements During Implementation

Name of Report/Documents	Timing of reporting	Remarks
Semi-annual progress reports	Every 6 months until loan completion	First report to cover the half year ended 30 June 2017
Consolidated audited statement of utilization of funds including Auditor's report	Before 30 June of each year throughout the loan implementation period, i.e., from loan effectiveness until loan closing date	First report due by 30 June 2018
Audited entity financial statements of I&G, SDIC, BOB, and each financial leasing company	Before 30 June of each year throughout the loan implementation period, i.e., from loan effectiveness until loan closing date	First report due by 30 June 2018
ESMS implementation report	Semi-annually during the first three years after loan effectiveness, and annually until project closure	
Consolidated environmental monitoring report	Semi-annually during construction, annually during operation phases, until project closure	
Project completion report	Within 6 months of physical completion of the project	

BOB = Bank of Beijing, ESMS = environmental and social management system, I&G = China National Investment and Guaranty Corporation, SDIC = State Development & Investment Corporation

Source: Asian Development Bank estimates.

E. Stakeholder Communication Strategy

79. Consultation is an important aspect of the project. The project's stakeholder communication strategy has four major themes, which are to ensure:

- (i) The project is implemented in an open and transparent manner that provides access to ADB funds in an equitable manner to the applicants most qualified to receive them based on the project selection criteria.
- (ii) Stakeholders who might be adversely affected by the project are identified and engaged in consultations with a view to protecting their interests.
- (iii) Benefits arising from the project are communicated to interested parties in order to promote (a) the further development of the GFP; (b) similar initiatives by other provinces or cities; and (c) the benefits of energy conservation generally.
- (iv) Corruption risk is minimized (discussed separately in Section X of this PAM).

80. In order to implement this strategy the following steps have or will be taken:
- (i) Opportunities to access project funds to be openly advertised widely within the BTH region using a variety of media selected to reach the targeted enterprises most likely to benefit from the GFP's financial products.
 - (ii) I&G will ensure that local communities affected by the project are consulted before each subproject approval under the provisions of ESMS, and after subproject implementation, to identify, assess, and remedy any residual concerns.
 - (iii) Within 2 months from the loan effectiveness, I&G will commence disclosure of all key project-related information, including the scope, financial and institutional arrangements of the project; and a semi-annual progress performance report.

X. ANTICORRUPTION POLICY

81. ADB's Anticorruption Policy was explained to and discussed with the government, SDIC, and I&G and it was emphasized that ADB reserves the right to investigate, directly or through its agents, any alleged violations of the Anticorruption Policy relating to the project.⁵¹ SDIC and I&G shall ensure that all agreements and other contracts it enters into in relation to the Project include provisions specifying the right of ADB to audit and examine the records and accounts of financial organizations, contractors, suppliers, consultants, and other service providers as they relate to the Project. Individuals and/or entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.⁵²

82. To support these efforts, relevant provisions of ADB's Anticorruption Policy are included in the loan and project agreements under the project. In addition, the following characteristics of the project promote transparency and strengthen governance: (i) scrutiny of the subprojects (technical, financial, economic, environmental, and social) by I&G and BOB; (ii) the inclusion of anticorruption provisions in the Project Agreement, agreements between I&G and BOB, and in all subloan agreements; and (iii) an information campaign to be carried out by I&G to inform enterprises and other large energy consumers about the project and their entitlements.

⁵¹ Anticorruption Policy: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>

⁵² ADB's Integrity Office web site: <http://www.adb.org/integrity/unit.asp>

XI. ACCOUNTABILITY MECHANISM

83. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make an effort in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.⁵³

⁵³Accountability Mechanism. <http://www.adb.org/Accountability-Mechanism/default.asp>

XII. RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL

84. All revisions and/or updates, as agreed between I&G, and ADB, during the course of implementation are retained in this section to provide a chronological history of changes to implemented arrangements recorded in the PAM.

No.	PAM Changes/Updates	Date	Remarks
1	Initial draft	05 September 2016	Loan Fact-Finding Mission
2	Update	26 May 2020	Loan Review Mission: I&G no longer needs to submit Chinese IEEs of the subprojects to ADB for disclosure, it will only be disclosed on I&G and the subborrowers' websites.
3	Update	7 September 2022	Loan Review Mission: Update on reflow funds.

DESCRIPTION OF PROJECT FINANCIAL PRODUCTS

1. Using the proceeds of the financial intermediation loan (FIL), China National Investment and Guaranty Corporation (I&G) will offer the following financial products in the proposed project to support selective air quality improvement investments in the greater Beijing–Tianjin–Hebei (BTH) region: (i) entrusted loans; (ii) guarantees, supported by Asian Development Bank (ADB)-provided liquidity fund, to mobilize commercial bank cofinancing; and (iii) investment in early stage technology companies. The project will establish a greater BTH region dedicated green financing platform (GFP) for green investments with a focus on small and medium-sized enterprises (SME). The products are designed to demonstrate the bankability of investments in green development, and the creditworthiness of borrowers who might not otherwise have access to financing. It is expected that ADB funds leverage financing from participating commercial banks and other financial institutions and be onlent to eligible subprojects on commercial terms.

2. **Entrusted Loans.** The debt financing will be provided through relending of ADB loan proceeds to qualified subprojects to improve air quality in the greater BTH region. The proposed project provides (i) unsecured entrusted loans; (ii) entrusted loans secured by a transfer to the lender of a controlling interest in the borrower, where control is not to be exercised unless the loan is in default and where the controlling interest is redeemable by the borrower's shareholder at a pre-agreed price on repayment of the loan; and (iii) entrusted loans secured by third party guarantees or by collateral security. Where there is both an entrusted loan and a cofinancing loan for the same subborrower and the same subproject, I&G's position may be senior paripassu or subordinated.

3. Qualified subprojects are selected based on the subproject selection criteria in the Loan Agreement and herein Appendix 2. The provincial governments in the greater BTH region may refer potential subprojects to I&G as candidates for GFP financing. I&G will make independent decisions based on the technical merit, credit quality, environmental due diligence and subproject selection criteria to finance a particular subproject. The entrusted loans will be offered at an interest rate close to the prevailing market rate and the actual rate will be at I&G discretion depending on the risk profile of the subprojects at I&G's risk. Entrusted loan agreement will be signed between the entrusted bank (Bank of Beijing [BOB]), I&G and the qualified subborrower.

4. **Energy service companies(ESCOs).** Credit lines will be provided to qualified ESCO who meet the subborrower selection criteria. An entrusted loan agreement will be signed between the ESCO, the entrusted bank (BOB), and I&G with identified credit line limit and stating the requirements for individual subprojects to obtain loans. ESCOs will provide a signed energy performance contract, meeting all subproject requirements, to I&G in order to get finance for each subproject. I&G shall submit the first entrusted loan to an ESCO for ADB's prior review and approval. The energy performance contract sets out the terms of a qualified subproject, entered into by an ESCO and a host company, whereunder the ESCO provides goods, works and/or consulting services to the host company and where payments from the host to the ESCO are based in whole or in part on energy savings achieved by the host as a result of the subproject.

5. **Financial Leasing.** Up to 20% of the loan proceeds is allowed for I&G to provide entrusted loan to financial leasing companies for onlent in green leasing subprojects, e.g., energy-saving vehicles or equipment. An entrusted loan can be provided to financial leasing company for a period of up to 5 years. An entrusted loan agreement will be signed between I&G and each financial leasing company. The Financial Leasing Company will be required to recycle the principal amount of all lease repayments it receives during the term of the entrusted loan into new

financial leases not less than 6 months after it receives them except where the funds are required to repay the next principal installment of the entrusted loan. Each financial lease will be in an amount no greater than 30% of the entrusted loan whose proceeds it deploys. The financial leasing companies will adopt and implement an ESMS. No financial leasing companies will make or commit to make any financial lease unless and until it has provided to I&G documentation and information about the proposed transaction, satisfactory to I&G and received I&G's written non-objection. The financial leasing companies will procure, or ensure that subborrowers procure, all goods that will be the subject of financial leases in accordance with the requirements of the Project Agreement and the project administration manual (PAM). And the financial leasing companies will require each leasing subborrower to enter into a lease agreement and lease subproject agreement and will enforce the terms of such agreements against such subborrowers. A due diligence on the financial strength and management of green leasing portfolio must be conducted to select a partner leasing company. The subprojects for lease financing are selected based on pre-determined green leasing eligibility criteria. The financial leasing companies may set the lease financing charge on the prevailing market rates.

6. **Guarantee Facility.** I&G will provide guarantees to technically sound subprojects with high energy saving potential but that lacking in collateral to meet the requirement of the commercial banks for providing cofinancing. This facility is likely to be particularly useful for ESCO projects and SME borrowers. As the biggest guarantee company in the PRC, I&G is entitled to levy market-based guarantee fee commensurate with the credit risk of the subborrower, and the cofinancing bank will offer appropriate discount on the interest rate it charges for subprojects guaranteed by I&G. The guarantees may be issued to support cofinancing provided by BOB or any other bank/financial institution providing cofinancing to qualified subborrowers for qualified subprojects. A guarantee counter-indemnity agreement will be signed between I&G and the qualified subborrower, which sets out all of the project requirements to be achieved by the qualified subborrower and qualified subproject.

7. **Equity Investment.** The proposed project will also invest in early stage companies. Equity investment is particularly important for the high growth potential SMEs with innovative low-carbon technologies which bank financing cannot fill the gap with. A dedicated team with expertise will be established in I&G to conduct following specific tasks: (i) assessing the risk profile of the company, (ii) estimating the financing demand at its development stage, (iii) evaluating the technology and business model, (iv) assessing capacity of the management, (v) proper valuation of the company, and (vi) designing a realistic exit plan. This investment component will be capped to €25 million. Any investment should be less than CNY50 million per deal.

8. The potential subprojects for equity investment will be screened and selected based on the eligibility criteria developed by I&G and in compliance with ADB's selection criteria. The investment funds will be injected into the qualified investee to support a qualified equity subproject. The investment will be structured as registered capital but with a put option in favor of I&G. In case the investee company is not able to give an exit to I&G through an initial public offering (IPO), strategic sale or a secondary transaction, the investee company or other put counterparty will buy back the stake at a mutually agreed pricing. The put option or (mandatory buy-back arrangements) will significantly reduce the risks in executing exit of the investments, which makes the risk profile of this equity investment similar to that of a debt financing. The qualified investee must meet the eligibility criteria and it must be located in the greater BTH region. An equity investment agreement will be signed between I&G and the qualified investee, which sets out all of the project requirements to be achieved by the qualified investee and qualified equity subproject. Each Equity Investment shall be made (i) in an amount not greater than CNY50

million; and (ii) made subject to a right of resale (a “put”) in favor of I&G against a creditworthy entity that is exercisable not later than the final repayment date of the Loan.

SELECTION CRITERIA FOR ENTRUSTED LOANS, GUARANTEES AND FINANCIAL LEASES

1. The subprojects supported by entrusted loans including credit lines to energy service company (ESCO) and Financial Leasing Companies, guarantees and financial leases, must meet the technical, financial, economic, environmental, and social criteria as presented below. These criteria will ensure that the selected subprojects lead and demonstrate air quality improvement, low-carbon development, energy efficiency and emission reduction work in greater Beijing–Tianjin–Hebei (BTH) region¹ with advanced technology, adequate financial returns, and provide substantial benefits to the economy, society, and environment. The following criteria will apply to the subprojects that are financed under the green financing platform.

A. Subproject Technical Criteria

2. All subprojects must meet the following criteria, in particular:
- (i) All subprojects must not result in an increase in energy consumption² and emissions comparing to the current situation in the facility where the subprojects are located, including carbon dioxide (CO₂), sulfur dioxide (SO₂), nitrogen oxide (NO_x), and airborne particulate matter (PM), or others may be approved by ADB.
 - (ii) Baseline for energy consumption and emissions shall be established before the subprojects are being implemented.
 - (iii) Energy consumption and emissions produced by the subprojects after implementation shall be monitored and recorded.
 - (iv) All subprojects must use proven technologies with reliable, measurable, and verifiable emission reduction that will contribute to the achievement of the Action Plan on Prevention and Control of Air Pollution (2013–2017)(CAAP), and the 13th Five-Year Plan of the People's Republic of China (PRC).
 - (v) The proposed technologies to be used shall be the best available technologies where feasible.
 - (vi) All subprojects shall comply with Asian Development Bank's (ADB) Energy Policy and the industry policies of where the subproject is located. Normally, the subproject should belong to the encouraged and prioritized sectors, local key supported projects or piloting project.
 - (vii) All subprojects shall contribute to at least one of the indicators set in the design and monitoring framework.
 - (viii) All subprojects must be located in the geographic areas listed under greater BTH region and must address air pollution issues. And
 - (ix) Potential subprojects to be financed by the reflow funds can be outside the greater BTH region provided that such subprojects meet all other subproject selection criteria listed above except (viii). Such reinvestment of reflow funds cannot be counted as counterpart financing and contribution to the DMF indicators if the subproject is not in the greater BTH region.

B. Subproject Financial Criteria

3. All subprojects must be financially viable. The financial analysis should be prepared in accordance with ADB Financial Management and Analysis of Projects guidelines. In particular:

¹ The greater Beijing–Tianjin–Hebei region refers to Beijing and Tianjin municipalities; Hebei, Henan, Shandong, Shanxi and Liaoning provinces; and Inner Mongolia Autonomous Region.

² Evaluated in ton of standard coal equivalent.

- (i) The estimated subproject investment and operations costs, as well as cash inflows, must be clearly presented and must be reasonable.
- (ii) The financial internal rate of return (FIRR) shall be greater than the weighted average cost of capital.
- (iii) The FIRR must be robust under various sensitivity scenarios.
- (iv) The payback period of subprojects shall match the repayment period of subloans.
- (v) The average debt-service coverage ratio shall be at least 1.2. If any subproject has debt-service coverage ratio less than 1.2, I&G will require the subborrower to provide additional credit enhancement measures.

C. Subproject Economic Criteria

4. For all the proposed subprojects, the total economic benefits must exceed the total economic costs. The economic internal rate of return of the subproject must be greater than the discount rate of 12%, and must be viable under adverse sensitivity scenarios. The economic benefits include CO₂ savings valued at \$35.2/ton with 2% annual increase.

D. Subproject Social and Environmental Safeguards Criteria

5. All subprojects must meet the following criteria, in particular:
- (i) The subprojects must not involve any land acquisition or housing demolition.³
 - (ii) The subproject must not have any impacts on ethnic minorities.⁴
 - (iii) The subprojects must not be located in any designated environmental protection zone and cultural heritage site.
 - (iv) The subprojects must not support enterprises which have activities involving commercial development of cultural resources of Indigenous Peoples without their consent for the commercialization of such resources.
 - (v) Each subproject must be designed, constructed, and operated in accordance with relevant national and provincial social and environmental laws and regulations.
 - (vi) Subproject must meet requirements of the environmental and social management system (ESMS) developed for the loan project,
 - (vii) Initial Poverty and Social Assessment and Summary Poverty Reduction and Social Strategy shall be prepared for all subprojects.
 - (viii) Each subproject must acquire proper approvals from proper national and provincial authorities in-charge. And
 - (ix) The subprojects shall not result in labor retrenchment and labor redundancies.

E. Subborrower Selection Criteria

6. All subborrowers must be meet the following criteria, in particular:
- (i) All subborrowers must be financially creditworthy and not have a poor credit record, as recorded in the People's Bank of China credit history database.
 - (ii) The subborrowers must be capable to contribute a minimum of 20% of the total subproject investment cost as counterpart financing.

³ The subproject proposal will be screened through an involuntary resettlement impact screening checklist in accordance with procedures contained in the project's environmental and social management system (ESMS) which is included as Appendix 6 of the ESMS.

⁴ The subproject proposal will be screened through an ethnic minorities impact screening checklist.

- (iii) The subborrowers shall commit to enhance capacities in project planning, financing, implementing and monitoring during the subproject preparation and implementation periods.
- (iv) The subborrowers must have complied with all relevant domestic environmental regulations and must acquire relevant environment permits with respect to the existing facilities. And
- (v) The subborrowers must be in compliance with relevant domestic occupational health and safety standard.

7. In the event that a subproject has good energy savings and emission reduction potential, but does not meet some of these criteria, I&G, may consider and recommend to ADB, ADB will review and approve.

SELECTION CRITERIA FOR EARLY STAGE INVESTMENT

1. **Sector Coverage.** The investment in early stage technology will focus on the introduction of innovative low-emission technologies in same targeted areas as specified for the overall loan project, including clean energy, energy efficiency, emission reduction, green transport, and other related low-emission technologies.
2. **Number of positions and investment size.** Targeting companies must be in the early to early growth stages. Early stage refers to typically pre-revenue, with business model in trial, while Early growth stage refers to typically early revenue, pre- or post-profit with existing business model.
3. **Return objective.** The return is expected to be greater than 10%.
4. **Investment criteria.**
 - (i) China National Investment and Guaranty Corporation (I&G) will inject capital to the low-carbon technology investee, which are operating in the selected industries and fields mentioned in para. 1;
 - (ii) The investee must conduct businesses with environmental/social return, which can generate enhanced financial return;
 - (iii) The investee must possess patent(s), proprietary technology and/or technical know-how in the sectors mentioned in para. 1;
 - (iv) The investee must have good growth potential with feasible technology;
 - (v) The investee should be ready for initial commercialization or further scale-up;
 - (vi) The investee must be registered within 8 years; and
 - (vii) It will be a strong plus if other investment institutions have already invested to the investee.
5. **Geographic location.** The investee must be located in the greater Beijing–Tianjin–Hebei region.¹
6. **Social and environmental safeguards criteria.** The subprojects supported by the investment in early stage technology must meet the following criteria, in particular:
 - (i) The subprojects must not involve any land acquisition or housing demolition. The subproject proposal will be screened through an involuntary resettlement impact screening checklist in accordance with procedures contained in the project's environmental and social management system (ESMS) which is included as Appendix 7 of the ESMS. The checklist will be submitted to ADB for approval to confirm that no land acquisition or house demolition will be required;
 - (ii) The subproject must not have any impacts on ethnic minorities. The subproject proposal will be screened through an ethnic minorities impact screening checklist. The checklist will be submitted to Asian Development Bank (ADB) for approval to confirm that there are no impacts on ethnic minorities;
 - (iii) The subprojects must not be located in any designated environmental protection zone and cultural heritage site;
 - (iv) Each subproject must be designed, constructed, and operated in accordance with relevant national and provincial social and environmental laws and regulations;

¹ The greater Beijing–Tianjin–Hebei region includes Beijing and Tianjin municipalities; Hebei, Henan, Shandong, Shanxi and Liaoning provinces; and Inner Mongolia Autonomous Region.

- (v) Subproject must meet requirements of the ESMS developed for the project;
- (vi) Initial Poverty and Social Assessment and Summary Poverty Reduction and Social Strategy shall be prepared for all subprojects;
- (vii) Each subproject must acquire proper approvals from proper national and provincial authorities in-charge;
- (viii) The investees must have complied with all relevant domestic environmental regulations and must acquire relevant environment permits with respect to the existing facilities;
- (ix) The investees must be in compliance with relevant domestic occupational health and safety standard; and
- (x) The subprojects should not result in labor retrenchment and labor redundancies.

SAMPLE STATEMENT OF UTILIZATION OF FUNDS

	<u>201x</u>	<u>201x</u>	<u>Cumulative</u>
A. Opening cash balance	<u>XX</u>	<u>XX</u>	<u>XX</u>
B. Sources of funds			
1 ADB loan proceeds	XX		XX
2 Reflows (repayments from SLA 1)		XX	XX
3 Reflows (repayments from SLA 2)			XX
4 Bank's own funds (equity)	XX	XX	XX
5 Others			XX
Total (sum 1 to 5)	<u>XX</u>	<u>XX</u>	<u>XX</u>
C. Uses of funds			
1 Subloans to qualified sub-borrowers (SLA 1)			
ADB share	XX		XX
Bank share	XX		XX
2 Subloans to qualified sub-borrowers (SLA 2)			
ADB share		XX	XX
Bank share		XX	XX
Total (sum 1 to 2)	<u>XX</u>	<u>XX</u>	<u>XX</u>
D. Net cash activity (B - C)	<u>XX</u>	<u>XX</u>	<u>XX</u>
E. Ending cash balance (A + D)	<u>XX</u>	<u>XX</u>	<u>XX</u>

NOTES: Include basis of preparation, reporting currency, undrawn external assistance, and details of subloans such as amounts committed, disbursed up to the previous year, disbursed during the current reporting period, cumulative disbursement, undisbursed commitments, percentage of loan utilized, etc.
ADB = Asian Development Bank, SLA = subloan agreement.

PROCUREMENT MANUAL

A. Introduction

1. This procurement manual is prepared to regulate the procurement activities of the Air Quality Improvement in the Greater Beijing–Tianjin–Hebei Region—China National Investment and Guaranty Corporation’s Green Financing Platform Project, which will utilize an Asian Development Bank (ADB) financial intermediation loan (FIL). ADB expects that for FILs, the procurement is undertaken by the respective loan beneficiaries in accordance with established private sector or commercial practices, and which are acceptable to ADB.

2. One objective of the manual is to draw attention to subproject owners¹ that they have the responsibility to ensure the procurement activities they undertake to implement their subprojects must:

- Comply with any relevant laws and regulations of the People’s Republic of China (PRC) and the municipal or provincial governments in the greater Beijing–Tianjin–Hebei (BTH) region² where the subprojects are located, and
- Adhere to procurement principles and guidance determined by ADB to be applicable to this FIL project.

3. A second objective of the manual is to offer specific guidance on how procurement activities can be undertaken that will ensure compliance with ADB principles and guidelines.

4. It is not appropriate for this ADB manual to offer specific advice on compliance with the specific requirements of the PRC and local governments’ laws and regulations. Such legal compliance is the responsibility of subproject owners and applies not just to procurement activities but is an all embracing responsibility they have in how they conduct to all their business activities.

5. Notwithstanding the above statement, all the guidance provided in this manual is considered to be compatible with current applicable PRC law—and specifically the PRC Tendering and Bidding Law 1999 (effective from 1st Jan 2000), the scope and applicability of which includes all investment projects that utilize foreign capital funds. Subproject owners should therefore ensure that their procurement staff are familiar with the requirements of this law and its applicable regulations, in addition to being provided with this procurement manual.

6. It is also not the intention of this manual to force changes in the procurement procedures of subproject owners where these already substantially comply with required ADB procurement principles. However, it is expected that subproject owners will review their own procurement procedures using the contents of this manual as a guide and adjust their procedures to ensure the required substantial compliance.

7. The contents of this procurement manual will be kept under review during project implementation and can be revised at any time according to the project requirements, or changes in applicable laws and regulations. Any changes in the manual will be jointly approved by China National Investment and Guaranty Corporation(I&G) and ADB.

¹ Subproject owners for the purpose of this manual include (i) all subborrowers of ADB FIL funds; and (ii) the owners of the subprojects whose financing is guaranteed by the guarantee provided under the FIL.

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

B. Procurement Objectives

8. The aim of any procurement process is to ensure the resulting procurement provides the purchaser with goods, works or services that:

- **Are fit for the intended purpose**—i.e., they meet required quality, durability and performance criteria;
- **Provide value for money** to the purchaser; and
- **Are procured in a timely and efficient manner.**

9. These objectives are wholly compatible with best commercial practice and endorsed by ADB. However, the objectives are not mutually exclusive and they can conflict to a degree. For example, sophisticated procurement procedures may well be justified for large scale or technically complex procurement but would not be justified on efficiency grounds for simpler small-scale procurement. ADB procurement guidelines and commercial best practice procurement regulations recognize the need for an efficient procurement process by providing simpler procedures for small-scale procurement.

10. Another crosscutting objective of any procurement process is to adequately safeguard subproject owners against the risks of corruption and fraud that could damage the level of subproject performance (as measured in financial terms and/or energy/emissions savings), and potentially the competitiveness of the entire business.

C. ADB Procurement Principles

11. ADB procurement guidelines are based on the principles of (i) competition; (ii) economy and efficiency; (iii) transparency; and (iv) fairness and equal opportunity. Each of these principles is briefly explained below, while specific guidance on their application is given in Section D of this manual.

12. **Competition.** Open competition is the default approach, and conditions for other methods are clearly described. Conditions justifying a departure from open competition may involve situations when open competition is either inappropriate (e.g., due to proprietary technology) or when it hinders optimal economy and efficiency.

13. **Economy and efficiency.** The procurement processes are efficient and lead to optimal results in a balanced consideration of time, costs, and quality. This requires that the procurement processes are not cumbersome and prone to unnecessary delays.

14. **Transparency.** The procurement processes are governed by clear rules that are easily accessible and can be consistently applied. Contract opportunities are advertised widely.

15. **Fairness and equal opportunity.** All eligible bidders have an equal and fair opportunity. Procurement processes avoid preferential or discriminatory measures that might favour or adversely affect certain participants, and are not prone to opportunities of collusion and excessive discretion.

16. It is generally accepted by procurement experts that these principles, if properly applied, will ensure the procurement objectives set out in Section B of this manual are realized by subproject owners and represent best procurement practice. However, in setting the requirement that “FIL procurement is undertaken by the respective loan beneficiaries in accordance with

established private sector or commercial practices, acceptable to ADB,” ADB recognizes that it may be in the interests of commercial borrowers of ADB funds to apply these principles in a more flexible manner than as stipulated in ADB’s detailed procurement guidelines that have been designed with public procurement primarily in mind.

D. Specific Guidance on FIL Procurement

17. This section of the manual builds on the earlier content by providing some specific guidance to subproject owners. The section first gives guidance on how generally accepted procurement objectives might be best achieved and then considers each of the ADB procurement principles in turn and gives guidance on compliance.

1. Ensuring the Procurement Results are Fit for Purpose

18. For potential suppliers to provide equipment, goods or services that meet the needs of the purchaser, it is vital that purchasers clearly articulate their needs and expectations to those potential suppliers. Therefore, appropriate written information should be provided to potential suppliers. A good written specification of purchaser needs will enhance the prospects for those needs being successfully met and will also provide a basis for any procurement disputes to be adjudged and settled in a fair way.

19. Feasibility study reports will have been prepared and approved for all the subprojects. These feasibility study reports will document the performance expectations of the subproject and therefore, it is important that, as a minimum, these expectations are included in relevant procurement specifications.

20. For the procurement of key equipment and/or civil works that are critical to the performance of the subproject then the procurement documentation should include a more detailed design specification. This should be prepared by qualified technical staff in conjunction with procurement staff.

21. For the procurement of services (such as technical support to assist the implementation of the subproject), it is important to ensure the potential service providers are suitably qualified, and that the scope of work and the required outputs/deliverables of the service provider are clearly defined.

2. Achieving Value for Money

22. Value for money (VFM) is normally considered to be achieved if the purchaser feels they have paid a fair price for what they have received. However, some would argue that VFM is only achieved if one pays the lowest available price.

23. In reality, VFM is a more complex concept to assess than simply through a purchase price comparison alone. For example, for an equipment purchase, the costs or downtime for equipment servicing, and the availability of spare parts may be important factors to the purchaser. Additional length of a performance guarantee (over and above anything specified by the purchaser) might also legitimately influence the purchaser to not purchase based on the cheapest price. If VFM is to be assessed on a scientific basis then a risk-based approach over the equipment life cycle should be used, but even then there will be subjectivity over matters such as assessing the level of risk and the value of maintaining a long-lasting and trusted purchaser-supplier relationship.

24. Specific guidance on making VFM judgements is as follows:

- Consider what factors will affect the VFM judgement in advance of procurement and where possible include these into the product specification. Also ask all potential suppliers to provide supplementary information considered relevant to the purchase decision in addition to the basic supply price (e.g., response time to breakdowns, guarantee terms, service frequencies, downtime and costs, delivery periods and costs of spare parts).
- Establish a company procurement committee to evaluate VFM and make procurement decisions as a means of reducing the individual subjectivity in VFM assessments. Ensure that records are kept of decisions made and the reasons for them, so that independent or higher level reviews can assess their reasonableness.
- Use open procurement (see below) wherever possible so that the lowest available specification compliant price is known thus making the price premium paid for non-quantifiable VFM factors readily identifiable.
- Only use sole supplier purchasing where either (i) an existing competitively let rolling supplier contract already exist; or (ii) there has been recent similar procurement made via open procurement; or (iii) extenuating circumstances apply that justify short-cutting normal procedures and company standing orders allow for this (note: such a situation under the FIL is extremely unlikely and such short-cutting is normally only justified in response to an emergency).

3. Timeliness and Efficiency of Procurement

25. For the procurement process to operate in a timely and efficient manner, the subproject will need to be planned and budgeted, so procurement activities are carefully scheduled to be compatible with the subproject implementation plan and also that financial commitments can be met when due.

26. It follows that procurement plans should (i) be linked to the financial plans, (ii) allow a realistic time for the completion of individual activities, and (iii) as far as possible avoid a "log jam" of activity in the procurement department.

27. Efficiency of procurement will be achieved where (i) companies develop standardized procedures and procurement documentation; (ii) the number of procurement packages are minimized without unduly restricting competitiveness; (iii) adopting simplified procurement procedures for small low value procurement; and (iv) the use of existing rolling annual or multi-year supplies of services and supplies for which a company has a regular demand.

4. Use of Competitive Procurement

28. Effective competition undoubtedly reduces prices by forcing suppliers to innovate and become more efficient. Purchasers will only be able to benefit from reductions that are available if they use procurement procedures based on competitive bidding or shopping.

29. Competitive procurement is most commonly achieved in a project setting through advertising and an open invitation for suppliers to request tender document and submit bids.

30. For some critical and specialist procurement packages a multi-stage procurement process may be advantageous whereby potential suppliers are first invited to pre-qualify by demonstrating

they have the required skills and experience. Then all pre-qualified suppliers would be invited to submit bids.

31. Preparing bids for some procurement packages can impose a heavy workload and expense on potential suppliers, and this can discourage some good quality suppliers from bidding if they feel their chance of being successful is low. Purchasers can guard against the risks this situation creates restricting the number of suppliers invited to bid to a small number (typically three to five) of those most qualified to be the supplier.

32. However, before deciding on the detailed procurement procedures to use they should ensure subproject owners should consult any applicable government laws and regulations on the procurement methods permissible in specific circumstances. This especially applies to state-owned enterprise (SOE) subproject owners who will undoubtedly operate in a more regulated procurement environment than wholly private enterprises.

5. Fairness and Equal Opportunity

33. All eligible bidders should have an equal and fair opportunity. Procurement processes are designed and implemented that avoid preferential or discriminatory measures that might favour or adversely affect certain participants.

34. Fairness and equal opportunity goes hand in hand with procurement procedures that require open competitive bidding. It also goes hand in hand with transparency in procurement (see below).

35. Further measures to promote fairness and equal opportunity include:

- Ensuring that potential suppliers have adequate time to submit bids or expressions of interest (the actual time allowed should depend on the complexity of the procurement and the level of detail requested in bids/expression of interest [EOIs]);
- The terms of purchase contracts used are equitable to both sides;
- The purchasing organization has a grievance redress mechanism to deal with cases of alleged unfairness, misprocurement, or other abuses. This mechanism should operate so as to be independent of the purchasing function; and
- Subject only to issues of commercial confidentiality, unsuccessful bidders may request and receive feedback on why they were unsuccessful.

6. Transparency in Procurement

36. Transparency of procurement processes are those governed by clear rules that are easily accessible and can be consistently applied. That is not only is the purchaser fair and providing equal opportunity they can be seen to be open and fair in their procurement activity.

37. Transparent procurement involves contract opportunities (procurement plans and individual bid opportunities) being advertised widely, and results are published (or at least made available to the unsuccessful bidders).

38. Transparency in procurement has a number of potential benefits to purchasers:

- Competition is increased.
- Suppliers can more readily identify the bids most suited to them allowing them to select which bids to make and better tailor bids to meet the purchaser's needs.

From the purchaser side this reduces the number of poor quality or unqualified bids and should increase bid quality.

- They gain a reputation for openness and fairness in how their businesses are operated and if they practise local procurement policies (where allowed by applicable regulations) for the support they provide the local community.
- Open and transparent processes are less susceptible to abuse through fraud and corruption and such abuse is more likely to be detected.

E. Required Organizational Capacity and Arrangements

39. Subproject owners need to assess whether or not they possess adequate procurement capacity in terms of:

- functional responsibilities;
- internal processes;
- resources and skills;
- information management; and
- experience and performance.

40. For the selection of subprojects, ADB has assessed organizational capacity of proposed subproject owners. The capacity building suggestions of these assessments may be of guidance to others and can be shared by contacting I&G for relevant guidance. A procurement capacity checklist is provided in Annex 1 to this manual.

41. If subproject owners conclude it is uneconomic to build the required internal procurement capacity, then they should consider recruiting the services of a procurement agent to fill the capacity gaps.

Annex 1: Procurement Capacity Checklist

This checklist works systematically through the procurement cycle identifying key requirements at each stage.

I. Specific Assessment and Ratings

QUESTION		
Name of the Company		
Checklist filled by:		
Position:		
Tel/Mobile:		
Email:		
A. ORGANIZATIONAL AND STAFF CAPACITY	RESPONSE: 'YES' OR 'NO' WITH BRIEF COMMENTS	RISK
A.1. Is there a permanent properly staffed procurement unit in the IA?		
• Number of procurement staff		
• Position of the procurement unit in the company		
• Name of the procurement unit head and years of working experience in procurement		
A.2. Are the number and qualifications of procurement staff sufficient to undertake the procurement under the proposed project?		
A.3. Does the procurement unit undertake procurement in accordance commercial practices in the sector?		
• If the company is not an SOE, does the procurement unit have clear procurement rules and procedures?		
• Please indicate a simplified full procurement procedures		
A.4. Do the commercial practices comply with requirements of national and provincial procurement laws and regulations?		
• If the company is an SOE, does the procurement comply with the Law on Tenders and Bids?		
• Has the procurement unit prepared procurement rules and procedures accordingly?		
B. INFORMATION MANAGEMENT		
B.1. Is there a referencing system for procurement files in the company?		
• If "yes", please indicate how the system is referencing (i.e., by date, by types [civil works, equipment, services, etc.], amount, etc.)		
B.2. Is there adequate equipment and personnel to administer the procurement records management functions?		

QUESTION		
• Does the procurement unit or company Archives Department administrate the records?		
• The records are kept in e-file, hard copies or both?		
B.3. Does the procurement unit adhere to a document retention policy (i.e., for what period are records kept)?		
B.4. Is there a single contract file with a copy of contracts and all subsequent contractual correspondence?		
C. PROCUREMENT PRACTICES		
Goods and Works		
C.1 Does the procurement unit have a manual for procurement of goods and works?		
C.2 Is there a bid evaluation committee (permanent or ad-hoc) established within the IA?		
C.3 Is the decision of a bid evaluation committee final or subject to approval by higher authorities within the IA?		
C.4 Do the commercial practices applied by the IA comply with key procurement principles of open competition, economy, efficiency, fairness and transparency?		
D. EFFECTIVENESS		
D.1. Is contractual performance systematically monitored and reported?		
D.2. Does the agency monitor and track its contractual payment obligations?		
D.3. Is a complaints resolution mechanism described in national procurement documents?		
D.4. Is there a formal non-judicial mechanism for dealing with complaints?		
E. ACCOUNTABILITY MEASURES		
E.1. Is there a standard statement of ethics to which the procurement unit is required to formally commit?		
E.2. Are staff of the procurement unit required to declare any potential integrity violations during the procurement process?		
E.3. Is the performance of the procurement unit subject to annual audit?		

II. General Rating

Criterion	Risk
A. Organizational and Staff Capacity	
B. Information Management	
C. Procurement Practices	
D. Effectiveness	
E. Accountability Measures	
OVERALL RISK RATING	

ADB PROHIBITED INVESTMENT ACTIVITIES LIST

The following do not qualify for Asian Development Bank financing:

- (i) production or activities involving harmful or exploitative forms of forced labor¹ or child labor;²
- (ii) production of or trade in any product or activity deemed illegal under host-country laws or regulations, or international conventions and agreements, or subject to international phase outs or bans, such as (a) pharmaceuticals,³ pesticides, and herbicides;⁴ (b) ozone-depleting substances;⁵ (c) polychlorinated biphenyls⁶ and other hazardous chemicals;⁷ (d) wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora;⁸ and (e) trans-boundary trade in waste or waste products;⁹
- (iii) production of or trade in weapons and munitions, including paramilitary materials;
- (iv) production of or trade in alcoholic beverages, excluding beer and wine;¹⁰
- (v) production of or trade in tobacco;¹⁰
- (vi) gambling casinos and equivalent enterprises;¹⁰
- (vii) production of or trade in radioactive materials,¹¹ including nuclear reactors and their components;
- (viii) production of, trade in, or use of unbonded asbestos fibers;¹²
- (ix) commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests;
- (x) marine and coastal fishing practices, such as large-scale pelagic drift-net fishing and fine-mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats; and
- (xi) production or activities that impinge on lands owned, or claimed under adjudication, by indigenous peoples, without the full documented consent of such peoples.

¹ Forced labor means all work or services not voluntarily performed, that is, work or services extracted from individuals under threat of force or penalty.

² Child labor means the employment of children whose age is below the host country's statutory minimum age of employment, or the employment of children in contravention of International Labor Organization Convention No. 138, "Minimum Age Convention" (www.ilo.org).

³ A list of pharmaceutical products subject to phase outs or bans is available at <http://www.who.int>

⁴ A list of pesticides and herbicides subject to phase outs or bans is available at <http://www.pic.int>

⁵ The chemical compounds that react with and deplete stratospheric ozone, resulting in the widely publicized ozone holes, are listed in the Montreal Protocol, together with target reduction and phase out dates. Information is available at <http://www.unep.org/ozone/montreal.shtml>

⁶ A group of highly toxic chemicals, polychlorinated biphenyls are likely to be found in oil-filled electrical transformers, capacitors, and switchgear dating from 1950 to 1985.

⁷ A list of hazardous chemicals is available at <http://www.pic.int>

⁸ A list is available at <http://www.cites.org>.

⁹ As defined by the Basel Convention; see <http://www.basel.int>

¹⁰ This does not apply to project sponsors that are not substantially involved in these activities. "Not substantially involved" means that the activity concerned is ancillary to a project sponsor's primary operations.

¹¹ This does not apply to the purchase of medical equipment, quality control (measurement) equipment, and any other equipment for which ADB considers the radioactive source to be trivial or adequately shielded.

¹² This does not apply to the purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.

TEMPLATE FOR SEMI-ANNUAL PROGRESS REPORT

报告期 (Reporting period)		提交日期 (Date of Submission)	
A. 介绍及基础数据 (INTRODUCTION AND BASIC DATA)			
1. 项目基础信息 (Basic Project Information)			
项目号 (Project/Loan Number)	PRC: 50096/L XXXX		
项目名称 (Project Title)	Air Quality Improvement in the Greater Beijing–Tianjin–Hebei Region—China National Investment and Guaranty Corporation's Green Financing Platform Project		
接收人 (Recipient)	People's Republic of China		
执行机构 (Executing Agency)	State Development and Investment Corporation (SDIC)		
实施单位 (Implementing Agency)	China National Investment and Guaranty Corporation (I&G)		
项目汇总表 (Project Summary Cost Estimates) (€ million)			
Item	Amount		
A. Base Cost			
1.			
2.			
3.			
Subtotal (A)			
B. Contingencies			
C. Financial Charges During Implementation			
Total Project Cost (A+B+C)			
项目融资计划 (Project Summary Financing Plan)			
Source 资金来源	Amount (€ million) 金额	Share of Total (%) 占比	
Asian Development Bank 亚行	458.0		
Ordinary Capital Resources 普通资金来源			
Total Project Cost			
2. 项目批准、生效及关闭日 (Project Approval, Effectiveness and Closing Dates)			
批准日期 (Approval date)		项目实施期限 (原) [Elapsed project period (original)]	
贷款协定、项目协定签字日 (Loan signing date)		关帐日 (修改后) (Loan closing date) (revised)	
生效日期 (Loan effective date)		项目实施期限 (修改后) [Elapsed project period (revised)]	
关帐日(原定)(Loan closing date) (original)		亚行上次项目检查时间 (Date of last ADB review mission)	

B. UTILIZATION OF FUNDS

Table 1: Withdrawal Progress of Subprojects(First batch of Subprojects)

Subborrower	Total Investment Cost	ADB Loan				Cofinancing				Withdrawal Progress				
										Cumulated Up to the End of Last Period	Amount this Period	Cumulative Amount	%	
	US\$	%	US\$	Euro	%	US\$	CNY	US\$	Euro	US\$	Euro	CNY	US\$	
A. Financing Product 1														
xxx														
xxx														
B. Financing Product 2														
xxx														
xxx														
Total														

Table 2: Payback Progress of Subprojects (First Batch of Subprojects)

Subborrower	Total Investment Cost	ADB loan				Payback Progress						
						Cumulated Up to the End of Last Period		Amount this Period		Cumulative Amount		%
	US\$	%	US\$	Euro		US\$	Euro	US\$	Euro	US\$	Euro	
A. Financing Product 1												
xxx												
xxx												
B. Financing Product 2												
xxx												
xxx												
Total												

C. 实施进度 (IMPLEMENTATION PROGRESS)
1. 报告期间项目实施进度情况 (Project Implementation Progress during the Reporting Period by Output)
[_____, (State the progress and achievements in implementation by output since the last progress report.)]
2. 项目实施安排 (Project Implementation Arrangements)
[_____, (State assessment of project implementation arrangements such as establishment, staffing, and funding of the PMO)]
3. 项目进度评价 (Assessment of Project Progress)
(Assess progress in implementing the overall project to date in comparison with the original implementation schedule—quantifiable and monitorable target, (include simple charts such as bar or milestone to illustrate progress, a chart showing actual versus planned expenditure, S-curve graph showing the relationship between physical and financial performance, and actual progress in comparison with the original schedules and budgets, the reference framework or guidelines in calculating the project progress including examples are shown in <i>the project administration memorandum [PAM]</i>) (You can append existing chart/table/graph showing physical and financial progress as appendixes, if any.)
4. 评价主要假设条件及风险的有效性 (Assessment of the Validity of Key Assumptions and Risks)
[评价实现量化后的实施目标所设想的主要假设条件及风险的有效性 (Assess the validity and key assumptions and risks in achieving the quantifiable implementation targets)]
5. Progress of Subborrower
6. Effectiveness of RFA
7. Interest Differential Accumulated and Used, and effectiveness in achieving its targeted objectives
8. Implementation of ESMS
(Include implementation of activities in the environmental management plan under the ESMS for subprojects)
9. Selection of Subsequent Batches of Subprojects

(Include progress in identifying, screening, assessing, and selection future subprojects).

D. 项目建设目标 (PROJECT PURPOSES)

1. 建设内容/实施安排状况 (Status of Project Scope/Implementation Arrangements)

[_____, (Assess the status of project scope/implementation arrangements compared with those in the project document, and whether major changes have occurred or will need to be made.))]

2. 项目成果实现的可能性及补救措施

(Likelihood of Achievement of the Project Outcomes and Remedial Measures)

[_____, (Assess the likelihood that the immediate development objectives (project purpose) will be met in part or in full, and whether remedial measures are required based on the current project scope and implementation arrangements.))]

3. 主要设想和风险变更 (Changes to the Key Assumption and Risks)

[_____, (If applicable, assess changes to the key assumptions and risks that affect attainment of the development objectives.))]

4. 其他建设内容 (Other Project Developments)

[_____, (If applicable, state any other project developments, including monitoring and reporting on environmental and social requirements that might adversely affect the project's viability or accomplishment of immediate objectives.))]

E. 相关条款的遵从 (COMPLIANCE WITH COVENANTS)

[_____ (Summarize the status of the borrower's and EA's compliance with key financial, safeguards, and other covenants, particularly, for those covenants on due.))]

F. 主要问题与困难 (MAJOR PROJECT ISSUES AND PROBLEMS)

[如适用, 请归纳影响或有可能影响项目实施进度、符合各条款要求, 及实现即期目标等的主要问题, 提出解决这些问题的建议 (如变更建设内容、项目实施安排及贷款资金的再分配) (If applicable, summarize the major problems and issues affecting or likely to affect implementation progress, compliance with covenants, and achievement of immediate development objectives. Recommend actions to overcome these problems and issues (e.g., changes in scope, changes in implementation arrangements, and reallocation of loan proceeds))]

G. 下一季度工作计划 (WORK PLAN FOR NEXT 6 MONTHS)

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Status of Compliance with Major Loan and Project Covenants
贷款协定和项目协定中主要条款的遵守情况

Schedule	Paragraph No.	Description	Status	Type