

INTEGRATED RISK ASSESSMENT AND MITIGATING MEASURES

1. The integrated risk matrix summarizes the findings of the integrated risk assessment and the mitigating measures for the Air Quality Improvement in the Greater Beijing–Tianjin–Hebei Region—Henan Cleaner Fuel Switch Investment Program.

Integrated Risk Matrix		
Risks	Rating Without the Mitigating Measures	Key Mitigating Measures
Results		
Portions of the population in semi-urban and rural areas may refuse gas connections because of limited affordability.	Substantial	The program offers end-pipe connections to each customer at no cost and installment payments for the purchase of gas appliances to reduce the initial cost burden.
Slower transition to cleaner fuel and/or persistent use of traditional fuels (e.g., coal, wood, and agriculture waste) continues even after gas connections are made.	Substantial	An awareness campaign regarding cleaner fuel use and safety will stimulate demand among customers. The customer service focal point deployed in each township and village will facilitate the transition to cleaner fuel.
Biogas plant fails to achieve targeted production volume.	Substantial	The involvement of an internationally experienced technology provider in building the biogas plant substantially reduces the risk associated with deploying technology new to the PRC.
Inaccurate primary data is entered into the MIS, and DLI-related information is not disclosed, reducing feedback from customers.	Moderate	The risks that inaccurate information is input into the MIS is mitigated through the enhanced internal audit function (to be in place by 2019) and the information disclosure policy (to be adopted by 2019) included in the PAP. The independent verification agent will also function to check inputted data through site inspection.
Expenditures and financing risks		
Implementing agencies fail to mobilize the financing needed for ongoing implementation of the overall program following RBL program completion.	Substantial	Under the PAP, an external board of director (to the existing board) for financial management will be selected by 2020 under a competitive process, which will enhance capacity to build a financing strategy. Adoption of a fund mobilization plan in 2021 for ongoing implementation following the RBL program is one of the DLIs.
The domestic bank loan and equity contribution from the implementing agencies fails to be mobilized to implement the RBL program.	Low	CDB intends to provide debt financing to the program and issued a letter of intent to the implementing agency. CNY100 million of equity has already been generated through the Yun-Tian Investment Fund.

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Cost overruns in natural gas distribution and the biogas production plant in the RBL program affect financial sustainability of overall program.	Moderate	The unit cost for natural gas distribution reflects the actual costs (both in the 2018 activities of the overall program and CTLG's investment in supplying gas in urban areas). CTLG as shareholder of YTNE provides technical support in controlling the cost. Unit cost of biogas reflects the current international overnight cost of a biogas plant. Engagement of international technology supplier for biogas component is mandated in the legal covenants to control the cost.
Fiduciary risks (Financial Management)		
Weak internal control and credit risk management functions of the implementing agencies affect financial sustainability of overall program.	Substantial	Engage external board of director to the existing board, adopt stronger internal controls and strengthen risk management guidelines, and increase staffing for internal control and credit risk management, as specified in PAP actions.
Fiduciary risks (Procurement)		
Implementing agencies fail to retain experienced procurement staff and/or to provide the needed training to use national standard bidding document templates and to assure market openness and the quality of project procurement and contract management.	Moderate	The PAP requires that any qualified procurement and contract expert(s) be made available and that adequate in-house training for procurement and anti-corruption be provided for procurement staff on an ongoing basis.
Fiduciary risks (Anti-corruption)		
Implementing agencies failed to adopt ADB's Anticorruption Policy (1998, as amended to date) and Integrity Principles and Guidelines to prevent corrupt activities and other abuse. ^a	Moderate	The provincial government's regulations on anti-corruption and integrity are also applicable to the program to prevent corrupt activities and abuses. The PAP requires adoption of ADB's Anticorruption Policy and Integrity Principles and Guidelines.
Safeguard related risks		
Environmental and social safeguards screening, planning, and monitoring are inadequate to comply with ADB's safeguard policies and requirements.	Moderate	In accordance with the PAP: (i) the program's Environmental and Social Safeguard Technical Guidelines were adopted in September 2019; (ii) a Safeguard Unit will be established and qualified staff recruited by December 2019; and (iii) environmental and social safeguards training will be provided to staff and contractors by March 2020, and will continue throughout program implementation.

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Operating environment risks		
Shortage of natural gas slows the switch from coal to gas.	Moderate	The natural gas supply in PRC's domestic market became tight in the winter of 2017 because of a sudden ban on coal use in major cities. Since 2018, the government has initiated natural gas sector deregulation to stimulate private sector involvement in upstream and downstream natural gas supply to meet growing domestic demand.
Overall RBL program risks	Moderate	

ADB = Asian Development Bank, CDB = China Development Bank, CTLG = China Tian Lun Gas Holding Limited, DLI = disbursement-linked indicator, MIS = Management Information System, PAP = program action plan, PRC = People's Republic of China, RBL = results-based lending, SPS = safeguard policy statement.

Note: Risk factors are assessed against two dimensions: (i) the likelihood that the risk will occur, and (ii) the impact of the risk on the outcome. Rating scale: low = low likelihood and low impact; moderate = substantial to high likelihood but low to moderate impact; substantial = low to moderate likelihood but substantial to high impact; and high = high likelihood and high impact.

^a ADB. 2015. *Integrity Principles and Guidelines*. Manila.

Source: Asian Development Bank estimates.