



Innovative Financing for Air Pollution Control in Jing-Jin-Ji (P154669)

EAST ASIA AND PACIFIC | China | Energy & Extractives Global Practice | Requesting Unit: EACCF | Responsible Unit: IEAE1
IBRD/IDA | Program-for-Results Financing | FY 2016 | Team Leader(s): Ximing Peng, Xiaodong Wang

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Program Development Objectives

Program Development Objective (from Program Appraisal Document)

To reduce air pollutant and carbon emissions through increasing energy efficiency and clean energy, with a focus in Beijing-Tianjin-Hebei (Jing-Jin-Ji) and neighboring regions.

Overall Ratings

Name	Previous Rating	Current Rating
Progress towards achievement of PDO	Highly Satisfactory	Highly Satisfactory
Overall Implementation Progress (IP)	Satisfactory	Satisfactory

Implementation Status and Key Decisions

Program implementation continues to have high leverage of IBRD funds, but has slowed down since 2020 due to the macroeconomic and sectoral challenges induced by COVID -19 pandemic. The program has made important contributions to air pollution control in the Jing-Jin-Ji (JJJ) region, and the government's Nationally Determined Commitments (NDC) targets of CO2 emission reduction and climate change mitigation. The program has mainstreamed green financing at HuaXia Bank (HXB), who has become a top leader on green financing in China. The program has achieved significant leveraging – 2.3 leverage ratio between IBRD loan and HXB's own financing under the PforR program. HXB has also developed innovative business models and financing mechanisms to remove the financing barriers.

Data on Financial Performance

Disbursements (by loan)

Project	Loan/Credit/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	% Disbursed
P154669	IBRD-85920	Effective	USD	500.00	500.00	0.00	411.06	108.67	79%

Key Dates (by loan)

Project	Loan/Credit/TF	Status	Approval Date	Signing Date	Effectiveness Date	Orig. Closing Date	Rev. Closing Date
P154669	IBRD-85920	Effective	22-Mar-2016	20-May-2016	18-Aug-2016	30-Jun-2022	30-Jun-2022



DLI Disbursement

DLI ID	DLI Type	Description	Coc	DLI Amount	Achievement Status	Disbursed amount in Coc	Disbursement % for DLI
Loan: IBRD85920-001							
1	Regular	Sub-loans disbursed to Sub-borrowers	EUR	276,000,000.00	Partially Achieved	166,702,957.30	60 %
2	Regular	Coal reduction from subprojects	EUR	115,000,000.00	Fully Achieved	99,447,194.70	86 %
3a&b	Regular	SO2 & NOx reduction from desulfurization	EUR	23,000,000.00	Fully Achieved	3,390,848.00	15 %
4	Regular	Finance center & procedures for lending	EUR	9,890,000.00	Fully Achieved	9,890,000.00	100 %
5	Regular	No of innov finance products	EUR	16,560,000.00	Fully Achieved	16,560,000.00	100 %
6	Regular	No of different ESCOs	EUR	18,400,000.00	Partially Achieved	12,880,000.00	70 %

Program Action Plan

Action Description	The HXB to provide extensive training to its staff at HQ and branches on technical, results M&V, environmental and social, procurement, and FM areas				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Technical		Client	Recurrent	Continuous	Completed
Completion Measurement	The program is to be closed on June 30, 2022. So continuous training activities will be provided by HXB itself.				
Comments					

Action Description	The HXB to designate specific staff to be responsible for technical, fiduciary, and environmental and social aspects				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Technical		Client	Due Date	29-Nov-2016	Completed
Completion Measurement	HXB already established a green finance center, and the required specific staff are in place.				
Comments					

Action Description	HXB to engage experts for technical, fiduciary, and environmental and social support as needed				
Source	DLI#	Responsibility	Timing	Timing Value	Status
		Client	Due Date	31-May-2018	Completed
Completion Measurement					



Comments	
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Action Description	HXB to specify the fiduciary and environmental and social requirements and procedures in the OM				
Source	DLI#	Responsibility	Timing	Timing Value	Status
		Client	Due Date	16-Dec-2015	Completed
Completion Measurement					
Comments					

Action Description	HXB to specify the fiduciary and environmental and social requirements and procedures in the subloan agreements with sub-borrowers				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Technical		Client	Recurrent	Continuous	Completed
Completion Measurement	All sub-loans under the program were completed by end June 2022.				
Comments					

Action Description	HXB to report required actions taken to the Bank in program reports				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Technical		Client	Recurrent	Yearly	Completed
Completion Measurement	Semi-annual and annual reports were provided by HXB as required.				
Comments					

Action Description	Technical: HXB to engage independent third-party IVAs for results M&V				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Technical		Client	Recurrent	Continuous	Completed
Completion Measurement	All verification reports were submitted to the Bank, except for two pending verification to be carried out in July 2022 per discussion with the Bank in June 2022.				
Comments					

Action Description	Technical: The HXB to report portfolio composition and quality to the Bank to ensure transparency and quality of the portfolio				
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Source	DLI#	Responsibility	Timing	Timing Value	Status
Technical		Client	Recurrent	Yearly	Completed
Completion Measurement	The pipeline of sub-loans were provided and reviewed in each mission.				
Comments					

Action Description	Procurement: In line with Article 34 of the Regulation on the Implementation of the Tendering and Bidding Law of the People's Republic of China, the sub-project application and the sub-loan agreement with beneficiaries include a mandatory provision				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Fiduciary Systems		Client	Recurrent	Continuous	Completed
Completion Measurement	No more procurement is needed as the program is to be closed on June 30, 2022.				
Comments					

Action Description	Procurement: HXB to set up a complaints handling mechanism and reporting procedures, details of which will be included in the subproject application package and on the HXB's website.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
		Client	Due Date	31-Aug-2016	Completed
Completion Measurement					
Comments					

Action Description	Procurement: The HXB and the subloan beneficiaries shall cooperate fully with representatives of the Bank in any inquiry conducted by the Bank into allegations or other indications of F&C in connection with the program.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Fiduciary Systems		Client	Recurrent	Continuous	Completed
Completion Measurement	The program is to be closed on June 2022, so no more supervision will be arranged.				
Comments					

Action Description	Procurement: The OM and subloan agreement to include that sub-borrowers will not award contracts to firms and individuals on temporary suspension or debarment by the Bank and other MDBs.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
		Client	Due Date	15-Dec-2016	Completed
Completion Measurement					



Comments					
Action Description	Procurement: HXB to strengthen its capacity to assess the capacity of beneficiaries to carry out procurement and contract management efficiently as part of subproject appraisal and provide guidance to beneficiaries with weak procurement capacity.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Fiduciary Systems		Client	Recurrent	Continuous	Completed
Completion Measurement	The program is to be closed on June 30, 2022, so no more sub-loans will be financed under the program.				
Comments					

Action Description	Procurement: The HXB will hire expertise as needed to strengthen procurement and contract management.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
		Client	Due Date	31-May-2018	Completed
Completion Measurement					
Comments					

Action Description	Financial Management: HXB to set up the memorandum records for the program to record each subloan released and related reference information for ease of tracking the record in the corporate accounting system and the original supporting documents.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Fiduciary Systems		Client	Recurrent	Continuous	Completed
Completion Measurement	The program is to be closed in June 2022, and HXB will use its established system to monitor this work.				
Comments					

Action Description	Financial Management: HXB to conduct reconciliation between the CBD and the accounting division on a quarterly basis.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Fiduciary Systems		Client	Recurrent	Quarterly	Completed
Completion Measurement	The program is to be closed on June 30, 2022.				
Comments					



Action Description	Financial Management: Annually, HXB to prepare the program-specific financial report according to the specifically tailored format agreed with the Bank for the program and submit report to the Bank				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Fiduciary Systems		Client	Recurrent	Yearly	Completed
Completion Measurement	Semi-annual and annual progress reports were submitted by HXB.				
Comments					

Action Description	Environmental and Social: HXB to strengthen environment and social impact management within the bank by specifying the requirements and procedures in the OM.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
		Client	Due Date	16-Dec-2015	Completed
Completion Measurement					
Comments					

Action Description	Environmental and Social: Enhance capacity of the HXB staff by designating staff, allocating adequate resources, and specifying operating arrangements and coordination with other departments in the bank.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
		Client	Due Date	30-Dec-2016	Completed
Completion Measurement					
Comments					

Action Description	Achievement of DLI4: to establish a Green Finance Center, and disburse \$10.75.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
		Client	Due Date	31-Jan-2017	Completed
Completion Measurement					
Comments					

Action Description	Achievement of DLI1: to approve sub-projects with no less than \$50m, and disburse of \$15m by the end of 2016.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
		Client	Due Date	30-Dec-2016	Completed
Completion Measurement					



Comments	
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Action Description	Submit all candidate sub-projects involving “ building large-scale efficient facilities to replace small inefficient ones” to WB for screening.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
Technical		Client	Recurrent	Continuous	Completed
Completion Measurement	The pipeline of new sub-loans was submitted and reviewed by the Bank in each mission.				
Comments					

Action Description	A screening table covering all key social requirements in OM should be developed as part of subproject document requirement, and be attached to the subproject application package in the review process within the Hua Xia Bank.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
		Client	Due Date	31-May-2018	Completed
Completion Measurement					
Comments					

Action Description	A social monitoring report should be prepared, based on desk review of compliance of OM by all subprojects before loan approval, and field visit reporting of all subprojects after the loan approval.				
Source	DLI#	Responsibility	Timing	Timing Value	Status
		Client	Due Date	31-May-2018	Completed
Completion Measurement					
Comments					

Action Description	Submit verification report on the results of DLI-1, issued by a third-party, to WB				
Source	DLI#	Responsibility	Timing	Timing Value	Status
		Client	Due Date	30-Jun-2017	Completed
Completion Measurement					
Comments					

Action Description	Submit an annual report to WB.				
Source	DLI#	Responsibility	Timing	Timing Value	Status



		Client	Recurrent	Yearly	Completed
Completion Measurement					
Comments					

Action Description	The Bank to provide training to the HXB in technical, results M&V, environmental and social, procurement, and FM areas				
Source	DLI#	Responsibility	Timing	Timing Value	Status
		Bank	Due Date	29-Nov-2016	Completed
Completion Measurement					
Comments					

Risks

Systematic Operations Risk-rating Tool

Risk Category	Rating at Approval	Previous Rating	Current Rating
Political and Governance	--	<input type="checkbox"/> Low	<input type="checkbox"/> Low
Macroeconomic	--	<input type="checkbox"/> Substantial	<input type="checkbox"/> Moderate
Sector Strategies and Policies	--	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Technical Design of Project or Program	<input type="checkbox"/> Moderate	<input type="checkbox"/> Low	<input type="checkbox"/> Low
Institutional Capacity for Implementation and Sustainability	--	<input type="checkbox"/> Low	<input type="checkbox"/> Low
Fiduciary	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Environment and Social	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Stakeholders	--	<input type="checkbox"/> Low	<input type="checkbox"/> Low
Other	<input type="checkbox"/> Substantial	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
Overall	<input type="checkbox"/> Substantial	<input type="checkbox"/> Substantial	<input type="checkbox"/> Moderate

Comments

The risk rating for "macroeconomic" is proposed to be moderate as the program is to be closed on June 30, 2022 and no more business development will be needed under the program, so the future macroeconomic situation will affect only the operation of existing sub-projects.

Results

PDO Indicators by Objectives / Outcomes



Reduction in particulate emissions from eligible EE and RE subprojects (thousand tons)				
▶ PDO Indicator 1: Reduction in particulate emissions from eligible EE and RE subprojects (thousand tons) (Number (Thousand), Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	4.10	4.23	3.60
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	30-Jun-2022
Comments	Fully achieved.			
Reduction in SO2 emissions from eligible EE, RE, and desulfurization subprojects (thousand tons)				
▶ PDO 2 Reduction in SO2 emissions from eligible EE, RE, and desulfurization subprojects (thousand tons) (Metric tons/year, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	14.10	14.30	16.90
Date	01-Jul-2016	23-Dec-2021	23-Jun-2022	30-Jun-2022
Comments	partially achieved, as there is limited market for SO2 removal facility after most of existing factories have been installed with desulfurization facilities by end 2020.			
Reduction of NOX emission from EE, RE and Denitrification subprojects (thousand tons)				
▶ PDO Indicator 3: Reduction in NOx emissions from eligible EE, RE, and denitrification subprojects (thousand tons) (Number (Thousand), Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	15.60	17.07	12.70
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	30-Jun-2022
Comments	Full achieved.			
Reduction in CO2 emissions from eligible EE and RE subprojects (thousand tons)				
▶ PDO Indicator 4: Reduction in CO2 emissions from eligible EE and RE subprojects (thousand tons) (Number (Thousand), Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	2,783.50	2,866.49	2,461.00
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	30-Jun-2022
Comments	Fully achieved.			

Intermediate Results Indicators by Results Areas



Intermediate Result Indicator 1: Total investments in eligible EE, RE and pollution abatement subprojects

► Intermediate Result Indicator 1: Total investments in eligible EE, RE and pollution abatement subprojects (million USD) (Amount(USD), Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	1,669.20	1,766.47	1,400.00
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	30-Jun-2022
Comments	Fully achieved.			

Intermediate Result Indicator 2: Subloans (for eligible EE, RE, and pollution abatement subprojects) disbursed to sub-borrowers

► Intermediate Result Indicator 2: Subloans(for eligible EE, RE, and pollution abatement subprojects) disbursed to sub-borrowers (million USD) (Amount(USD), Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	721.10	750.53	1,000.00
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	30-Jun-2022
Comments	Partially achieved.			

Intermediate Result Indicator 3: Coal reduction from eligible EE and RE subprojects

► Intermediate Result Indicator 3: Coal reduction from eligible EE and RE subprojects (thousand tce) (Number (Thousand), Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	1,140.80	1,174.79	1,000.00
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	30-Jun-2022
Comments	Fully achieved.			

Intermediate Result Indicator 4: Reduction of SO2 emissions from desulfurization subprojects

► Intermediate Result Indicator 4: Reduction of SO2 emissions from desulfurization subprojects (thousand tons) (Number (Thousand), Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	7.50	7.55	10.80
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	30-Jun-2022
Comments	Partially achieved.			

Intermediate Result Indicator 5: Reduction of NOx emissions from denitrification subprojects

► Intermediate Result Indicator 5: Reduction of NOx emissions from denitrification subprojects (thousand tons) (Number (Thousand), Custom)



	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	9.90	11.22	7.40
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	30-Jun-2022
Comments	Fully achieved.			

Intermediate Result Indicator 6: Establishment of a Green Finance Center at the HXB and adoption of internal procedures for the identification, risk assessment, appraisal, and approval of green lending

► Intermediate Result Indicator 6: Establishment of a Green Finance Center at the HXB and adoption of internal procedures for the identification, risk assessment, appraisal, and approval of green lending (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	1.00	1.00	1.00
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	30-Jun-2022
Comments	This indicator is achieved on Dec. 26, 2016.			

Intermediate Results Indicator 7: Number of different eligible innovative financial products for green financing deployed

► Intermediate Result Indicator 7: Number of different eligible innovative financial products for green financing deployed (number of products) (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	3.00	4.00	3.00
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	30-Jun-2022
Comments	Fully achieved.			

Intermediate Result Indicator 8: Number of different ESCOs receiving subloans (for eligible EE and RE subprojects)

► Intermediate Result Indicator 8: Number of different ESCOs receiving subloans (for eligible EE and RE subprojects) (number of ESCOs) (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	8.00	8.00	10.00
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	30-Jun-2022
Comments	Partially achieved.			

Intermediate Result Indicator 9: Number of subprojects financed by syndicated loans

► Intermediate Result Indicator 9: Number of subprojects financed by syndicated loans (number of projects) (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	3.00	3.00	2.00



Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	30-Jun-2022
Comments	Fully achieved.			

Disbursement Linked Indicators

► DLI 1 DLI-1: Subloans (for eligible EE, RE, and pollution abatement subprojects) disbursed to sub-borrowers (million USD) (Intermediate Outcome, 540.00, 0%)				
	Baseline	Actual (Previous)	Actual (Current)	CY2021
Value	0.00	721.10	750.53	1,000.00
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	--
Comments	Partially achieved.			

► DLI 2 DLI-2: Coal reduction from eligible EE and RE subprojects (thousand tons of coal equivalent) (Intermediate Outcome, 195.00, 0%)				
	Baseline	Actual (Previous)	Actual (Current)	CY2021
Value	0.00	575.30	575.30	550.00
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	--
Comments	Fully achieved.			

► DLI 3 DLI-3a: Reduction of SO2 emissions from desulfurization subprojects (thousand tons) (Intermediate Outcome, 16.90, 0%)				
	Baseline	Actual (Previous)	Actual (Current)	CY2021
Value	0.00	7.50	7.55	8.60
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	--
Comments	Partially achieved.			

► DLI 4 DLI-3b: Reduction of NOx emissions from denitrification subprojects (thousand tons) (Intermediate Outcome, 25.30, 0%)				
	Baseline	Actual (Previous)	Actual (Current)	CY2021
Value	0.00	9.90	9.90	5.90
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	--
Comments	Fully achieved.			

► DLI 5 DLI-4: Establishment of a Green Finance Center and adoption of internal procedures for the identification, risk assessment, appraisal, and approval of green lending (Intermediate Outcome, 21.50, 0%)				
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	Baseline	Actual (Previous)	Actual (Current)	CY2021
Value	0.00	1.00	1.00	1.00
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	--
Comments	Fully achieved.			

► DLI 6 DLI-5: Number of different eligible innovative financial products for green financing deployed (# of products) (Intermediate Outcome, 36.00, 0%)

	Baseline	Actual (Previous)	Actual (Current)	CY2021
Value	0.00	3.00	4.00	3.00
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	--
Comments	Fully achieved.			

► DLI 7 DLI-6: Number of different ESCOs receiving subloans (for eligible EE, RE, and pollution abatement subprojects) (# of ESCOs) (Intermediate Outcome, 36.00, 0%)

	Baseline	Actual (Previous)	Actual (Current)	CY2021
Value	0.00	8.00	8.00	10.00
Date	01-Jan-2016	23-Dec-2021	23-Jun-2022	--
Comments	Partially achieved.			