ADB GEF PROJECT IMPLEMENTATION REPORT (PIR)

I. Project Profile

ADB Official Project Title: TA8662-PRC: Improving Clean Bus Operations and Management
ADB Project Number: 8662

1. General Information	1	GEF ID (PMIS ID)	5627
	2	Focal Area(s)	
	3	Region	East Asia
	4	Country	People's Republic of China
	5	Project Title	ASTUD PRC Clean Bus Leasing
	6	Project Size (FSP; MSP)	
	7	Trust Fund (GEFTF; SCCF; LDCF)	
2. Milestone Dates	8	GEF CEO Endorsement Date (mm/dd/yy)	01/10/2014
	9	ADB Approval Date (mm/dd/yy)	06/09/2014
	10	GEF Grant Signing (mm/dd/yy)	06/09/2014
	11	Project Implementation Start Date (mm/dd/yy)	07/16/2015
	12	Date of 1st GEF Grant Disbursement (mm/dd/yy) ***(Definition: Please include initial date of cash advance to Imprest accounts on GEF Funds)***	22/06/2017
	13	Proposed/Revised Implementation End (mm/dd/yy)	12/31/2018
	14	Actual Implementation End (mm/dd/yy)	TBD
3. Funding	15	PPG/PDF Funding (USD)	
	16	GEF Grant (USD)	2.315M
	17	Total GEF Disbursement as of 31 July 2018 (USD)	$830,925
	18	Confirmed Co-Finance at CEO Endorsement (USD)	$275,000,000 (ADB, hard loan); $700,000 (China Clean Development Mechanism Fund)
	19	Materialized Co-Finance at project mid-term (USD)	$275,000,000 (ADB loan).
	20	Materialized Co-Finance at project completion (USD)	n.a.
4. Evaluations	21	Proposed Mid-term date – if applicable (mm/dd/yy)	04/16/2018
	22	Actual Mid-Term date - if applicable (mm/dd/yy)	04/16/2018
	23	Proposed Terminal Evaluation date – if applicable (mm/dd/yy)	n.a.
	24	Actual Terminal Evaluation Date - if applicable (mm/dd/yy)	n.a.
	25	Tracking Tools Required (Yes/No/ Focal Area TT)	Yes, Tracking Tool for Climate Change Mitigation Project
	26	Tracking Tools Date - if applicable (mm/dd/yy) Midterm Tracking Tool Terminal Evaluation Tracking Tool	Not yet identified
5. Ratings	27	Overall Implementation Progress Rating (IP)	Satisfactory
	28	Overall Development Objectives Rating (DO)	Satisfactory
	29	Overall Risk Rating	Low risk

	30	Overall Project Rating	Not yet applicable
6. Status	31	Status (GEF grant for ADB board approval/ GEF grant on-going)	On-going
	32	Implementation Status (1st, 2nd, 3rd PIR..., Final PIR)	3nd PIR
7. Files	33	PIR File Name	

II. Project Contacts

ADB Project Officer:	Susan Lim, Senior Transport Specialist
Division and Department	Transport Division, EARD
Email	slim@adb.org
Address	
EA Project Officer:	Ms. Meng Qui, director[1]; Li Lianghua, project officer[1]; Liu Leilei, project officer[2]
Name of Agency	Ministry of Transport
Department	[1] Transport Services Department; [2] Comprehensive Planning Department
Email	Li Lianghua < 3995909@qq.com>; Liu Leilei <99080954@qq.com>
Address	
Project Implementing Partner	
Name of Agency	
Department	
Contact Person/Officer:	
Email	
Address	
Other Partners	
Name of Agency	
Department	
Contact Person/Officer:	
Email	
Address	

III. Project Implementation

A. Project Description:

A clean bus leasing loan program (CBL) to the PRC was approved by ADB's Board of Directors in 2012. To reinforce and enhance the impact of the CBL, TA8662-PRC: Improving Clean Bus Operations and Management (TA) was developed. The TA was approved on 9 June 2014 and became effective on 16 July 2015. The TA's outcome is improved selection, management, and operation of clean buses in the urban, suburban, and intercity public transport markets. The TA's proposed outputs are: (i) development of a guidebook for selecting a clean and accessible bus; (ii) development of knowledge materials for energy efficient, inclusive and competitive bus operations; (iii) support for energy efficient bus operation systems; (iv) implementation of the clean bus performance monitoring program; and (v) development of an awareness, training, and knowledge sharing program. TA completion will be on 31 December 2018.

B. Implementation Progress (IP) Rating:

IP Status

On 9 June 2014, ADB's Board approved the Proposed Technical Assistance to the People's Republic of China (PRC) for Improving Clean Bus Operations and Management. The total TA amount was $2.315 million financed on a grant basis by the Global Environment Facility. This capacity development technical assistance (TA) aims to maximize the environmental, social, and economic benefits of adopting clean bus technology in the PRC. The TA's outcome is improved selection, management, and operation of clean buses in the urban, suburban, and intercity public transport markets. The TA's proposed outputs are: (i) development of a guidebook for selecting a clean and accessible bus; (ii) development of knowledge materials for energy efficient, inclusive and competitive bus operations; (iii) support for energy efficient bus operation systems; (iv) implementation of the clean bus performance monitoring program; (v) development of an awareness, training, and knowledge sharing program; and (vi) project management.

The original executing agency was the PRC's Clean Development Mechanism Fund (CDMF). Due to changes in strategic direction and its new role as the PPP Center of the PRC, the original project team, Private Sector Financial Institutions Division, Private Sector Operations Department (PSFI), identified the Ministry of Transport (MOT) as the new executing agency and TA administration was transferred to the Public Management, Financial Sector and Regional Cooperation Division, East Asia Regional Department (EAPF) on 9 April 2015. On 5 October 2015, the TA administration was again transferred to the Transport Division, EARD (EATC) to better fit with sector operations.

The TA completion date was extended three times from 31 December 2016 to 31 December 2018 due to minor changes in implementation arrangements and refinement of TA outputs. Nine consultants (3 international and 6 national) were recruited individually and are experts in bus fuel and fleet technology, bus operations and maintenance, bus dispatching, bus management and operations, and bus technology.

Originally, 15 bus companies, included in the Clean Bus Leasing program, were identified to participate in the project. After the inception meeting with MOT on 25 May 2017, two more bus companies were added into the list, Beijing and Shanghai bus companies. The project was implemented in two phases. The first phase covered a survey of five bus companies (Beijing, Fuzhou, Hengyang, Jinan, and Tianjin) which was completed in August 2017 and covered the determination of bus types, fuel types and

available bus operations and monitoring systems. Training on dispatching and maintenance was completed in December 2017 and follow-up training was accomplished in April 2018. The second phase of the surveys was completed in April 2018.

In response to requests from the participating bus companies, ADB procured automated passenger counters (APCs) for Jinan Public Transportation Group (Holdings) Co. Ltd, and Fuzhou Public Transportation Co (50 APCs for each company). These APCs track ridership of the buses in real time and by specific location and will support dynamic bus dispatching. This will support integration of data management and decision support tools into some selected bus companies' systems and this is in line with the required outputs of the TA.

The final workshop entitled High Quality Development of New Energy Buses was held in the China International Exhibition Center on 28-29 May 2018. The workshop included sessions on high-quality development of new energy buses, next generation urban public transport, new energy bus maintenance system, and advanced scheduling technology for new energy buses.

A guidebook on the selection of clean energy buses is being prepared. The English version of this knowledge product will be disseminated during the Transport Forum in September 2018, while the Chinese version will be distributed in October 2018.

Knowledge gained, and lessons learned from the TA on clean energy buses' performance and operations will be shared to the project teams in Gui'an and JIangxi Ji'an. Training will be held in August 2018 and October 2018, respectively.

The IP status is Satisfactory (S) as implementation of most of the components is in compliance with the formally revised implementation arrangements.

a. GEF Grant Disbursement

The first disbursement was on 22 June 2017 for TA administration. The disbursement as of 31 July 2018 is 36% of the total TA amount.

b. Gender Action Plan Implementation Status

Not applicable

c. Social and Environmental Safeguard Plan Implementation Status

Not applicable

C. Global Environmental Benefits (GEB) Objective/ Development Objective (DO) Rating:

Satisfactory impact is expected. The project is expected to achieve most of the outputs.

D. Risk Rating:

The project is considered low risk. The outputs were achieved. The TA has been extended until 31 December 2018 to complete all TA activities.

E. Overall Rating of the Project:
Not yet applicable

F. Additional Comments – Good Practices and Lessons Learned:

Below are some of the lessons learned from the TA outputs:

1. Bus operators need to optimize the electric bus system configuration for types of electric bus technologies, battery size, and charging technology. Parameters such as route distance, electric bus performance in the summer with air-conditioning (AC) usage, battery reserve rates, and battery capacity decline over time need to be taken into account to determine battery sizes of buses under different charging regimes.
2. Hybrid and plug-in hybrid buses save on average 20% fuel. Battery Electric Buses are very sensitive to usage of AC at high temperatures or heating during winter, which can result in an increase of 50% of electricity consumption.
3. Electric Vehicles have zero direct emissions, however, it is irrelevant if emissions are caused at the exhaust pipe or upstream due to energy production and transport/transmission.
4. LCBs have higher investment costs but lower operational expenditures due to lower energy costs and, in the case of BEBs, lower maintenance costs. BEBs have however a 20% higher tire usage which accounts for around 40% of the total bus maintenance costs. Expected future oil price increases and lower battery costs (resulting in lower electric bus costs) will also help to reduce this gap and make electric buses financially competitive with conventional units.
5. LCBs have been promoted by the PRC since 2009 by the national, provincial, and city authorities through upfront purchase subsidies, which makes it cheaper to purchase LCBs than diesel or gas buses of the same size. These huge subsidies have resulted in a large uptake of hybrid and electric buses in the PRC. It has allowed for the breakthrough of the technology and has effectively eliminated the barrier toward adoption of LCBs by bus operators. Subsidies are gradually being phased out (e.g., hybrids are no longer subsidized) and the target is to fully phase out subsidies by 2021.
6. Promotion of LCBs in the PRC are driven by subsidies given to bus companies. These subsidies are related to the length of the bus, electric driving range, bus efficiency, and bus technology used (e.g., whether it is opportunity charged or fast charged). However, subsidies are not technology- and size-neutral, and smaller buses with an intermediate battery pack are favored.

G. Knowledge Management:
A knowledge product on low carbon buses will be published this year and will be shared to participants at the Transport Forum. The Chinese version will be distributed in October 2018. Knowledge gained from the TA will be shared to project teams in Gui'an and Jiangxi Ji'an through trainings to be held in August and October, respectively.

H. Location Data:

Location of bus companies included in the study.

Country/Project	City, Province	Coordinates Latitude	Longitude
PRC	Changde City, Hunan	29° 1'54.02"N	111°41'54.59"E
	Yanzhou City, Shandong	35°33'11.32"N	116°47'1.80"E
	Baoding City, Hebei	38°52'27.96"N	115°27'52.52"E
	Anji City, Zhejiang	30°38'19.23"N	119°40'49.27"E
	Guangzhou City, Guangdong	23° 7'44.80"N	113°15'51.79"E
	Taixing City, Jiangsu	32°10'23.75"N	120° 3'6.28"E
	Tengzhou City, Shandong	35° 5'15.08"N	117°9'58.64"E
	Jingmen City, Hubei	31° 2'7.43"N	112°11'57.94"E
	Linyi City, Shandong	35° 6'16.81"N	118°21'23.09"E
	Hexi District, Tianjin	39° 6'34.43"N	117°13'24.14"E
	Yan'an City, Shaanxi	36°35'7.60"N	109°29'23.13"E
	Zhaoqing, Guangdong	23° 2'50.01"N	112°27'54.30"E
	Fuzhou, Fujian	26° 4'28.23"N	119°17'47.38"E
	Hengyang, Hunan	26°53'36.13"N	112°34'19.26"E
	Lixia District, Jinan	36°39'59.07"N	117° 4'35.22"E
	Beijing	39°54'15.12"N	116°24'26.63"E
	Shanghai	31°13'49.41"N	121°28'25.33"E

For Projects that have conducted Midterm Review Mission and Project Completion Mission (from 1 July 2017 to 30 June 2018)

IV. Materialized Cofinancing

Co-financing Table

(For projects which underwent a mid-term review/evaluation or terminal evaluation in FY)

Materialized Co-financing

[Please refer to the PIF template on the GEF webpage]

Sources of Co-financing[1]	Name of Co-financer	Type of Co-financing[2]	Amount Confirmed at CEO endorsement / approval	Actual Amount Materialized at Midterm	Actual Amount Materialized at Closing
Not applicable					
		TOTAL			

Explain "Other Sources of Co-financing": _____not applicable_____

Reminder: Kindly include in your submission a copy of the following:

1. *For projects that conducted **Midterm Review Mission**: Copy of the MOU Midterm Review Mission; BTOR and Updated Tracking Tools*

2. *For projects that conducted **Project Completion Mission:** Copy of the PCR, Copy of the MOU Midterm Review Mission; and Updated Tracking Tools*

[1] Sources of Co-financing may include: Bilateral Aid Agency(ies), Foundation, GEF Agency, Local Government, National Government, Civil Society Organization, Other Multi-lateral Agency(ies), Private Sector, Other

[2] Type of Co-financing may include: Grant, Soft Loan, Hard Loan, Guarantee, In-Kind, Other

Signature:
Name of Project Officer: Susan Lim
Position: Senior Transport Specialist, EATC
Date: 8/10/2018

Endorsed by: Sujata Gupta
OIC, EATC
13 AUG 2018

Annex 1: DEFINITION OF RATINGS

Implementation Progress Ratings

Highly Satisfactory (HS): Implementation of **all** components is in substantial compliance with the original/formally revised implementation plan for the project. The project can be presented as "good practice".
Satisfactory (S): Implementation of **most** components is in substantial compliance with the original/formally revised plan except for only a few that is subject to remedial action.
Moderately Satisfactory (MS): Implementation of **some** components is in substantial compliance with the original/formally revised plan with **some** components requiring remedial action.
Moderately Unsatisfactory (MU): Implementation of **some** components is not in substantial compliance with the original/formally revised plan with **most** components requiring remedial action.
Unsatisfactory (U): Implementation of **most** components is not in substantial compliance with the original/formally revised plan.
Highly Unsatisfactory (HU): Implementation of **none** of the components is in substantial compliance with the original/formally revised plan.

Global Environment Objective/Development Objective Ratings

Highly Satisfactory (HS): Project is expected to achieve or exceed **all** its major global environmental objectives, and yield substantial global environmental benefits, without major shortcomings. The project can be presented as "good practice".
Satisfactory (S): Project is expected to achieve **most** of its major global environmental objectives, and yield satisfactory global environmental benefits, with only minor shortcomings.
Moderately Satisfactory (MS): Project is expected to achieve **most** of its major relevant objectives but with either significant shortcomings or modest overall relevance. Project is expected not to achieve **some** of its major global environmental objectives or yield some of the expected global environment benefits.
Moderately Unsatisfactory (MU): Project is expected to achieve of its major global environmental objectives with major shortcomings or is expected to achieve only **some** of its major global environmental objectives.
Unsatisfactory (U): Project is expected **not** to achieve **most** of its major global environment objectives or to yield any satisfactory global environmental benefits.
Highly Unsatisfactory (HU): The project has failed to achieve, and is not expected to achieve, **any** of its major global environment objectives with no worthwhile benefits.

Risk Rating

Risk ratings will assess the overall risk of factors internal or external to the project which may affect implementation or prospects for achieving project objectives. Risks of projects should be rated on the following scale:
High Risk (H): There is a probability of greater than 75% that assumptions may fail to hold or materialize, and/or the project may face high risks.
Substantial Risk (S): There is a probability of between 51% and 75% that assumptions may fail to hold and/or the project may face substantial risks.
Modest Risk (M): There is a probability of between 26% and 50% that assumptions may fail to hold or materialize, and/ or the project may face only modest risks.
Low Risk (L): There is a probability of up to 25% that assumptions may fail to hold or materialize, and/ or the project may face only modest risks.