



CH GEF Municipal Solid Waste Management Project (P126832)

EAST ASIA AND PACIFIC | China | Environment & Natural Resources Global Practice |
Global Environment Project | Investment Project Financing | FY 2015 | Seq No: 9 | ARCHIVED on 27-Jun-2019 | ISR35397 |

Implementing Agencies: International Economic Cooperation Office of Ministry of Ecology and Environment, People's Republic of China

Key Dates

Key Project Dates

Bank Approval Date: 14-Nov-2014

Effectiveness Date: 29-May-2015

Planned Mid Term Review Date: 27-Nov-2017

Actual Mid-Term Review Date: 02-Feb-2018

Original Closing Date: 31-Dec-2019

Revised Closing Date: 31-Dec-2019

Project Development Objectives

Project Development Objective (from Project Appraisal Document)

The project's objective is to build capacity and demonstrate best available techniques (BAT) and best environmental practices (BEP) in municipal solid waste incineration in accordance with the Stockholm Convention.

Has the Project Development Objective been changed since Board Approval of the Project Objective?

No

Components

Name

Capacity Building for Improved Operation and Regulation of MSW Incinerators:(Cost \$27.44 M)

Capacity Building for Improved MSW Management Planning:(Cost \$1.75 M)

Project Management:(Cost \$3.72 M)

Overall Ratings

Name	Previous Rating	Current Rating
Progress towards achievement of PDO	● Moderately Satisfactory	● Moderately Satisfactory
Overall Implementation Progress (IP)	● Moderately Satisfactory	● Moderately Unsatisfactory
Overall Risk Rating	● Substantial	● Substantial

Implementation Status and Key Decisions

The operational improvement investments for BAT/BEP demonstration at the Konggang Incinerator are underway and should be completed by October 2019.. The Dongjiao Incinerator's plan is now finalized and procurement is underway. The plan for the Xishan Incinerator has been finalized recently. Detailed dioxins emissions baselines at the three demonstration incinerators were provided but further review is needed to validate the baseline so that there can be accurate assessment of the operational and emissions improvements and effectiveness of planned BAT/BEP investments after they are completed . The regulatory capacity building and public engagement improvement aspects of the project have progressed well. Online monitoring, supervision and information disclosure systems in Kunming and Ningbo have worked well in general. Public



information disclosure and reach-out have been implemented as plan and public awareness on incineration have improved significantly among males and females. Due to delays in the some of the demonstration investments, the Bank and the project implementing agency plan to assess whether a closing date extension should be considered.

Risks

Systematic Operations Risk-rating Tool

Risk Category	Rating at Approval	Previous Rating	Current Rating
Political and Governance	--	● Moderate	● Moderate
Macroeconomic	--	● Low	● Low
Sector Strategies and Policies	--	● Moderate	● Moderate
Technical Design of Project or Program	--	● Moderate	● Moderate
Institutional Capacity for Implementation and Sustainability	--	● Substantial	● Substantial
Fiduciary	--	● Moderate	● Moderate
Environment and Social	--	● Substantial	● Substantial
Stakeholders	--	● Substantial	● Substantial
Other	--	--	--
Overall	--	● Substantial	● Substantial

Results

PDO Indicators by Objectives / Outcomes

Demonstrate BAT/BEP in municipal solid waste incineration in accordance with the Stockholm Conventio				
►Regular and reliable monitoring data show operating practices that lower dioxin levels to 0.1 ng TEQ/m3 at three demonstration incinerators. (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Baseline operating conditions: Xishan 72% compliance with Stockholm Convention BAT/BEP; Dongjiao 69%; Konggang 70%. Baseline dioxins emissions (ng TEQ/M3): Xishan-0.059; Dongjiao-0.46; Konggang-0.093	--	Baseline operating conditions: Xishan 72% compliance with Stockholm Convention BAT/BEP; Dongjiao 69%; Konggang 70%. Baseline dioxins emissions (ng TEQ/M3): Xishan-0.059; Dongjiao-0.46; Konggang-0.093	Operational practice targets: Xishan 90% compliance with Stockholm Convention BAT/BEP; Dongjiao 89%; Konggang 94%. Dioxins emission: at least meets 0.1 ng TEQ/M3.
Date	03-Dec-2018	01-Nov-2018	01-Jun-2019	31-Dec-2019
Comments:	Baseline operating conditions obtained in Jan 2018 and has been reported in previous ISR.			



Baseline dioxins monitoring completed in late 2018. Konggang is very close to the emission standard (0.1 ng TEQ / M3); Xishan met the standards but only 1 of 3 lines were sampled; Dongjiao exceeded the standard and has operation has been shut down for improvement. Additional monitoring and verification underway.				
▲A planned schedule of improvements in operating procedures established after measuring and evaluating the baseline situation at three demonstration incinerators. (Yes/No, Custom Supplement)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	No	Yes	Yes
▲Achievement of milestones set for the improvement of operating procedures as identified in the schedule of improvements in operating procedures at three demonstration incinerators (Text, Custom Supplement)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Operational Baselines: Xishan 72% compliance with Stockholm Convention BAT/BEP; Dongjiao 69%; Konggang 70%.	--	Konggang's operational improvement plan is being implemented; Dongjiao's is being contracted; Xishan's has been finalized and agreed.	Operational practice targets: Xishan 90% compliance with Stockholm Convention BAT/BEP; Dongjiao 89%; Konggang 94%.

Overall Comments

The baseline and target consist of operating conditions and dioxins emission levels. Baseline of the former comes from Operating and Environmental Performance Audits; the latter comes from independent dioxins monitoring. Final target of operating conditions comes from BAT/BEP investment plan of each incinerator while the dioxins emission should at least comply with national standard and strive for elimination of dioxins generation and emission according to Stockholm Convention objective.

The annual targets may need to be modified given that once operational improvement is done the final target would be met fully.

Intermediate Results Indicators by Components

Capacity Building for Improved Operation and Regulation of MSW Incinerators				
▶KEPB and KUMB have continuous access to data on operating conditions and emissions from all five Kunming incinerators (Yes/No, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	Yes	Yes	Yes
Date	05-Jan-2015	01-Nov-2018	01-Jun-2019	31-Dec-2019
Comments:	This indicator is to be achieved through development, installation and upgrade of monitoring systems for KUMB, YEPD and KEPB and installation of online monitoring sensors at incinerators. The systems have been completed and operational since mid-2017. The regulators have access to the operational and emission data of the 5 incinerators in Kunming. The five incinerators refer to the original four incinerators that were appraised for the project investments by the project for BAT/BEP investments and another one in Kunming (Chenggong) that will only receive supervision by environmental and urban management authorities. Wuhua incinerator will be closed in mid-			



2019 as agreed by Kunming municipal government and the incinerator. It will be under supervision of the system until its closure.				
►NEPB has continuous access to data on operating conditions and emissions from all three incinerators in Ningbo. (Yes/No, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	Yes	Yes	Yes
Date	05-Jan-2015	28-Sep-2018	01-Jun-2019	31-Dec-2019
Comments:	<p>This indicator is to be achieved through retrofit of CEMS in Ningbo incinerators and enhancement of Ningbo EPB information systems. Pertinent contracts have been completed and the systems are operational. The Ningbo regulators have access to the operational and emission data of all three incinerators in Ningbo.</p> <p>Among the three incinerators in Ningbo, a new one was put into operation later 2018 and had been included in the system.</p> <p>Note: At project appraisal, there were 3 incinerators in Ningbo. One was closed around 3 years ago. A substitute one was built and put into operation in 2017.</p>			
►Data on operating conditions and emissions disclosed to public in Kunming (Yes/No, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	Yes	Yes	Yes
Date	01-Jan-2015	28-Sep-2018	01-Jun-2019	31-Dec-2019
Comments:	<p>This indicator is primarily to be achieved based upon the completion and operation of online monitoring and information management systems developed in Kunming. The systems have been completed and operational. Online disclosure websites were operational in early August 2017, and data disclosed to the public.</p> <p>Note on below three supplemental indicators,</p> <p>#1 and #3 -- the FIVE incinerators include four incinerator (Konggang, Xishan, Dongjiao and Wuhua) that were appraised at the project preparation and one incinerator (Chenggong) that was under construction during the project preparation; it will only be covered by the monitoring and information system financed by the project.</p> <p>#2 -- the FOUR incinerators refer to the incinerators (Konggang, Xishan, Dongjiao and Wuhua) that were appraised at the project preparation</p>			
▲Operating conditions of five incinerators posted on the web (Yes/No, Custom Supplement)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	Yes	Yes	Yes
▲Information on environmental impacts of four incinerators posted on community bulletin boards (Yes/No, Custom Supplement)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	Yes	Yes	Yes
▲Dioxin emission test results for five incinerators in Kunming posted on the web (Yes/No, Custom Supplement)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	Yes	Yes	Yes
►Operating conditions of three Ningbo incinerators posted on the web (Yes/No, Custom)				



	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	Yes	Yes	Yes
Date	01-Jan-2015	28-Sep-2018	01-Jun-2019	31-Dec-2019
Comments:	<p>This indicator is to be achieved through retrofit of CEMS in Ningbo incinerators and enhancement of Ningbo EPB information systems. The online disclosure website has been operational in early August 2017, and data disclosed to the public.</p> <p>Among the three incinerators in Ningbo, a new one was put into operation later 2018 and had been included in the system.</p>			
►Public awareness of incinerator information disclosed (Percentage, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	13.70	20.80	54.70	50.00
Date	31-May-2013	01-Nov-2018	01-Jun-2019	31-Dec-2019
Comments:	<p>The baseline was obtained during project preparation through social assessment in Kunming, meaning at that time people had certain level of access to incinerator information, e.g. through EIA and other means. This indicator milestones are to be measured on a yearly basis through consultancy work carried out by public participation and communication consultant and external social impact monitoring consultants. Last monitoring was carried out in November 2018. The monitored results have achieved end targets fully. The public participation and communication supported by the project will continue throughout the project implementation.</p>			
▲Awareness of females of incinerator information disclosed (Percentage, Custom Breakdown)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	9.30	21.40	51.39	50.00
Date	31-May-2013	01-Nov-2018	01-Jun-2019	31-Dec-2019
▲Awareness of males of incinerator information disclosed (Percentage, Custom Breakdown)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	18.80	21.80	57.43	50.00
Date	31-May-2013	01-Nov-2018	01-Jun-2019	31-Dec-2019
►Kunming district EPBs inspect each of five incinerators once per year on the basis of integrated permit (Yes/No, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	No	Yes	Yes
Date	05-Jan-2015	28-Sep-2018	01-Jun-2019	31-Dec-2019
Comments:	<p>The indicator is to be achieved based on integrated permit development activity (below supplemental indicator) which is under implementation. An integrated permit is a facility-specific operating license setting out a range of operating and performance requirements (feedstock management, combustion performance, emission limits, monitoring, staff training, disclosure, etc.) needed to reduce the facility's environmental impact and follow Stockholm Convention best practices guidelines.</p> <p>The permit has been put implementation. First inspection has been conducted in May 2019.</p>			
▲Integrated permit finalized for each incinerator (Yes/No, Custom Supplement)				



	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	Yes	Yes	Yes
►Number of regulators trained through study tours to northern America and Europe (Number, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	6.00	12.00	36.00
Date	01-Jan-2015	28-Sep-2018	01-Jun-2019	31-Dec-2019
Comments:	The Yunnan delegation, comprised of 6 members carried out a study tour to the Netherlands and Switzerland in September 2017. The Ningbo 6-member delegation conducted a study tour to the US in Jan 2019.			
►Number of incinerators nationwide with at least five supervisors and operators trained in BAT/BEP (Number, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	40.00
Date	01-Jan-2015	28-Sep-2018	01-Feb-2019	31-Dec-2019
Comments:	This indicator is to be achieved through recruiting institutions to provide training to trainers and incinerators. Contracts have been signed. Training is expected to start soon.			
►Dioxin emissions from demonstration incinerators (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Baseline to be determined at end of first year audits	--	Xishan: 0.059 ng TEQ/m3 Dongjiao: 0.46 ng TEQ/m3 Konggang: 0.09 ng TEQ/m3	0.1 ng TEQ/m3
Date	01-Dec-2018	28-Sep-2018	01-Jun-2019	31-Dec-2019
Comments:	Independent dioxins baseline monitoring supported by the Project completed in 2008 and report submitted in Feb 2019. Dongjiao doesn't meet the standards and operation has been stopped. Xishan though meeting the standard but sampling is considered inadequate. Additional monitoring would be needed.			
►Ningbo Lab standard operating procedure assessed as consistent with international good practices (Text, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	--	Yes	Yes
Date	01-Jan-2015	28-Sep-2018	01-Feb-2019	31-Dec-2019
Comments:	The SOP has been developed and accepted.			
►Number of standards revised/developed (Number, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	3.00	3.00	3.00
Date	01-Jan-2015	28-Sep-2018	01-Feb-2019	31-Dec-2019



Comments:

In total 4 standards were included in the project. Three have been completed.

Data on Financial Performance

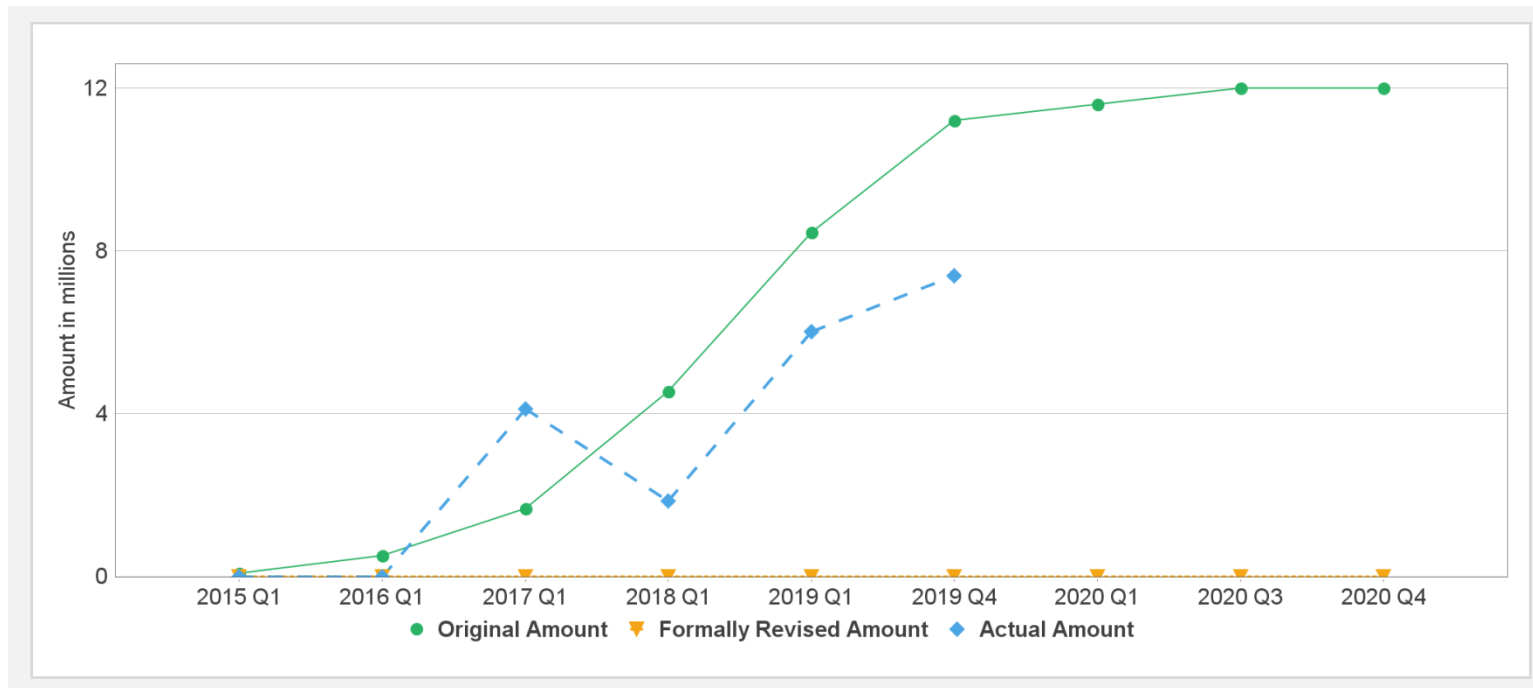
Disbursements (by loan)

Project	Loan/Credit/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	% Disbursed
P126832	TF-18479	Effective	USD	12.00	12.00	0.00	7.38	4.62	62%

Key Dates (by loan)

Project	Loan/Credit/TF	Status	Approval Date	Signing Date	Effectiveness Date	Orig. Closing Date	Rev. Closing Date
P126832	TF-18479	Effective	14-Nov-2014	30-Dec-2014	29-May-2015	31-Dec-2019	31-Dec-2019

Cumulative Disbursements



Restructuring History

There has been no restructuring to date.



Related Project(s)

There are no related projects.
