المجلس العالمي للبصمة الكربونية
GLOBAL CARBON COUNCIL

Project Submission Form

V3.2 - 2020

Contents

COVER PAGE- Project Submission Form (PSF)	
Complete this form in accordance with the instructions attached at the end of this form.	
BASIC INFORMATION	
Title of the Project Activity	Bengbu Municipal Solid Waste Incineration Power Plant Project
PSF version number	1.0
Date of completion of this form	24/06/2022
Project Owner(s) (Shall be consistent with De-registered CDM Type B Projects)	Hangzhou Chaoteng Energy Technology Co., Ltd.
Country where the Project Activity is located	The People's Republic of China
GPS coordinates of the project site(s)	32° 54' 2.37" - 32° 53' 55.66" North Latitude 117° 28' 6.77" - 117° 28' 22.34" East Longitude
Eligible GCC Project Type as per the Project Standard (Tick applicable project type)	☐ **Type A:** ☐ Type A1 ☒ Type A2 ☐ **Type B – De-registered CDM Projects:**[1] ☐ Type B1 ☐ Type B2
Minimum compliance requirements	☒ Real and Measurable GHG Reductions ☒ National Sustainable Development Criteria (if any) ☒ Apply credible baseline and monitoring methodologies ☒ Additionality ☒ Local Stakeholder Consultation Process ☒ Global Stakeholder Consultation Process

[1] Owners of Type B projects shall fill in the form provided in Appendix 7.

<table>
<tr><td></td><td>☒ No GHG Double Counting
☒ Contributes to United Nations Sustainable Development Goal 13 (Climate Action)</td></tr>
<tr><td>Choose optional and additional requirements
(Tick applicable label categories)</td><td>☒ Do-no-net-harm Safeguards to address Environmental Impacts
☒ Do-no-net-harm Safeguards to address Social Impacts
☒ Contributes to United Nations Sustainable Development Goals (in addition to Goal 13)</td></tr>
<tr><td>Applied methodologies
(Shall be approved by the GCC or the CDM)</td><td>ACM0022: “Alternative waste treatment processes”(Version 3.0).</td></tr>
<tr><td>GHG Sectoral scope(s) linked to the applied methodology(ies)</td><td>GHG-SS #13: Waste handling and disposal</td></tr>
<tr><td>Applicable Rules and Requirements for Project Owners
(Tick applicable Rules and Requirements)</td><td>
<table>
<tr><th colspan="2">Rules and Requirements</th><th>Reference</th><th>Version</th></tr>
<tr><td colspan="2">☒ ISO 14064-2</td><td></td><td></td></tr>
<tr><td colspan="2">☒ Applicable host country legal requirements /rules</td><td></td><td></td></tr>
<tr><td rowspan="5">☒ GCC Rules and Requirements[2]</td><td>☒ Project Standard</td><td></td><td>V3.1</td></tr>
<tr><td>☐ Approved GCC Methodology</td><td></td><td></td></tr>
<tr><td>☒ Program Definitions</td><td></td><td>V3.1</td></tr>
<tr><td>☒ Environment and Social Safeguards Standard</td><td></td><td>V2.0</td></tr>
<tr><td>☒ Project Sustainability Standard</td><td></td><td>V2.1</td></tr>
<tr><td rowspan="3">☒ CDM Rules[3]</td><td>☒ Instructions in Project Submission Form (PSF)-template</td><td></td><td>V3.2</td></tr>
<tr><td>☒ Approved CDM Methodology (XXXXX)</td><td>ACM0022</td><td>V3.0</td></tr>
<tr><td>☒ Combined tool to</td><td>TOOL 02</td><td>V07.0</td></tr>
</table>
</td></tr>
</table>

[2] GCC Program rules and requirements: https://www.globalcarboncouncil.com/resource-centre.html
[3] CDM Program rules: https://cdm.unfccc.int/Reference/index.html

		identify the baseline scenario and demonstrate additionality		
		☒ Tool to calculate project or leakage CO2 emissions from fossil fuel combustion	TOOL 03	V03.0
		☒ Emissions from solid waste disposal sites	TOOL 04	V08.0
		☒ Project emissions from flaring	TOOL 06	V04.0
		☒ Tool to calculate the emission factor for an electricity system	TOOL 07	V07.0
		☒ Tool to determine the mass flow of a greenhouse gas in a gaseous stream	TOOL 08	V03.0
		☒ Common practice	TOOL 24	V03.1
		☒ Investment analysis	TOOL 27	V11.0
Choose Third Party External Project Verification by approved GCC Verifiers[4] (Tick applicable verification categories)	☒ GHG emission reductions (i.e., Approved Carbon Credits **(ACCs)**) ☒ Environmental No-net-harm Label (**E+**) ☒ Social No-net-harm Label (**S+**) ☒ United Nations Sustainable Development Goals (**SDG+**) ☐ Bronze SDG Label ☐ Silver SDG Label ☒ Gold SDG Label ☐ Platinum SDG Label ☐ Diamond SDG Label ☒ CORSIA requirements (**C+**) ☐ Host Country Attestation on Double counting			

[4] **Note:** GCC Verifiers under the Individual Track are not eligible to conduct verifications for GCC Project Activities whose owners intend to supply carbon credits (ACCs) for use within CORSIA.

Declaration to be made by the Project Owner(s)[5] (Tick all applicable statements)	The Project Owner(s) declares that: ☒ The Project Activity complies with the eligibility of the applicable project type (A1, A2, B1 or B2) as stipulated by the Project Standard. ☒ The Project Activity shall start operations, and start generating emission reductions, on or after 1 January 2016. ☒ The Project Activity is eligible to be registered under the GCC program. ☒ No carbon credits generated by the proposed Project Activity will be claimed as carbon credits in any other GHG program anywhere in the world, either for compliance or voluntary purposes, for the entire 10-year GCC crediting period. ☒ The proposed Project Activity, if Type A, is NOT registered as a GHG Project Activity in any other GHG program or any other voluntary program anywhere in the world. ☒ The proposed Project Activity is NOT included as a component Project Activity (CPA) in a registered GHG Programme of Activities (PoA) under any GHG program (such as the CDM or any other voluntary program) anywhere in the world. ☒ The proposed Project Activity is NOT a CPA that has been excluded from a registered PoA under any GHG program (such as the CDM or any other voluntary program) anywhere in the world. Provide details (if any) below for the boxes ticked above.
	☒ If a GCC project chooses to apply to use ACCs under CORSIA, the Project Owner(s) is required to declare that they are aware that they must obtain and provide to the GCC and its Registry (operated by IHS Markit) a written attestation from the host country's national focal point (e.g., Ministry of Environment or Civil Aviation Authority) or focal point's designee, as required by CORSIA Emissions Unit Eligibility Criteria, which: ☒ Confirms the avoidance of double counting as required by CORSIA; ☒ Shall be made publicly available prior to the use of units from the host country under CORSIA; and ☒ Places all responsibility on the Project Owner(s) to replace any and all doubly claimed or counted ACCs by the host country, in the GCC registry operated by IHS Markit. Provide details below for the boxes ticked above

[5] The "Project Owner" means the legal entity or organization that has overall control and responsibility for the Project Activity.

	The Project Owner(s) declares that: ☒ All of the information provided in this document, including any supporting documents submitted to the GCC or its registry operator IHS Markit at any time, is true and correct; ☒ They understand that a failure by them to provide accurate information or data, or concealing facts and information, can be considered as negligence, fraud or willful misconduct. Therefore, they are aware that they are fully responsible for any liability that arises as a result of such actions. Provide details below for the boxes ticked above
Appendixes 1-7	Details about the Project Activity are provided in Appendixes 1 through 7 to this document.
Name, designation, date and signature of the Project Owner(s)	On behalf of **Hangzhou Chaoteng Energy Technology Co., Ltd.** Mrs. Minna Wang, Chairman  24/06/2022

1. PROJECT SUBMISSION FORM

Section A. Description of the Project Activity

A.1. Purpose and general description of the Project Activity

Bengbu Municipal Solid Waste Incineration Power Plant Project (hereafter referred to as the project) is located at Area B of Bengbu Municipal Solid Waste Sanitary Landfill, Longzihu District, Bengbu City, Anhui Province, China. The project is invested, constructed and operated by Bengbu Dynagreen Renewable Energy Co.

Before the implementation of the project, the local MSW the project disposed was collected and buried in Bengbu MSW Disposal Site, the landfill gas is partially collected and flared according to the national standard requirements. The waste treatment process does not provide any available energy. The emergence of the project has changed this situation and provided electric energy to the local power grid. In order to promote the harmless process of waste treatment to meet the growing needs of MSW treatment in Bengbu, a MSW incineration power plant project is built at the project site.

According to the project feasibility study report, the project site covers an area of 67,390 square meters, project design includes two incinerators with a daily waste treatment capacity of 605 tons, a 25MW steam turbine generator set, and related auxiliary facilities. The daily processing capacity of the project is 1,210 tons, and the annual processing capacity is about 441,650 tons. The project boundary of this project includes the site where the waste is disposed of, on-site electricity generation and use, on-site fuel use and those plants connected to the energy system.

After the project being put into operation, the waste heat from the incineration of MSW will be used to generate electricity, and the power will be integrated into the local power grid. The operation period of the project is preset to be 30 years. Based on the annual operation of 8,000h, the annual average power generation of the steam turbine generator set under rated conditions is about 1.77×10^8kWh, and the annual average on-grid power is about 1.44×10^8kWh.

It is estimated that in the first crediting period of the project (from 10/11/2017 to 09/11/2027), the annual average GHG emission reduction is 153721.42 tCO_2e, and the total GHG emission reduction for the first 10-year crediting period is 1537214.205 tCO_2e.

The project is expected to contribute to four SDGs:

SDG 7 Affordable and Clean Energy: The project increases the total amount of electricity generated from renewable energy sources by using waste heat from MSW incineration, increasing the share of renewable energy generation in the overall grid. The contribution can be proved through the

project's feed-in tariff statistics, the statistics of electricity received by the grid and the annual electricity report issued by the local grid.

SDG 8 Decent Work and Economic Growth: The project provides 68 working positions and relives the pressure of power demand, so that local economic conditions may be boosted. The contribution can be highlighted through payrolls and employment records.

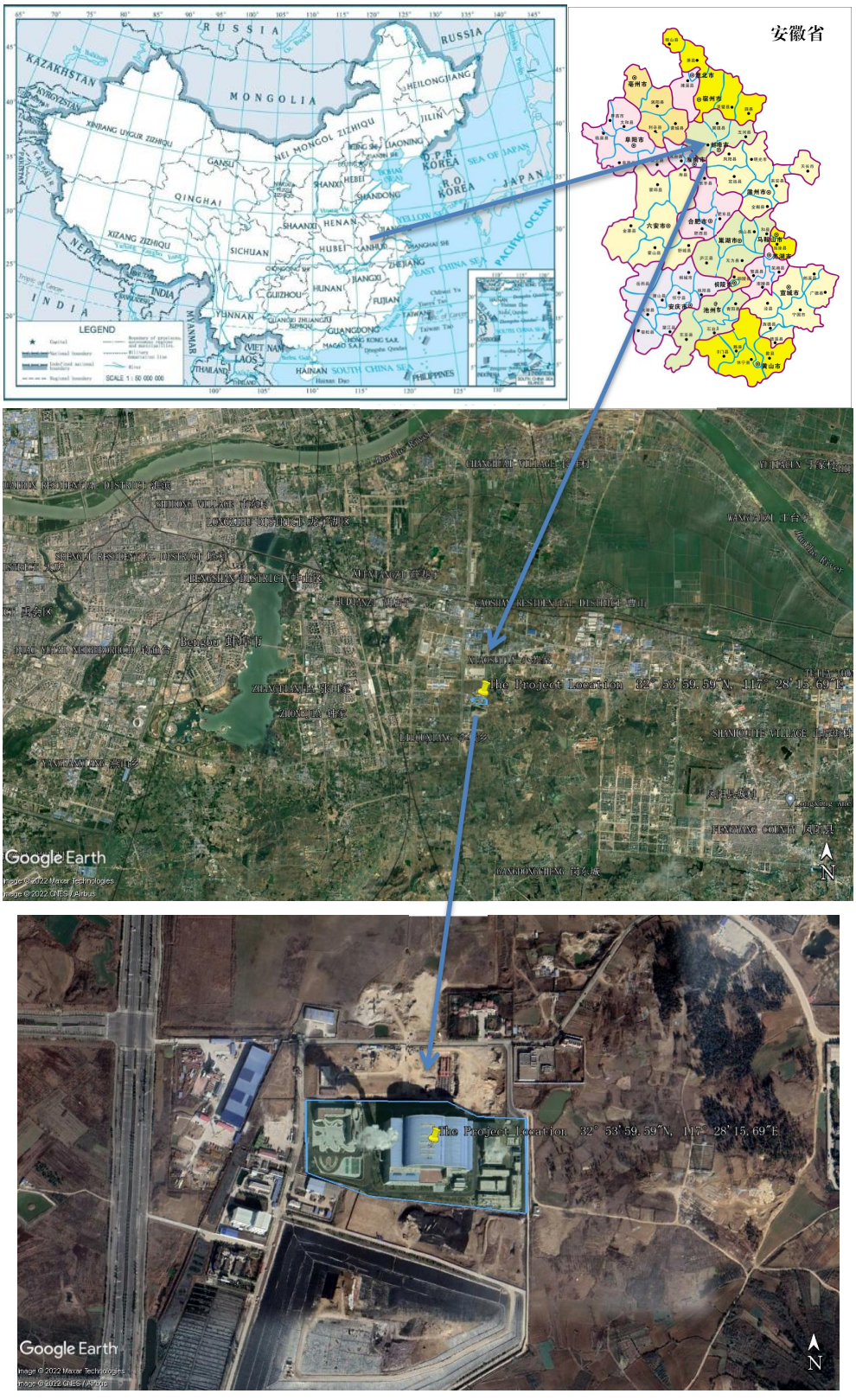
SDG 9 Industry, Innovation and Infrastructure: The project reduces greenhouse gas emissions while treating the same amount of waste as the baseline scenario and produces electricity for the grid, increasing the sustainability of the waste treatment process and adopting a more environmentally friendly technological approach. The contribution can be proved through the project's annual electricity generation and emissions reduction data.

SDG 13 Climate Action: The project generates 153721.42 tCO2e of emission reductions per year through MSW incineration, which makes contribution to the climate. The amount of reductions can be proved by project monitoring report.

A.2. Location of the Project Activity

The project is located in the northeast of Lilou Village, Longzihu District, Bengbu City, Anhui Province, China.

Address and geodetic coordinates of the physical site of the Project Activity		
Physical address	**Latitude**	**Longitude**
Area B of Bengbu Municipal Solid Waste Sanitary Landfill, Longzihu District, Bengbu City, Anhui Province, China	32° 54' 2.37" - 32° 53' 55.66" North Latitude	117° 28' 6.77" - 117° 28' 22.34" East Longitude


RUSSIA
MONGOLIA
KAZAKHSTAN
CHINA
INDIA
LEGEND
安徽省
The Project Location 32° 53' 59.59"N, 117° 28' 15.69"E
Google Earth
N

A.3. Technologies/measures

The MSW treatment capacity of the Project is 1210t/d, 441,650t/a. The incineration system of the project is composed of two sets of mechanical grate furnace with individual capacity of 605 t/d, The high-temperature flue gas from the waste combustion is drawn by the induced draft fan into the integrated waste heat boiler which is used in conjunction with the incinerator for heat exchange. A 25MW turbine generator sets is matched with the incineration system, generating power by utilizing the waste heat from MSW incineration.

Under the rated capacity of 2×605t/d and a waste calorific value of 7200kJ/kg, two waste heat boilers produce superheated steam at a pressure of 4.0MPa (g) and a temperature of 450°C for power generation, with a rated steam evaporation capacity of 52.5t/h. Based on an annual operation of 8000h, the average annual power generation capacity of the turbine generator set under rated working conditions is about 1.77×10^8kWh, and the average annual feed-in power is about 1.44×10^8kWh. The power generated is exported to the East China Power Grid (ECPG), covering the provinces and cities of Shanghai, Jiangsu, Zhejiang, Anhui and Fujian.

The MSW incineration activities of project produce by-products. Therefore, the project adopts appropriate and reliable technologies, to avoid the project's harm to the environment or the emission of greenhouse gases. For incineration flue gas, the project designed a flue gas purification system, using technologies including denitrification in SNCR furnace, deacidification of lime slurry and slaked lime powder, activated carbon adsorption and bag filter. Besides, for the landfill leachate, the project has designed treatment measures including UASB anaerobic reactor, membrane bioreactor (MBR), nanofiltration, reverse osmosis and other technologies. The biogas generated during the treatment process is discharged back to the incinerator.

The Figure below shows the key technical indicators of major equipment adopted by the Project:

Table A1. The technical indicators of major equipment adopted by the Project

Items	Parameters	Unit
Incinerator		
Quantity	2	Set
Type	Mitsubishi-Martin type mechanical grate furnace	
Treatment capacity	650	Ton/day
Residence time of flue gas in the furnace at the min. temperature ≥850℃	2	Second
Range for Low Heat Value of MSW	5000- 8810	KJ/kg
Annual operation time	8000	Hour
Waste heat boiler		
Model	SLC605-4.0/450	
Quantity	2	Set

Boiler Maximum Continuous Rating	52.5	t/h
Pressure of the superheated steam	4.0	MPa(g)
Temperature of the superheated steam	450	℃
Steam turbines		
Model	N25-3.82	
Type	Pure condensing turbine generator sets	
Power rating	25	MW
Quantity	1	
Generators		
Model	QFJ-25-2-10.5	
Power rating	25	MW
Rated voltage	10.5	kV

A.4. Project Owner(s)

Location/ Country	Project Owner(s)	Where applicable[6], indicate if the host country has provided approval (Yes/No)
China	Hangzhou Chaoteng Energy Technology Co., Ltd.	N/A

A.5. Declaration of intended use of Approved Carbon Credits (ACCs) generated by the Project Activity

The Project Activity is expected to generate ACCs for a full 10-year crediting period and supply the credits to offset the following GHG emissions:

Period		Name of the Entities	Purpose and Quantity of ACCs to be supplied
From	To		
10/11/2017	9/11/2027	To be determined.	To be determeind.

A.6. Additional requirements for CORSIA

[6] For example, *Project Coordination Form* is to be filled-in by Project Owners for projects located in Qatar. A written attestation from the host country's national focal point or the focal point's designee, as required by CORSIA (Refer section A.5 of the PSF guidelines).

Please see Section E and F.

Neither the project activities nor the emission reductions it generates lead to double counting.

Section B. Application of selected methodology(ies)

B.1. Reference to methodology(ies)

The following methodology is applied specific to the project: Approved CDM methodology ACM0022: "Alternative waste treatment processes"(Version 3.0)[7].

The methodology also refers to the latest approved version of the following CDM tools:

- "TOOL02: Combined tool to identify the baseline scenario and demonstrate additionality" (Version 07.0)[8];
- "TOOL03: Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" (Version 03.0)[9];
- "TOOL04: Emissions from solid waste disposal sites" (Version 08.0)[10];
- "TOOL06: Project emissions from flaring" (Version 04.0)[11];
- "TOOL07: Tool to calculate the emission factor for an electricity system" (Version 07.0)[12];
- "TOOL08: Tool to determine the mass flow of a greenhouse gas in a gaseous stream" (Version 03.0)[13];
- "TOOL24: Common practice" (Version 03.1)[14];
- "TOOL27: Investment analysis" (Version 11.0)[15].

B.2. Applicability of methodology(ies)

The project satisfies all applicable conditions of the methodology ACM0022 subject to the following conditions, as analysed in the table below.

[7] https://cdm.unfccc.int/methodologies/DB/AUR5PLW743TS0OOCWRS55XXT86WV4J
[8] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-02-v7.0.pdf
[9] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v3.pdf
[10] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-04-v8.0.pdf
[11] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-06-v4.0.pdf
[12] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf
[13] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-08-v3.0.pdf
[14] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-24-v1.pdf
[15] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v11.0.pdf

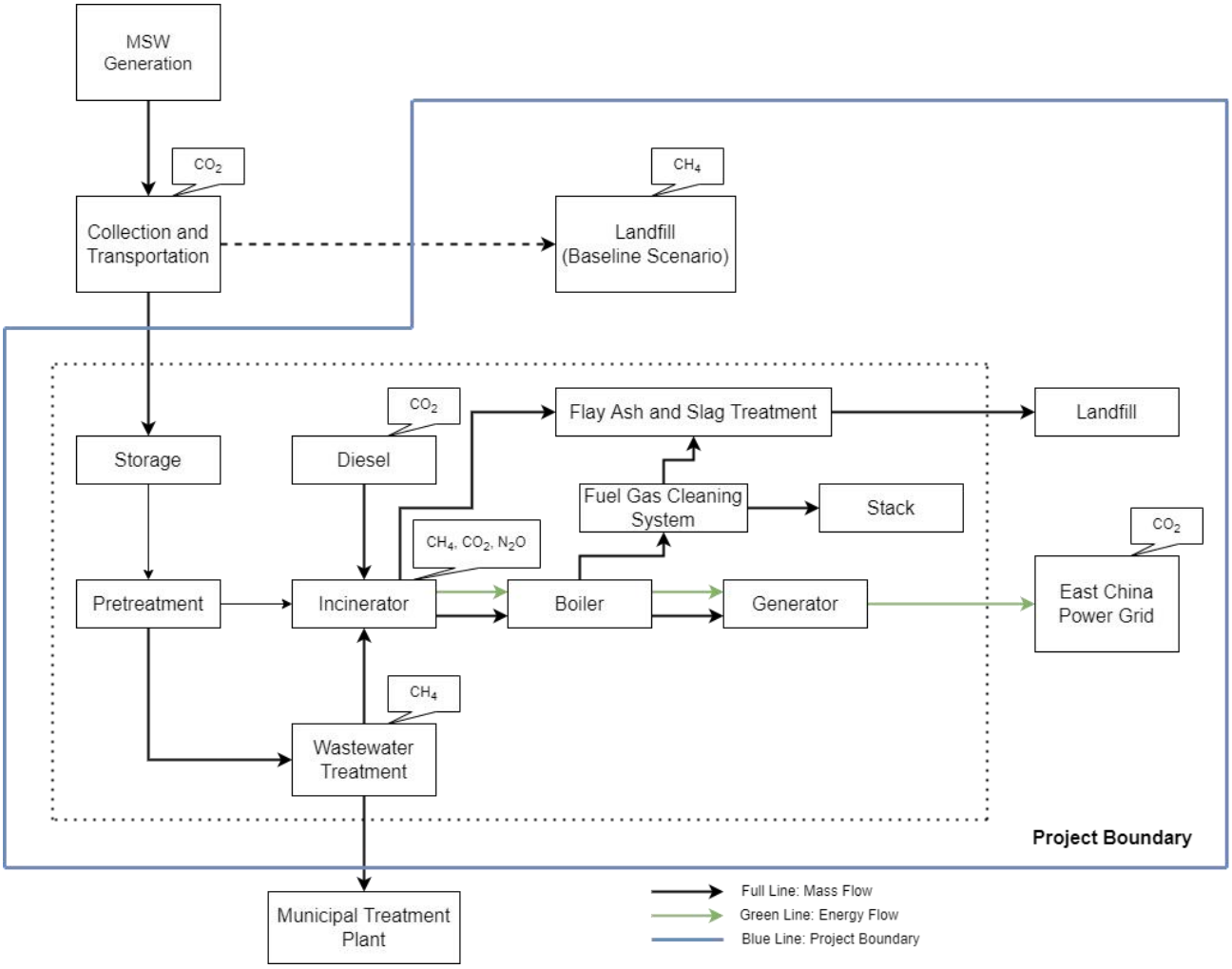
Applicable conditions of the methodology ACM0022	Applicability of this project
The methodology applies to project activities that install and operate new plants for the treatment of fresh waste through any combination of the following processes: Option (g) Incineration of fresh waste for the generation of thermal/electric energy	The project activity is is a newly built MSW incineration power plant located in in the northeast of Lilou Village, Longzihu District, Bengbu City, Anhui Province, China, to incinerate MSW for electricity energy generation, all the energy produced will be exported to East China Power Grid, so that the project is applicable to the conditions.
The following conditions apply to all project activities using this methodology: (i) The project plant only treats fresh waste/wastewater for which emission reductions are claimed, except for cases involving composting, co-composting and anaerobic digestion;	The project only treats fresh MSW and the waste treatment method is incineration.
(j) Neither the fresh waste nor the products from the project plant are stored on-site under anaerobic conditions;	The project meets the requirement. As the project is of incineration of MSW, the waste and the products neither stored under anaerobic conditions.
(k) Any wastewater discharge resulting from the project activity is treated in accordance with applicable regulations;	The project meets the requirement. The production wastewater generated during the project activities is treated in the plant and then reused. A small amount of other wastewater is discharged to the Yangtaizi Wastewater Treatment Plant in Bengbu for treatment, the reused wastewater does not result in discharge and wastewater discharged to a sewage treatment plant is discharged after treatment to meet regulatory requirements.
(l) The project activity does not reduce the amount of waste that would be recycled in the absence of the project activity.	The project meets the requirement since there is no recycled waste under baseline scenario.

(m) When applicable regulations mandate any waste treatment process implemented under the project activity, the rate of compliance with such regulations for the treatment process is below 50 per cent;	There is no mandatory or legal requirement to implement the specified waste treatment process, so there is no rate of compliance.
(n) Hazardous wastes/wastewater are not eligible under this methodology	As the project is of incineration of MSW, there is no hazardous wastes and wastewater involved.
The methodology is only applicable if the baseline scenario is: (c) In the case of electricity generation, the electricity is generated in an existing/new captive fossil fuel fired power-only plant, captive cogeneration plant and/or the grid (P2, P4 or P6);	In the original electricity generation of the baseline scenario, the power is provided by the sub-grid of the State Grid where the project located. The project is located in Anhui, therefore the sub-grid of the State Grid is the East China Power Grid.
Specific applicability conditions for the different waste treatment processes: Waste treatment option under the project activity: Incineration . Applicable types of wastes that may be treated: Fresh waste. Applicable products and their use: Electricity and/or heat. Applicable waste by-products: Incineration byproduct (e.g. inert materials); Wastewater discharge; Non-biodegradable materials that may have market value (i.e. glass, metals and plastics). Specific applicability conditions: Incineration technology is rotary kiln, rotating fluidized bed, circulating fluidized bed, hearth or grate type;	The project complies with the provisions of the methodology. As an incineration project, the project treats fresh MSW, provides electricity as product. According to the feasibility study report of the project, the incineration technology used in the project is mechanical grate incinerator, and the energy generated by auxiliary fossil fuels does not exceed 50% of the total combustion energy of the incinerator. According to the environmental impact assessment report of the project, the main by-products produced by the project activities are incineration products (including flue gases, dusty waste gases, malodorous gases, slag and fly ash), recycled wastewater, incinerator slag, fly ash, sludge and materials with market value, such as non biodegradable metal and glass.

The fraction of energy generated by auxiliary fossil fuels is not more than 50% of the total energy generated in the incinerator.	

B.3. Project boundary, sources and greenhouse gases (GHGs)

According to methodology ACM0022 (Version 3.0), the project boundary of this project is the sites where the waste is disposed of in the baseline, includes on-site electricity generation and use, on-site fuel use and the wastewater treatment plant used. Plants connected to the energy system are also included.



The overview of the GHG emission sources included or excluded from the project boundary for determination of baseline and project emissions is determined and provided in the table below.

Source		GHG	Included?	Justification/Explanation
Baseline	Emissions from heat generation	CO_2	Excluded	The heat generation is not included in the project activity.
		CH_4	Excluded	The heat generation is not included in the project activity.
		N_2O	Excluded	The heat generation is not included in the project activity.
	Emissions at the SWDS	CO_2	Excluded	CO_2 emissions from the decomposition of fresh waste are not accounted for[a].
		CH_4	Included	The major source of emissions in the baseline.
		N_2O	Excluded	N_2O emissions are small compared to CH_4 emissions from landfills. Exclusion of this gas is conservative.
	Emissions from anaerobic lagoons or sludge pits	CO_2	Excluded	Anaerobic lagoons or sludge pits are not included in the project activity.
		CH_4	Excluded	Anaerobic lagoons or sludge pits are not included in the project activity.
		N_2O	Excluded	Anaerobic lagoons or sludge pits are not included in the project activity.
	Emissions from electricity generation	CO_2	Included	Major source. The project includes electricity generation, the electricity generated is sent to the grid, to displace fossil fuel fired electricity generation in the baseline.

		CH_4	Excluded	Excluded for simplification. Exclusion of this gas is conservative.
		N_2O	Excluded	Excluded for simplification. Exclusion of this gas is conservative.
	Emissions from use of natural gas	CO_2	Excluded	The use of natural gas is not included in the project activity.
		CH_4	Excluded	The use of natural gas is not included in the project activity.
		N_2O	Excluded	The use of natural gas is not included in the project activity.
Project Activity	Emissions from on-site fossil fuel consumption due to the project activity other than for electricity generation	CO_2	Included	May be an important emission source. Includes carbon dioxide emissions from ignition and auxiliary fuels that need to be added to the incinerator. It does not include transport.
		CH_4	Excluded	Excluded for simplification. This emission source is assumed to be very small.
		N_2O	Excluded	Excluded for simplification. This emission source is assumed to be very small.
	Emissions from on-site electricity use	CO_2	Included	May be an important emission source. If the project activities cannot generate electricity for a period of time due to special reasons (such as shutdown, maintenance, etc.) and cannot satisfy the project's own needs (such as office working, lighting, etc.), it needs to obtain electricity from the grid.
		CH_4	Excluded	Excluded for simplification. This emission source is assumed to be very small.

		N_2O	Excluded	Excluded for simplification. This emission source is assumed to be very small.
	Emissions from the waste treatment process	CO_2	Included	CO_2 emissions from incineration of fossil-based waste shall be included. CO_2 emissions from the decomposition or combustion of organic waste are not accounted[a].
		CH_4	Included	Incomplete combustion of waste may cause methane to be emitted, and methane may also be produced when waste is stored before incineration.
		N_2O	Included	N_2O may be emitted from incineration.
	Emissions from wastewater treatment	CO_2	Excluded	CO_2 emissions from the decomposition of fresh waste are not accounted[a].
		CH_4	Included	Methane is produced during the anaerobic treatment of domestic waste leachate, so CH_4 pollution is included. However, all the methane produced is discharged to the incinerator for combustion.
		N_2O	Excluded	Excluded for simplification. This emission source is assumed to be very small.

(a) CO2 emissions from the combustion or decomposition of biomass (see definition by the Board in annex 8 of the Board's 20th meeting report) are not accounted as GHG emissions. Where the combustion or decomposition of biomass under a CDM project activity results in a decrease of carbon pools, such stock changes should be considered in the calculation of emission reductions. This is not the case for waste treatment projects.

B.4. Establishment and description of the baseline scenario

According to the approved methodology ACM0022 (Version 3.0) , the methodology document and the “Combined tool to identify the baseline scenario and demonstrate additionality” (Version 07.0) are applied to identify the baseline scenario of the project.

Step 1: Identification of alternative scenarios

Step 1a: Define alternative scenarios to the proposed CDM project activity

According to approved methodology ACM0022 (Version 3.0), alternatives for the treatment of the fresh waste and electricity generation should be considered. Since the project is not involved with treatment of wastewater or heat generation, these alternatives are not taken into account. The following table introduces alternatives for this project, these alternatives, either individually or in combination, need to be considered.

Serial number	Alternative scenarios	Applicable or not
M	For the treatment of the fresh waste	
M1	The project activity without being registered as a CDM project activity (MSW treated through incineration)	It is a credible, realistic and feasible baseline scenarios.
M2	Disposal of the fresh waste in a SWDS with a partial capture of the LFG and flaring of the captured LFG	It is the garbage disposal method under the project location without the proposed project. It is a credible, realistic and feasible baseline scenario.
M3	Disposal of the fresh waste in a SWDS without a LFG capture system	The latest relevant laws and regulations in China propose that landfill gas needs to be collected and burned for treatment. Therefore, this alternative is not a credible, realistic and feasible baseline scenario.
M4	Part of the fresh fraction of the solid waste is recycled and not disposed in the SWDS	There is no waste recycle facility in the location of the project, such technique is not applicable at the

		project site, all the MSW was disposed of in landfill, therefore M4 is not a credible, realistic and feasible baseline scenario.
M5	Part of the fresh fraction of the solid waste is treated aerobically and not disposed in the SWDS	There is no such facility in the surroundings of the project site, such technique is not applicable at the project site, all the MSW was disposed of in landfill, therefore, M5 is not a credible, realistic and feasible baseline scenario.
M6	Part of the organic fraction of the solid waste is incinerated and not disposed in the SWDS	There is no such facility in the surroundings of the project site, such technique is not applicable at the project site, all the MSW was disposed of in landfill, therefore, M6 is not a credible, realistic and feasible baseline scenario.
M7	Part of the organic fraction of the solid waste is gasified and not disposed in the SWDS	There is no such facility in the surroundings of the project site, such technique is not applicable at the project site, all the MSW was disposed of in landfill, therefore, M7 is not a credible, realistic and feasible baseline scenario.
M8	Part of the organic fraction of the solid waste is treated in an anaerobic digester and not disposed in the SWDS	There is no such facility in the surroundings of the project site, such technique is not applicable at the project site, all the MSW was disposed of in landfill, therefore, M8 is not a credible, realistic and feasible baseline scenario.
M9	Part of the organic fraction of the solid waste is mechanically or thermally treated to produce	There is no such facility in the surroundings of the project site,

	RDF/SB and not disposed in the SWDS	such technique is not applicable at the project site, all the MSW was disposed of in landfill, therefore, M9 is not a credible, realistic and feasible baseline scenario.
P	For electricity generation	
P1	Electricity generated as an output but not undertaken as a CDM project activity	It is a credible, realistic and feasible baseline scenario.
P2	Use of an existing or construction of a new on-site or off-site fossil fuel fired cogeneration plant	This project only involves electricity generation but not heating, so this alternative is not a credible, realistic and feasible baseline scenario.
P3	Existing or new construction of an on-site or off-site renewable based cogeneration plant	This project only involves electricity generation but not heating, so this alternative is not a credible, realistic and feasible baseline scenario.
P4	Existing or new construction of an on-site or off-site fossil fuel fired electricity plant	It is a credible, realistic and feasible baseline scenario.
P5	Existing or new construction of an on-site or off-site renewable based electricity plant	Solar energy, geothermal energy, biomass energy, wind energy and hydro energy are feasible renewable energy sources for the East China Power Grid. However, in order to provide the same amount of power generation as the project, it is necessary to consider the constraints of resources, technology costs and investment costs at the location of the project, so it is not a credible, realistic and feasible baseline scenario.

P6	Electricity generation in existing and/or new grid-connected electricity plants	The project site has been covered by the regional power grid, so it is a credible, realistic and feasible baseline scenario.

In conclusion, M1, M2, P1, P4 and P6 are all credible, realistic and feasible baseline scenarios.

Step 1b: Consistency with mandatory applicable laws and regulations

There are three regulations or laws that are match with the disposal of MSW when regarding the baseline scenarios:

GB16889-2008	Standard for pollution control of domestic waste landfill[16]
GB50869-2013	Technical code for municipal solid waste sanitary landfill[17]
GB18485-2014	Pollution control standard for domestic waste incineration[18]

The standard for pollution control of domestic waste landfills (GB16889-2008) is applicable to landfills built after July 1, 2008, specifies the requirements for landfill site selection, layout, construction and management. Technical code for municipal solid waste sanitary landfill (GB50869-2013) supplements and updates the above contents and gives regulations on the treatment methods of leachate and landfill gas and gives the possible utilization methods. According to the methods and requirements proposed in the above-mentioned two national standard documents, landfill sites nearby have been required to design landfill gas guide and drainage facilities, and processed part of the landfill gas. For compliance with national standards and conservative considerations, LFG collection and combustion facilities should also be set up in the landfill site designed when planning to landfill the waste treated by the project activities. This situation confirms that M2 is one of the realistic and feasible project baseline scenarios.

The pollution control standard for domestic waste incineration (GB18485-2014) specifies the site selection requirements, technical requirements, operation requirements, emission control requirements, monitoring requirements, implementation and supervision requirements of domestic waste incineration plants. The project activities have been filed and approved by relevant Chinese departments, so the construction of the project complies with relevant Chinese laws and regulations.

[16] https://www.mee.gov.cn/ywgz/fgbz/bz/bzwb/gthw/gtfwwrkzbz/200804/W020120719581734247724.pdf
[17] http://www.guanling.gov.cn/xxgk/xxgkml/zdlyxxgk/szfw/ljcl/201901/P020190103385893292464.pdf
[18] https://www.mee.gov.cn/ywgz/fgbz/bz/bzwb/gthw/gtfwwrkzbz/201405/t20140530_276307.shtml

In addition, according to the Chinese government document "Notice of the general office of the State Council on strictly prohibiting the illegal construction of 135MW and below thermal power units"[19], in areas covered by the power grid, without the approval of the state, it is not allowed to violate the construction procedures and start the construction of coal-fired thermal power projects, especially the thermal power units with an installed capacity of 135MW and below are strictly prohibited. The project is covered by the East China Power Grid, and the grid connected power generated by waste incineration is equivalent to 25MW power grid power generation project, so the construction of fossil fuel power plant of the same scale mentioned in P4 does not meet the requirements of China's laws and regulations. Also, there is no existing grid connected power plant in the project site that can provide the same amount of electricity, so scenario P4 is not realistic and feasible and should be excluded.

Step 2: Barrier analysis

This step serves to identify barriers and to assess which alternative scenarios are prevented by these barriers.

Step 2a: Identify barriers that would prevent the implementation of alternative scenarios

At the project site, the possible barriers that would prevent the alternative scenarios may include:

(1) Skilled labor to operate and maintain the technology is not available in the applicable geographical area;

(2) Specific technologies are not available;

(3) Lack of infrastructure for implementation, there may not be relevant equipment and facilities to assist in waste disposal around the project site

Step 2b: Eliminate alternative scenarios which are prevented by the identified barriers

According to the “development plan for urban domestic waste classification and treatment facilities in the 14th five year plan”[20] issued by China's National Development and Reform Commission in 2021, China's waste classification facility system still needs to be improved. It also puts forward that the existing domestic waste collection, transportation and treatment facility system is difficult to meet the classification requirements, indicating that China's urban domestic waste classification is still in the stage of development.

The lack of domestic waste classification capacity means that the treatment of some MSW that is not carried out in SWDS will be hindered to a great extent, which is also the main obstacle to the

[19] http://www.gov.cn/gongbao/content/2002/content_61480.htm
[20] https://www.ndrc.gov.cn/xxgk/zcfb/tz/202105/t20210513_1279763_ext.html

implementation of the six alternative scenarios M4, M5, M6, M7, M8 and M9, which supports the views on these six scenarios in step 1a.

After these steps, the remaining feasible baseline scenarios can be obtained as table below:

For the treatment of the fresh waste	M1: The project activity without being registered as a CDM project activity (MSW treated by incineration)
	M2: Disposal of the fresh waste in a SWDS with a partial capture of the LFG and flaring of the captured LFG
For electricity generation	P1: Electricity generated as an output but not undertaken as a CDM project activity
	P6: Electricity generation in existing and/or new grid-connected electricity plants

The possible combinations of baseline scenarios mentioned above are:

Combined Scenario 1: The project activity is incinerate MSW to generate electricity, without being registered as a CDM project activity (M1 and P1).

Combined Scenario 2: The disposal of the MSW is in a SWDS with a partial capture of the LFG and flaring of the captured LFG; the equivalent amount of electricity that the project may provide comes from the grid (M2 and P6).

Combined Scenario 3: MSW treated by incineration, project is not registered as a CDM project; the equivalent amount of electricity that the project may provide comes from the grid (M1 and P6).

Combined Scenario 4: The disposal of the MSW is in a SWDS with a partial capture of the LFG and flaring of the captured LFG; electricity is generated by incineration, but not undertaken as a CDM project (M2 and P1).

Combined Scenario 3 may cause waste of incineration power generation, Combined Scenario 4 is not logically feasible. Therefore, these two scenarios are both excluded because they are not realistic and feasible baseline scenario combinations.

Step 2 conclusion:

Feasible baseline scenarios include the following two combined scenarios:

Combined Scenario 1	The project activity is incinerating MSW to generate electricity, without being registered as a CDM project activity.
Combined Scenario 2	The disposal of the MSW is in a SWDS with a partial capture of the LFG and flaring of the captured LFG; the equivalent amount of electricity that the project may provide comes from the grid.

B.5. Demonstration of additionality

According to the approved methodology ACM0022 (Version 3.0) , the methodology document and the “TOOL02: Combined tool to identify the baseline scenario and demonstrate additionality” (Version 07.0) are applied to identify the additionality of the project. As the tool being used is a combined tool for baseline scenarios and additionality, this part is using the same tool as B.4. The Step 1 and 2 are finished in B.4. and Step 3 and 4 will be presented here.

Step 3: Investment analysis

According to the TOOL02, the purpose of investment analysis is to compare the financial attractiveness of the alternative scenarios. In this step, the approved CDM tool “TOOL27: Methodology tool: Investment analysis” is adopted. The following sub-steps are adopted for the investment analysis：

Step 3a: determine the appropriate analytical methods

The latest version of “Combined tool to identify the baseline scenario and demonstrate additionality” provides three types of methods to do the analysis, namely the Benchmark Analysis, the Investment Comparison Analysis and the Simple Cost Analysis.

Due to the project activity has economic profits from electricity sales other than incomes related to emission reduction, the Simple Cost Analysis is not applicable to the project.

The Investment Comparison Analysis only applicable to the case where the alternative scenario is also an investment project, so that comparative analysis can be carried out. However, baseline alternatives for project activities is that the disposal of the MSW is in a SWDS without a LFG capture system,while the equivalent amount of electricity that the project may produce is provided by the East China Power Grid. The alternative baseline scenario is not a new-built investment projects, so that the Investment Comparison Analysis is not suitable for this project.

For the above reasons, the methods picked which applicable to the project is the Benchmark Analysis. The internal rate of return is selected as a financial indicator during the analysis.

Step 3b: Apply the Benchmark Analyses

According to the “Interim Measures for economic evaluation of power engineering technological transformation projects” of the State Power Corporation, the financial internal rate of return (after income tax) of the whole investment of the project is determined to be 8%. Only when the total investment internal rate of return of the proposed project is higher than or equal to the benchmark value can the project be financially feasible. This value is widely used in the feasibility study report of China's power projects.

Step 3c: The calculation and comparison of financial indicator

(1) The basic parameters of the calculation of financial indicators

The parameters that used to calculate the financial indicators of this project are shown below, please note that all data are from FSR or project-related verified and approved documents, and the values are fixed values used for ex ante calculation:

	Essential Parameters	Unit	Value
1	Installed capacity	MW	25
2	Annual electricity generation	MWh	177000.00
3	Internal power consumption rate	%	19%
4	Net electricity delivered to ECPG	MWh	144000.00
5	Construction period	Year	2
6	Operation period	Year	28
7	Expected on-grid Tariff (VAT Inc.)	CNY/KWh	0.65
8	VAT Rate for electricity	%	17%
9	Proportion of VAT refund	%	70%
10	Total investment	10000 CNY	50401.45
11	Total static investment	10000 CNY	48678.13
12	Period of depreciation	Year	20
13	Depreciation rate	%	5%
14	Residual value rate of fixed assets	%	0%
15	Rate of income tax		
	1-3 of operation years	%	0%
	4-6 of operation years	%	12.5%
	Rest of operation years	%	25%
16	Rate of city maintenance and construction tax	%	7%
17	Rate of education surtax	%	3%

(2) Compare the internal rate of return under the financial indicators of the project activities with the internal rate of return under the consideration of the income of emission reduction projects

If the IRR of the project activity is lower than the benchmark value, it can be considered that the project activity is not financially attractive. The following table gives the calculation results of the financial index IRR when the income from emission reduction is not considered and the financial IRR when the income from emission reduction projects is considered.

	IRR (after tax)
Income from carbon emission reduction is not considered	6.47%
Income from carbon emission reduction is considered	8.12%

It can be seen from the above table that without considering the income from emission reduction, the internal rate of return of the whole investment of the project is 6.47%, the value is less than the benchmark yield of 8%. Therefore, only the project activity itself is not financially attractive, and it is not competitive and feasible from an economic point of view.

Considering the income from emission reduction, the internal rate of return of total investment has been significantly improved, increasing to 8.12%, which is numerically higher than the industry benchmark rate of return of 8%, which proves that the financial situation has been significantly improved and is feasible from a financial point of view.

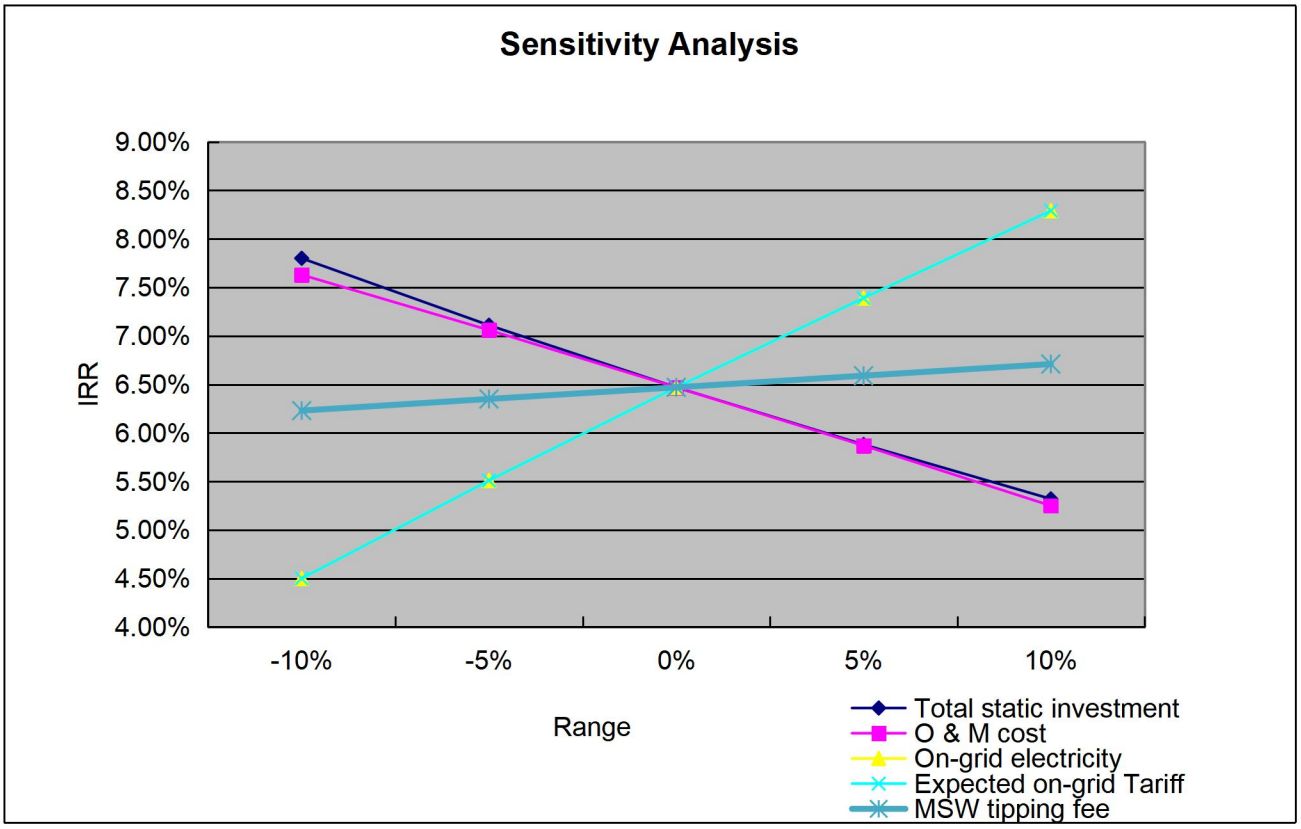
Step 3d: Sensitivity Analysis

The purpose of sensitivity analysis is to examine whether the conclusion of financial attractiveness can still be established when the key assumptions change reasonably. For this project, total static investment, MSW tipping fee, expected on-grid tariff, O & M cost and on grid electricity are selected as sensitivity factors to test whether the project is financially attractive.

The sensitivity test results of the internal rate of return of the project are shown in the table below when there is no income from the emission reduction project:

Parameters	-10%	-5%	0%	5%	10%
Total static investment	7.80%	7.11%	6.47%	5.88%	5.32%
O & M cost	7.63%	7.06%	6.47%	5.87%	5.25%
On-grid electricity	4.50%	5.51%	6.47%	7.39%	8.29%
MSW tipping fee	6.23%	6.35%	6.47%	6.59%	6.71%
Expected on-grid Tariff	4.50%	5.51%	6.47%	7.39%	8.29%

Make the table results into a line chart:



It can be seen from the contents of the figure that within the range of 10% increase or decrease of all sensitive factors, the influence of the all above five factors on IRR shows a linear trend, in which total static investment, O & M cost, on-grid electricity, expected on-grid tariff are more sensitive factors, MSW tipping feed are non sensitive factors.

If the IRR of the project is to reach the level of 8% in the case of changing only one parameter,, without considering the income from emission reduction, the changes of various indicators are shown in the table below:

Parameters	**-11.33%**	**-13.23%**	**8.36%**	**66.05%**	**8.36%**
Total static investment	8.00%				
O & M cost		8.00%			
On-grid electricity			8.00%		
MSW tipping fee				8.00%	
Expected on-grid tariff					8.00%

If the total static investment of the project can be reduced by 11.33% without changing other conditions, the project IRR can reach the level of 8%, but this change is not feasible in actual

project construction, and the value of 11.33% has exceeded the value of the benchmark, so this situation is unlikely to happen.

If the O & M cost of the project is reduced by 13.23%, the IRR of the project can reach the level of 8%. Since the O & M cost of the project cannot be reduced during the project operation year, and there is even a possibility of rising in terms of wages, benefits, maintenance costs, etc., this change is also impossible.

Changes in on-grid electricity and on-grid tariff may affect the project's electricity sales revenue. The changes of the two parameters have a similar impact on the electricity sales revenue. Under the condition of an increase of 8.36%, the project IRR can reach the level of 8%. Although the change does not exceed the benchmark value of 10%, neither of these two types of parameters has the possibility of such a rise. The on-grid electricity does not have the ability to increase significantly under the normal operation of the project activities, the on-grid electricity is purchased by the local power grid for a long time and the price tends to be stable, so these changes are not feasible.

If the waste treatment fee per ton of MSW can be increased by 66.05%, the IRR of the project can reach the level of 8%. The waste disposal fee is priced based on the market price, but the change in price also needs to be accepted by the other party who needs to deal with the garbage. There is no possibility of a substantial increase in the waste disposal fee. Therefore, a substantial increase in the garbage disposal fee is also impossible.

In conclusion, the project cannot raise its internal rate of return to the level of 8% through project adjustment. Therefore, it is a feasible way to consider registering as an emission reduction project and use emission reduction benefits to supplement economic benefits.

Step 3 conclusion:

The combined scenario 1 (i.e. the project activity is incinerate MSW to generate electricity, without being registered as a CDM project activity), is excluded because it is not feasible from an economic point of view. Therefore, the combined scenario 2 (i.e., the disposal of the MSW is in a SWDs with a partial capture of the LFG and flashing of the captured LFG, the equivalent amount of electricity that the project may provide comes from the grid), It is the only feasible alternative scenario, so it is the baseline scenario of the project.

Step 4: Common practice analysis

According to the "TOOL02: Combined tool to identify the baseline scenario and demonstrate additionality", since the project applies the measure that listed in the definitions section of TOOL02, the analysis goes to Step 4a of the tool document, TOOL24 is adopted.

The approved CDM tool “TOOL24: Methodological tool: Common practice” (Version 3.1) providers a step-wise approach for the conduction of the common practice analysis. The adoption of TOOL24 is under the demand of “TOOL02: Combined tool to identify the baseline scenario and demonstrate additionality”. The common practice analysis results obtained by using this tool will be directly exported as the results of step 4.

The definitions are clarified below:

(1) Applicable Geographical Area

China has a vast territory and uneven economic development. The economic and social development of various regions varies greatly, so the investment environment is also very different. Moreover, China's provinces also have their own characteristics in terms of population, available natural resources, industrial structure, infrastructure, development strategy and situation. These factors will affect the common practice analysis.

From the project related perspective, the different population, economic and social structure of each province in China may lead to different composition and quantity of domestic waste in each province, which will affect the cost, power generation and possible benefits of waste incineration. Moreover, the differences in power demand, economic environment and tax policies in different regions may also affect the investment, operation and income generation of the project.

Therefore, China as a whole cannot be used for the common practice analysis. As an alternative, according to the division of domestic provinces and cities in China, Anhui Province in China is selected as the applicable region for the common practice analysis.

(2) Measure

The CDM tool “TOOL24: Methodological tool: Common practice” (Version 3.1) builds a framework, defines four categories of measures for emission reduction activities. The activities of the project proposed by this document is utilize the heat generated during the incineration of MSW to generate electricity. Those MSW was transported to the SWDS for accumulation or landfill when there was no project activity, and methane was released in the process.

Therefore, the project can be assigned to category d), which is Methane formation avoidance.

(3) Output

The products of the project activity is the electricity generation provided by recycling and utilizing the heat generated in MSW incineration processes.

(4) Different Technologies

The TOOL24 (Version 3.1) defines Different Technologies as there is at least one difference with the proposed project at any of following aspects below:

(a) Energy source/fuel: The project uses MSW as the main fuel and light diesel oil as the ignition fuel

(b) Feed stock: MSW.

(c) Size of installation:The total loading capacity of the project is 25MW, being regarded as small size project.

(d) Investment climate on the date of the investment decision,such as access to the technology, subsidies or other financial flows, promotional policies, legal regulations et alia.

(e) Other features.

Step 4a:Calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity

The installed capacity of the project is 25MW. Therefore, according to the standard of + / - 50% of the capacity range, the common practice analysis of the project only considers the waste incineration project with an installed capacity of 12.5 to 37.5 MW or a daily waste treatment capacity of 605 to 1815 tons.

Step 4b: Identify similar projects (both CDM and non-CDM) which fulfil all of the following conditions

(a) The projects are located in the applicable geographical area, in this case means Anhui Province, China;

(b) The projects apply the same measure as the proposed project activity, which is methane formation avoidance;

(c) The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity, which means the being sought projects use light diesel oil as ignition fuel and auxiliary fuel, use MSW as main fuel.

(d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas as the proposed project plant， which is using the heat generated during the MSW incineration processes to produce electricity generation;

(e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1, which is from 12.5 MW to 37.5 MW;

(f) The projects started commercial operation before the start date of proposed project activity, which is 10/11/2017.

Step 4c: within the projects identified in Step 4b, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number N_{all}.

By searching China Clean Development Mechanism website, China Resource Emission Reduction Trading Information Platform, UN Climate Change website and other related websites such as CDM, VCS and GS, it was found that only MSW Incineration for 24MW Energy Generation Project in Anqing City, Anhui Province met the requirements of installed capacity and waste treatment capacity. Also, the operation time was earlier than the proposed project.

When screening the existing waste incineration plants in Anhui, three projects that meet the above conditions but have not started to apply for registration as a voluntary emission reduction project (refer to the waste incineration projects in Anhui with an installed capacity of 12.5-37.5 MW or a daily waste treatment capacity of 605-1815 tons and put into operation before November 10, 2017) are found.

Based on the above analysis, N_{all} = 1.

The similar activity that meet the above conditions are as follows:

Project	Installed capacity (MW)	Waste treatment capacity (t/day)	Main technology	Year of operation	Have applied for voluntary emission reduction projects or not
MSW Incineration for 24MW Energy Generation Project in Anqing City, Anhui Province[21]	24	800	circulating fluidized-bed incinerators	2012	Yes
Chuzhou municipal solid waste incineration power	12	700	circulating fluidized-bed incinerators	2014	No

[21] https://cdm.unfccc.int/Projects/DB/RWTUV1334038721.98/view

plant					

Step 4d: within similar projects identified in Step 4c, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number N_{diff}.

As the projects identified in step 4c all adopts the technology of fluidized bed waste incinerator, and the technical process is obviously different from that of the proposed project, N_{diff} = 1.

Step 4e: calculate factor F = 1 - N_{diff}/N_{all}, representing the share of similar projects using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity.

According to Step 4c and 4d, it can be calculated that F = 1 - N_{diff}/N_{all} = 0, less than 0.2, N_{all} - N_{diff} = 0, less than 3, so that the proposed project activity is not a “common practice”

To sum up, the proposed project complies with the principle so it has additionality.

B.6. Estimation of emission reductions

B.6.1. Explanation of methodological choices

According to the methodology ACM0022,the processes of calculating the emission reduction the project activity provided in the given year y (ER_y) are shown below:

(1) Calculate the Baseline Emissions;

(2) Calculate the Project Emissions;

(3) Calculate the Leakage;

(4) Calculate the Net GHG Emission Reduction and Removals.

B6.1.1. Baseline Emissions

The methodology ACM0022 is adopted in the context of the project in the following steps:

$$\mathrm{BE_Y} = \sum_t (\mathrm{BE_{CH4,t,y}} + \mathrm{BE_{WW,t,y}} + \mathrm{BE_{EN,t,y}} + \mathrm{BE_{NG,t,y}}) \times (1 - \mathrm{RATE_{compliance,t}}) \quad (1)$$

Where:

BE_Y	=	Baseline emissions in year y (t CO2e).
$BE_{CH4,t,y}$	=	Baseline emissions of methane from the SWDS in year y (tCO2e).
$BE_{WW,t,y}$	=	Baseline methane emissions from anaerobic treatment of the wastewater in open anaerobic lagoons or of sludge in sludge pits in the absence of the project activity in year y (tCO2e).
$BE_{EN,t,y}$	=	Baseline emissions associated with energy generation in year y (tCO2).
$BE_{NG,t,y}$	=	Baseline emissions associated with natural gas use in year y (tCO2).
$RATE_{compliance,t}$	=	Discount factor to account for the rate of compliance of a regulatory requirement that mandates the use of alternative waste treatment process t.
t	=	Type of alternative waste treatment process

All the unknowns in equation (1) will be calculated separately in chapters below. After the specific values for all items are obtained, the total calculation will be performed.

B6.1.1.1. Baseline emissions of methane form the SWDS ($BE_{CH4,t,y}$)

The CDM tool "TOOL04: Emissions from solid waste disposal sites" is applied to determine the baseline emissions of methane from the SWDS, the calculation equation is as follows:

$$BE_{CH4,SWDS,y} = \varphi_y \times (1 - f_y) \times GWP_{CH4} \times (1 - OX) \times \frac{16}{12} \times F \times DOC_{f,y} \times MCF_y \times \sum_{x=1}^{y} \sum_{j} (W_{j,x} \times DOC_j \times e^{-k_j \times (y-x)} \times (1 - e^{-k_j})) \quad (2)$$

Where:

$BE_{CH4,SWDS,y}$	=	Baseline, project or leakage methane emissions occurring in year y generated from waste disposal at a SWDS during a time period ending in year y (tCO2e/yr).
x	=	Years in the time period in which waste is disposed at the SWDS, extending from the first year in the time period (x = 1) to year y (x = y).
y	=	Year of the crediting period for which methane emissions are calculated (y is a consecutive period of 12 months).
$DOC_{f,y}$	=	Fraction of degradable organic carbon (DOC) that decomposes under the specific conditions occurring in the SWDS for year y (weight fraction).
$W_{j,x}$	=	Amount of solid waste type j disposed or prevented from disposal in the SWDS in the year x (t).
φ_y	=	Model correction factor to account for model uncertainties for year y.
f_y	=	Fraction of methane captured at the SWDS and flared, combusted or used in another manner that prevents the emissions of methane to the atmosphere in year y.
GWP_{CH4}	=	Global Warming Potential of methane.
OX	=	Oxidation factor (reflecting the amount of methane from SWDS that is oxidized in the soil or other material covering the waste).
F	=	Fraction of methane in the SWDS gas (volume fraction).
MCF_y	=	Methane correction factor for year y.
DOC_j	=	Fraction of degradable organic carbon in the waste type j (weight fraction).

k = Decay rate for the waste type j (1 / yr).

j = Type of residual waste or types of waste in the MSW.

In the ex ante calculation process, the default value is selected for the value of f_y. According to the requirements of methodology ACM0022, if there is no requirement for the capture and destruction of methane in SWDS in the project location, the default value is 0, and if there are relevant standards, the value is 0.2. According to the national initiative document, Bengbu City, Anhui Province, where the project is located, proposed the requirement to install methane collection and combustion devices in SWDS to deal with the fugitive methane generated by the piled garbage. Therefore, for the principle of conservative consideration, in the ex ante calculation, $f_y = 0.2$.

B6.1.1.2. Baseline emissions from organic wastewater ($BE_{WW,t,y}$)

The baseline scenario does not involve the treatment of organic wastewater, therefore $BE_{WW,t,y}$ = 0.

B6.1.1.3. Baseline emissions from generation of energy ($BE_{EN,y}$)

$$BE_{EN,y} = BE_{EC,y} + BE_{HG,y} \quad (3)$$

Where:

$BE_{EN,y}$ = Baseline emissions associated with energy generation in year y (tCO2) .

$BE_{EC,y}$ = Baseline emissions associated with electricity generation in year y (tCO2).

$BE_{HG,y}$ = Baseline emissions associated with heat generation in year y (tCO2).

B6.1.1.3.1. Baseline emissions from separate generation of electricity ($BE_{EC,y}$)

The CDM tool “TOOL05: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation” is applied to determine the baseline emissions from separate generation of electricity, the calculation equation is as follows:

$$BE_{EC,y} = \sum_k EC_{BL,k,y} \times EF_{EF,k,y} \times (1 + TDL_{k,y}) \quad (4)$$

Where:

$BE_{EC,y}$ = Baseline emissions from electricity consumption in year y (tCO2 / yr).

$EC_{BL,k,y}$ = Quantity of electricity that would be consumed by the baseline electricity consumer k in year y (MWh/yr).

$EF_{EF,k,y}$ = Emission factor for electricity generation for source k in year y (tCO2/MWh).

$TDL_{k,y}$ = Average technical transmission and distribution losses for providing electricity to source k in year y.

Based on the default values given in the CDM tool "TOOL07: Tool to calculate the emission factor for an electricity system" (Version 07.0), $TDL_{k,y}$ is taken to be 3%.

B6.1.1.3.1.1. Determination of the emission factor for electricity generation ($\mathbf{EF_{EL,\,k,\,y}}$)

According to the calculation tool used, the emission factor $EF_{EL,\,k,\,y}$ for electricity generation is determined by the project scenario. This project is a case of scenario A, therefore, there are two methods can be used to determine $EF_{EL,\,k,\,y}$:

Option A1: Calculated according to approved CDM Tool;

Option A2: Use conservative default values.

Option A1 is selected for this project, and CDM tool "TOOL07: Tool to calculate the emission factor for an electricity system" (Version 07.0) is applied, to calculate the emission factor for electricity generation :

$$EF_{EL,k,y} = EF_{grid,CM,y} \quad (5)$$

Where

$EF_{EL,k,y}$ = Emission factors of power generation sources k in year y (tCO2/MWh).

$EF_{grid,CM,y}$ = Combined marginal emission factor of power system in year y (MWh/yr).

Six steps are proposed below, according to the CDM tool:

Step 1: Identify the relevant electricity systems;

Step 2: Choose whether to include off-grid power plants in the project electricity system ;

Step 3: Select a method to determine the operating margin (OM);

Step 4: Calculate the operating margin emission factor according to the selected method;

Step 5: Calculate the build margin (BM) emission factor;

Step 6: Calculate the combined margin (CM) emission factor.

Step 1: Identify the relevant electricity systems

The national development and reform commission of China has defined the power grid system connected to the project. The project activity takes place in Bengbu, Anhui, therefore, the relevant electricity system is the East China Power Grid. According to "2019 China regional power grid baseline emission factors", the coverage of East China Power Grid includes Shanghai, Jiangsu Province, Zhejiang Province, Anhui Province and Fujian Province.

Step 2: Choose whether to include off-grid power plants in the project electricity system

There are two options may be chosen to calculate the operating margin and build margin emission factor:

Option 1: Only grid power plants are included in the calculation.

Option 2: Both grid power plants and off-grid power plants are included in the calculation.

In the calculation of this project, Option 1 is adopted.

Step 3: Select a method to determine the operating margin (OM);

Four methods are provided for the calculation of the operating margin emission factor ($EF_{grid, OM, y}$), namely:

(a) Simple OM;

(b) Simple adjusted OM;

(c) Dispatch data analysis OM;

(d) Average OM.

The project adopts method (a), i.e. simple OM calculation method. This method requires that the low-cost power generation and the power generation that must be operated account for less than 50% of the power supply of the power grid. The calculation data comes from: 1) the average data in recent five years; 2) Based on long-term average generation. Based on the data analysis of China Electric Power Yearbook in recent years, it can be concluded that the installed capacity of low-cost and necessary power plants in East China Power Grid accounts for less than 50%, so method (a) is applicable.

For simple OM, the emissions factor can be calculated using either of the two data vintages, namely ex ante option and ex post option.

Ex ante option: if the ex ante option is chosen, the emission factor is determined once at the validation stage, thus no monitoring and recalculation of the emissions factor during the crediting period is required. For grid power plants, use a 3-year generation-weighted average, based on the most recent data available at the time of submission of the PSF to the GCC Verifiers for validation.

Ex post option: if the ex post option is chosen, the emission factor is determined for the year in which the project activity displaces grid electricity, requiring the emissions factor to be updated annually during monitoring. If the data required to calculate the emission factor for year y is usually only available later than six months after the end of year y, alternatively the emission factor of the previous year y-1 may be used. If the data is usually only available 18 months after the end of year y, the emission factor of the year proceeding the previous year y-2 may be used. The same data vintage (y, y-1 or y-2) should be used throughout all crediting periods.

This project adopts the method of ex ante calculation. All data used in the calculation and the resulting emission factors are determined in advance and are not updated throughout the crediting period.

Step 4: Calculate the operating margin emission factor according to the selected method

The simple OM emission factor is calculated as the generation-weighted average CO_2 emissions per unit net electricity generation of all generating power plants serving the system, not including LCMR. The CDM tool TOOL07 provides two options for the calculation of simple OM. Option A is based on the net electricity generation and a CO_2 emission factor of each power unit, which is not applicable to this project since most of the data of those power plant is confidential and unable to access.

Option B is the method being adopted, which based on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system, as follows:

$$EF_{grid,OMsimple,y} = \frac{\sum_i FC_{i,y} \times NCV_{i,y} \times EF_{CO2,i,y}}{EG_y} \quad (6)$$

Where:

$EF_{grid,OMsimple,y}$	=	Simple operating margin CO2 emission factor in year y (t CO2/MWh)
$FC_{i,y}$	=	Amount of fuel type i consumed in the project electricity system in year y (mass or volume unit)
$NCV_{i,y}$	=	Net calorific value (energy content) of fuel type i in year y (GJ/mass or volume unit)
$EF_{CO2,i,y}$	=	CO2 emission factor of fuel type i in year y (t CO2/GJ)
EG_y	=	Net electricity generated and delivered to the grid by all power sources serving the system, not including low-cost/must-run power plants/units, in year y (MWh)
i	=	All fuel types combusted in power sources in the project electricity system in year y
y	=	The relevant year as per the data vintage chosen in Step 3

The data selection of power supply and fuel consumption in OM calculation follows the conservative principle. For the calculation process, see 2019 China regional power grid baseline emission factors published by the national development and Reform Commission.

According to the calculation, $EF_{grid,OMsimple,y}$ = 0.7921 tCO2/MWh.

Step 5: Calculate the build margin (BM) emission factor

In terms of vintage of data, project participants can choose between one of the following two options:

Option 1: For the first crediting period, calculate the build margin emission factor ex ante based on the most recent information available on units already built for sample group m at the time of PSF submission to the GCC verifier for validation. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already

built at the time of submission of the request for renewal of the crediting period to the GCC verifier. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.

Option 2: For the first crediting period, the build margin emission factor shall be updated annually, ex post, including those units built up to the year of registration of the project activity or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available. For the second crediting period, the build margin emissions factor shall be calculated ex ante, as described in Option 1 above. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used.

In line with China's Baseline emission factors of regional grids 2019 (BEF2019) published by the Development and Reform Commission of China, Option 1 is chosen for the project; the BM emission factor is calculated ex ante based on the most recent information available on units already built for sample group *m* at the time of this project description submission.

The sample group of power units m used to calculate the build margin should be determined as per the following procedure, consistent with the data vintage selected above:

a) Identify the set of five power units, excluding power units registered as CDM project activities, that started to supply electricity to the grid most recently ($SET_{5\text{-units}}$) and determine their annual electricity generation ($AEG_{SET\text{-}5\text{-}units}$, in MWh);

b) Determine the annual electricity generation of the project electricity system, excluding power units registered as CDM project activities (AEG_{total}, in MWh). Identify the set of power units, excluding power units registered as CDM project activities, that started to supply electricity to the grid most recently and that comprise 20% of AEG_{total} (if 20% falls on part of the generation of a unit, the generation of that unit is fully included in the calculation) (SET≥20%) and determine their annual electricity generation ($AEG_{SET\text{-}\geq 20\%}$, in MWh);

c) From $SET_{5\text{-units}}$ and $SET_{\geq 20\%}$ select the set of power units that comprises the larger annual electricity generation (SET_{sample});

Identify the date when the power units in SET_{sample} started to supply electricity to the grid. If none of the power units in SET_{sample} started to supply electricity to the grid more than 10 years ago, then use SET_{sample} to calculate the build margin. In this case ignore Steps (d), (e) and (f).

d) Exclude from SET_{sample} the power units which started to supply electricity to the grid more than 10 years ago. Include in that set the power units registered as CDM project activities, starting with power units that started to supply electricity to the grid most recently, until the electricity generation of the new set comprises 20% of the annual electricity generation of the proposed

project electricity system (if 20% falls on part of the generation of a unit, the generation of that unit is fully included in the calculation) to the extent is possible. Determine for the resulting set ($SET_{sample\text{-}CDM}$) the annual electricity generation ($AEG_{SET\text{-}sample\text{-}CDM}$, in MWh); If the annual electricity generation of that set comprises at least 20% of the annual electricity generation of the proposed project electricity system (i.e. $AEG_{SET\text{-}sample\text{-}CDM} \geq 0.2 \times AEG_{total}$), then use the sample group $SET_{sample\text{-}CDM}$ to calculate the build margin. Ignore steps (e) and (f).

Otherwise:

e) Include in the sample group $SET_{sample\text{-}CDM}$ the power units that started to supply electricity to the grid more than 10 years ago until the electricity generation of the new set comprises 20% of the annual electricity generation of the proposed project electricity system (if 20% falls on part of the generation of a unit, the generation of that unit is fully included in the calculation);

f) The sample group of power units m used to calculate the build margin is the resulting set ($SET_{sample\text{-}CDM\text{->}10yrs}$).

The build margin emissions factor is the generation-weighted average emission factor (tCO_2/MWh) of all power units m during the most recent year y for which power generation data is available, calculated as follows:

$$EG_{grid,BM,y} = \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{EG_{m,y}} \quad (7)$$

Where:

$EG_{grid,BM,y}$	=	Build margin CO_2 emission factor in year y (tCO_2/MWh)
$EG_{m,y}$	=	Net quantity of electricity generated and delivered to the grid by power unit m in year y
$EF_{EL,m,y}$	=	CO_2 emission factor of power unit m in year y (tCO_2/MWh)
m	=	Power units included in the Build Margin
y	=	The most recent year for which data is available

Since the data of installed capacities can not be separated to coal fired, oil fired and gas fired currently, BM is calculated with the following steps and formula:

As it is difficult to obtain the detailed data on the power generation, fuel consumption and thermal efficiency of each newly built power unit from public documents, a deviation of TOOL07 is adopted following the clarifications given by the CDM EB concerning the BM emission factor calculation:adopted following the clarifications[22] given by the CDM EB concerning the BM emission factor calculation:

(1) The CDM EB suggested using the efficiency level of the best technology commercially available in the provincial/regional or national grid of China, as a conservative proxy, for each fuel type in estimating the fuel consumption to estimate the build margin.

(2) The EB agreed the use of capacity additions during last 1 ~ 3 years for estimating the build margin emission factor for grid electricity.

(3) The EB also agreed to use of weights estimated using installed capacity in place of annual electricity generation.

The newly built power plants in the past few years are bundled into “grouped new power plant” according to their construction year, their province and their fuel type. The annual net electricity generation in the year y of each “grouped new power plant” $EG_{m,y}$ is estimated according to their total capacity and the average utilization hours, as the following equation:

$$\mathrm{EG_{m,y}} = \mathrm{CAP_m} \times \mathrm{H_{m,y}} \qquad (8)$$

Where:

$\mathrm{EG_{m,y}}$	=	Annual net electricity generation the unit m in year y (MWh)
$\mathrm{CAP_m}$	=	Installed capacity of the unit m (MW)
$\mathrm{H_{m,y}}$	=	Utilization hour of the unit m in the year y (h), determined according to the average utilization hour of the same type of unit in the same province
m	=	Grouped new power plant
y	=	The most recent year for which the generation data is available. For the calculation of BM in 2019, y = 2017

[22] “Request for clarification on use of approved methodology AM0005 for several projects in China”, the EB’s guidance on DNV deviation request.
http://cdm.unfccc.int/UserManagement/FileStorage/AM_CLAR_QEJWJEF3CFBP1OZAK6V5YXPQKK7WYJ

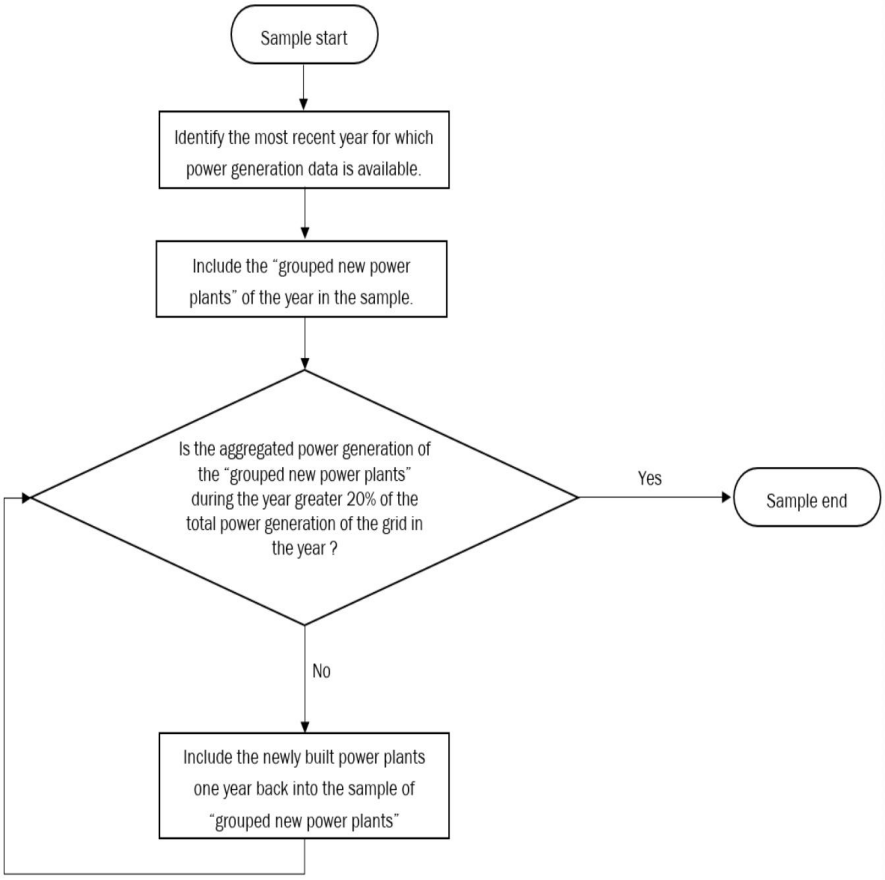
Since the newly built power plants in the same province (A), in the same year (t) and using the same fuel type (k) are grouped into "a grouped new power plant", CAP represents the total installed m capacity of fuel type k power plants located in the provinces A and in the year t:

$$\mathrm{CAP_m} = \mathrm{CAP_{A,t,k}} \quad (9)$$

Where:

$\mathrm{CAP_m}$	=	Installed capacity of the unit m (MW), with m representing the specified combination of A, t, and k
$\mathrm{CAP_{A,t,k}}$	=	Total installed capacity of fuel type k power plants located in the province A and in the year t
A	=	Provinces covered by the CCPG, namely, Henan Province, Hubei Povince, Hunan Province, Jiangxi Province, Sichuan Province and Chongqing City.
t	=	Years related to the grouped new power plants, for the 2019 calculation, t represents 2017, 2016, 2015.... Until the aggregated electricity generation of the grouped new power plants reaches 20% of the total electricity generation of the CCPG
k	=	Fuel type of the grouped new power plants, including hydro, thermal (coal, gas, oil, waste incineration, other thermal), nuclear, wind, solar and other.

The figure below shows the procedure to determine the sample group of power units *m*.



The emission factors of each fuel type $EF_{EL,m,y}$ are determined according to the Option A2 in the TOOL07, as the following equation:

$$EF_{EL,m,y} = \frac{EF_{CO2,m,i,y} \times 3.6}{\eta_{m,y}} \qquad (10)$$

Where:

$EF_{EL,m,y}$	=	CO2 emission factor of power unit m in year y (tCO2/MWh)
$EF_{CO2,m,i,y}$	=	Average CO2 emission factor of fuel type i used in power unit m in year y (tCO2/GJ)
$\eta_{m,y}$	=	Average net energy conversion efficiency of power unit m in year y (ratio)

m	=	All power units serving the grid in year y except low-cost / must-run power units
3.6	=	Conversion factor (GJ/MWh)

Among the fuel types, the emission factors of hydro, nuclear, wind, other thermal and others are 0. Concerning the emission factors of coal, gas, oil and waste incineration, Equation takes the following form due to conservativeness:

$$EF_{best,m,y} = \frac{EF_{CO2,m,i,y} \times 3.6}{\eta_{best,y}} \quad (11)$$

Where:

$EF_{best,m,y}$	=	Emission factor of power unit m with the best technology commercially available in year y (tCO_2/MWh)
$\eta_{best,y}$	=	Power generation efficiency of the best technology commercially available in year y
m	=	Power units serving the grid with coal, gas, oil or waste incineration in year y

$EF_{grid,BM,y}$ of the project adopts the calculation results published by the national development and Reform Commission. According to the latest and available data at the time of this PSF submission, $EF_{grid,BM,y}$ =0.3870.

Step 6: Calculate the combined margin emissions factor

Combined margin emissions factor is the weighted average of OM and BM:

$$EF_{grid,CM,y} = \omega_{OM} \times EF_{grid,OM,y} + \omega_{BM} \times EF_{grid,BM,y} \quad (12)$$

Among them, according to the CDM tool "TOOL07: Tool to calculate the emission factor for an electricity system" (Version 07.0), the weight of OM is 50%, and the weight of BM is 50%.

B6.1.1.3.2. Baseline emissions associated with separate generation of heat ($BE_{HG,y}$)

The baseline scenario does not involve heat generation, therefore $BE_{HG,y}$ = 0.

B6.1.1.4. Cogeneration of electricity and heat

There is no electricity and heat cogeneration are involved or calculated in the project, so not applicable.

B6.1.1.5. Baseline emissions associated with natural gas use ($BE_{NG,y}$)

The baseline scenario are not involved with natural gas use, therefore not applicable.

B6.1.2. Project Emissions

The project emissions in year y are calculated for each alternative waste treatment process implemented in the project activity as follows:

$$PE_y = PE_{COMP,y} + PE_{AD,y} + PE_{GAS,y} + PE_{RDF\_SB,y} + PE_{INC,y} \quad (13)$$

Where:

PE_y	=	Project emissions in year y (tCO2e)
$PE_{COMP,y}$	=	Project emissions from composting or co-composting in year y (tCO2e)
$PE_{AD,y}$	=	Project emissions from anaerobic digestion and biogas combustion in year y (tCO2e)
$PE_{GAS,y}$	=	Project emissions from gasification in year y (tCO2e)
$PE_{RDF\_SB,y}$	=	Project emissions associated with RDF/SB in year y (tCO2e)
$PE_{INC,y}$	=	Project emissions from incineration in year y (tCO2e)

B6.1.2.1. Project emissions from composting or co-composting ($PE_{COMP,y}$)

The project activity of this project does not involve composting, so that $PE_{COMP,y}$ = 0.

B6.1.2.2. Project emissions from anaerobic digestion ($PE_{AD,y}$)

The project activity of this project does not involve anaerobic digestion, so that $PE_{AD,y}$ = 0.

B6.1.2.3. Project emissions from gasification ($PE_{GAS,y}$)

The project activity of this project does not involve gasification, so that $PE_{GAS,y}$ = 0.

B6.1.2.4. Project emissions associated with mechanical or thermal production of RDF/SB ($PE_{RDF\_SB,y}$)

The project activity of this project does not involve mechanical or thermal production of RDF/SB, so that $PE_{RDF\_SB,y}$ = 0.

B6.1.2.5. Project emissions from incineration ($PE_{INC,y}$)

$$PE_{INC,y} = PE_{COM,INC,y} + PE_{EC,INC,y} + PE_{FC,INC,y} + PE_{ww,INC,y} \quad (14)$$

Where:

$PE_{INC,y}$	=	Project emissions from incineration in year y (tCO2e)
$PE_{COM,INC,y}$	=	Project emissions from combustion within the project boundary of fossil waste associated with incineration in year y (tCO2)
$PE_{EC,INC,y}$	=	Project emissions from electricity consumption associated with incineration year y (tCO2e)
$PE_{FC,INC,y}$	=	Project emissions from fossil fuel consumption associated with incineration in year y (tCO2e)
$PE_{ww,INC,y}$	=	Project emissions from the wastewater treatment associated with incineration in year y (tCH4)

B6.1.2.5.1. Project emissions from combustion within the project boundary ($PE_{COM,C,y}$)

This procedure estimates emissions from gasifiers, incinerators, RDF/SB combustors and syngas burners ($PE_{COM,c,y}$). The procedure is not relevant for flares or biogas combustors. Emissions consist of carbon dioxide, and small amounts of methane and nitrous oxide, as follows:

$$PE_{COM,C,y} = PE_{COM,CO2,c,y} + PE_{COM,CH4,N2O,c,y} \quad (15)$$

Where:

$PE_{COM,C,y}$	=	Project emissions from combustion within the project boundary associated

with combustor c in year y (tCO2e)

$PE_{COM,CO2,c,y}$ = Project emissions of CO2 from combustion within the project boundary associated with combustor c in year y (tCO2)

$PE_{COM,CH4,N2O,c,y}$ = Project emissions of CH4 and N2O from combustion within the project boundary associated with combustor c in year y (t CO2)

c = Combustor used in the project activity: gasifier or syngas burner, incinerator or RDF/SB combustor

B6.1.2.5.1.1. Project emissions of CO2 from combustion within the project boundary ($\mathbf{PE_{COM,CO2,c,y}}$)

Carbon dioxide project emissions associated with on-site combustion are calculated based on the fossil carbon content of burned fresh waste or RDF / SB, or the fossil carbon content of flue gas.

Project participants may select from three options to calculate $PE_{COM\_CO2,c,y}$. Option 1 requires sorting the fresh waste into components of waste type j and then determining the fossil-based carbon content of each waste type j. Option 2 determines the fossil-based carbon content of the unsorted fresh waste or RDF/SB (noting that Option 1, sorting into waste fractions, is not applicable if only RDF/SB is combusted). Option 3 measures directly the fossil-based carbon content of the stack gas.

The project adopt option 1 to do the calculation. The values of $FCC_{j,y}$ and $FFC_{j,y}$ are given in Parameter Table 14 and 15 in B.6.2.

Option 1: Waste sorted into waste type fractions

$$PE_{COM,CO2,c,y} = EFF_{COM,c,y} \times \frac{44}{12} \times \sum_j Q_{j,c,y} \times FCC_{j,y} \times FFC_{j,y} \quad (16)$$

Where:

$PE_{COM,CO2,c,y}$ = Project emissions of CO2 from combustion within the project boundary associated with combustor c in year y (tCO2)

$Q_{j,c,y}$ = Quantity of fresh waste type j fed into combustor c the in year y (t)

$FCC_{j,y}$ = Fraction of total carbon content in waste type j in year y (t C/t)

$FFC_{j,y}$	=	Fraction of fossil carbon in total carbon content of waste type j in year y (weight fraction)
$EFF_{COM,c,y}$	=	Combustion efficiency of combustor c in year y (fraction)
$\frac{44}{12}$	=	Conversion factor (tCO2/t C)
c	=	Combustor used in the project activity: gasifier, incinerator or RDF/SB combustor
j	=	Waste type

Project participants may select to either directly monitor the amount of waste type j fed into the combustor c in year y ($Q_{j,c,y}$) or calculate this parameter based on monitoring the total waste fed to the combustor and sampling the waste to determine the fraction of waste type j as per the following equation:

$$Q_{j,c,y} = Q_{waste,c,y} \times \frac{\sum_{n=1}^{z} P_{n,j,y}}{z} \quad (17)$$

Where:

$Q_{j,c,y}$	=	Quantity of waste type j fed into combustor c in year y (t)
$Q_{waste,c,y}$	=	Quantity of fresh waste or RDF/SB fed into combustor c in year y (t)
$P_{n,j,y}$	=	Fraction of waste type j in the sample n collected during the year y (weight fraction)
z	=	Number of samples collected during the year y
n	=	Samples collected in year y
j	=	Waste type

B6.1.2.5.1.2. Project emissions of CH4 and N_2O from combustion within the project boundary ($PE_{COM,CH4,N2O,c,y}$)

Emissions of N_2O and CH_4 from combustion of RDF/SB are neglected because they are considered very minor. For the case of gasification or incineration, project participants may choose either Option 1 or Option 2 to estimate emissions of N_2O and CH_4 from combustion within the project boundary. Option 1 calculates the emissions based on monitoring the N_2O and CH_4 content in the stack gas. Option 2 calculates the emissions using default emission factors for the amount of N_2O and CH_4 emitted per tonne of fresh waste combusted.

The project adopt Option 2 to do the calculation.

$$PE_{COM\_CH4,N2O,c,y} = Q_{waste,c,y} \times (EF_{N2O,t} \times GWP_{N20} + EF_{CH4,t} \times GWP_{CH4}) \quad (18)$$

Where:

$PE_{COM\_CH4,N2O,c,y}$	=	Project emissions of CH4 and N2O from combustion within the project boundary associated with combustor c in year y (tCO2)
$Q_{waste,c,y}$	=	Quantity of fresh waste or RDF/SB fed into combustor c in year y (t)
$EF_{N2O,t}$	=	Emission factor for N2O associated with waste treatment process t (tN2O/t waste)
$EF_{CH4,t}$	=	Emission factor for CH4 associated with treatment process t (tCH4/t waste)
GWP_{N20}	=	Global Warming Potential of nitrous oxide (tCO2e/t N2O)
GWP_{CH4}	=	Global Warming Potential of methane valid for the commitment period (tCO2e/tN2O)
c	=	Combustor used in the project activity: gasifier, incinerator
t	=	Type of alternative waste treatment processes: gasification, incineration

B6.1.2.5.2. Project emissions from electricity consumption ($PE_{EC,t,y}$)

The project emissions from electricity consumption due to waste treatment process t implemented under the project activity ($PE_{EC,t,y}$) shall be calculated using “TOOL05: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation”. According

to the tool, the project emissions from electricity consumption can be calculated using following equation:

$$PE_{EC,y} = \sum_k EC_{PJ,j,y} \times EF_{EL,j,y} \times (1 + TDL_{j,y}) \quad (19)$$

Where:

$PE_{EC,y}$	=	Project emissions from electricity consumption in year y (tCO2/yr).
$EC_{PJ,j,y}$	=	The power consumed by the power consumption source j of the project, except the power consumption generated by the project itself, in year y (MWh/yr).
$EF_{EL,j,y}$	=	Emission factors of power generation from power consumption source j of the project in year y (tCO2/MWh).
$TDL_{j,y}$	=	Average technical transmission and distribution loss of power supplied to source j in year y.
k	=	Source of power consumption in the benchmark

In the formula, j refers to the source of electricity consumed by the project's emissions. The baseline scenario of this project is landfill disposal of MSW, but the same amount of electricity is supplied by the East China Power Grid. Therefore, the power source j is the East China Power Grid.

Determining emission factors for electricity generation depends on which scenario (A, B or C) is applied to the electricity consumption source. For this project, scenario A adopted.

Scenario A: The grid provides electricity

Project participants choose scenario A1 for calculation. Calculate the combined margin emission factor of the applicable electricity system, using the procedures in the latest approved version of the CDM tool "TOOL07: Tool to calculate the emission factor for an electricity system"($\mathrm{EF_{EL,k,y}} = \mathrm{EF_{grid,CM,y}}$).

The project will only use power supply from the grid during emergency and maintenance phases. This amount of electricity will be included in the monitoring and can be estimated at 0 at this stage. therefore, $\mathrm{PE_{EC,t,y}}$ = 0.

B6.1.2.5.3. Project emissions from fossil fuel use ($\mathbf{PE_{FC,j,y}}$)

The project emissions from fossil fuel combustion associated with waste treatment process t implemented under the project activity ($PE_{FC,t,y}$) shall be calculated using "TOOL03: Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion". According to the tool, the calculation equations are:

$$PE_{FC,j,y} = \sum_i FC_{i,j,y} \times COEF_{i,y} \quad (20)$$

Where:

$PE_{FC,j,y}$	=	Are the CO2 emissions from fossil fuel combustion in process j during the year y (tCO2/yr)
$FC_{i,j,y}$	=	Is the quantity of fuel type i combusted in process j during the year y (mass or volume unit/yr)
$COEF_{i,y}$	=	Is the CO2 emission coefficient of fuel type i in year y (tCO2/mass or volume unit)
i	=	Are the fuel types combusted in process j during the year y

$$COEF_{i,y} = NCV_{i,y} \times EF_{CO2,i,y} \quad (21)$$

Where:

$NCV_{i,y}$	=	Is the weighted average net calorific value of the fuel type i in year y (GJ/mass or volume unit)
$EF_{CO2,i,y}$	=	Is the weighted average CO2 emission factor of fuel type i in year y (tCO2/GJ)

B6.1.2.5.4. Project emissions from wastewater discharge management ($PE_{ww,t,y}$)

According to the CDM methodology ACM0022, the project activity generates wastewater discharge that is treated anaerobically,the methane generated by the wastewater discharge is combusted completely:

$$PE_{ww,t,y} = \frac{PE_{flare,ww,y}}{GWP_{CH4}} \quad (22)$$

Where

$PE_{ww,t,y}$ = Project emissions of methane from wastewater discharge associated with alternative waste treatment process t in year y (t CO2e)

$PE_{flare,ww,y}$ = Emissions from flaring associated with wastewater discharge treatment in year y (t CO2e)

GWP_{CH4} = Global Warming Potential of methane valid for the commitment period (t CO2e/t CH4)

The CDM tool "TOOL06: Project emissions from flaring" shall be used to estimate the resulting methane emissions from flaring. Due to in the project scenario, the methane is combusted in an incinerator, rather than flared, then for the case that Option 2 has been selected, the destruction efficiency of the methane contained in the gas is assumed as 90 per cent, with $PE_{flare,ww,y}$ = $PE_{com,ww,y}$ and emissions calculated as follows:

$$PE_{com,ww,y} = F_{CH4,flare,y} \times 0.1 \quad (23)$$

Where:

$\mathrm{PE}_{\mathrm{flare,y}}$ = Project emissions from flaring of the residual gas in year y (tCO2e)

$\mathrm{GWP}_{\mathrm{CH4}}$ = Global warming potential of methane valid for the commitment period (tCO2e/tCH4)

$\mathrm{F}_{\mathrm{CH4,RG,m}}$ = Mass flow of methane in the residual gas in the minute m (kg)

$\eta_{\mathrm{flare,m}}$ = Flare efficiency in the minute m

$\mathrm{F}_{\mathrm{CH4,RG,m}}$ is determined using the CDM tool "TOOL 08: Tool to determine the mass flow of a greenhouse gas in a gaseous stream". Since the calculation procedure uses monitoring data for the volume flow of gaseous, and the stream cannot be proven to be dry, Option C in the tool is chosen. The calculation equation is as follows:

$$F_{i,t} = V_{t,wb,n} \times v_{i,t,wb} \times \rho_{i,n} \quad (24)$$

Where:

$F_{i,t}$ = Mass flow of greenhouse gas i in the gaseous stream in time interval t (kg

gas/h)

$V_{t,wb,n}$ = Volumetric flow of the gaseous stream in time interval t on a wet basis at normal conditions (m³ wet gas/h)

$v_{i,t,wb}$ = Volumetric fraction of greenhouse gas i in the gaseous stream in time interval t on a wet basis (m³ gas i/m³ wet gas)

$\rho_{i,n}$ = Density of greenhouse gas i in the gaseous stream at normal conditions (kg gas i/m³ wet gas i)

$$\rho_{i,n} = \frac{P_n \times MM_i}{R_u \times T_n} \quad (25)$$

Where:

P_n = Absolute pressure at normal conditions (Pa)

MM_i = Molecular mass of greenhouse gas i (kg/kmol)

R_u = Universal ideal gases constant (Pa.m3 /kmol.K)

T_n = Temperature at normal conditions (K)

For ex ante calculations of project emissions from wastewater discharge management, where monitoring data are not available, considering the need for conservative estimates, the following equation can be used:

$$PE_{flare,y} = Q_{ww,y} \times P_{COD,y} \times B_o \times MCF_{ww} \times (1 - \eta_{flare}) \times GWP_{CH4} \quad (26)$$

Where:

$PE_{flare,y}$ = Project emissions from flaring of the residual gas in year y (tCO2e)

$Q_{ww,y}$ = Amount of run-off waste water generated by the project activity and treated anaerobically or released untreated from the project activity in year y (m3)

$P_{COD,y}$ = COD of the run-off wastewater generated by the project activity in year y (tCOD/m3)

B_o	=	Maximum methane producing capacity, expressing the maximum amount of CH4 that can be produced from a given quantity of chemical oxygen demand (tCH4/tCOD)
MCF_{ww}	=	Methane conversion factor (fraction)
η_{flare}	=	Flare efficiency
GWP_{CH4}	=	Global warming potential of methane valid for the commitment period (tCO2e/tCH4)

B6.1.3. Leakage (LE_y)

Leakage emissions are associated with composting/co-composting, anaerobic digestion

and the use of RDF/SB that is exported outside the project boundary. For the case that waste by-products of the alternative waste treatment process are:

(a) Used for soil application, these emissions shall be neglected;

(b) Composted or co-composted, then these shall be treated as fresh waste with emissions estimated according to the procedure project emissions from composting ($PE_{COMP,y}$).

Leakage emission s are determined as follows:

$$LE_y = LE_{COMP,y} + LE_{AD,y} + LE_{RDF\_SB,y} \quad (27)$$

Where:

LE_y	=	Leakage emissions in the year y (tCO2e)
$LE_{COMP,y}$	=	Leakage emissions from composting or co-composting in year y (tCO2e)
$LE_{AD,y}$	=	Leakage emissions from anaerobic digester in year y (tCO2e)
$LE_{RDF\_SB,y}$	=	Leakage emissions associated with RDF/SB in year y (tCO2e)

This project is a MSW incineration project. All production activities do not involve composting or co-composting, emissions associated with RDF/SB, and anaerobic digestion process. Therefore, $LE_{COMP,y}$ = 0, $LE_{AD,y}$ = 0, $LE_{RDF\_SB,y}$ = 0. Leakage amount of this project LE_y = 0.

B6.1.4. Emissions Reduction

To calculate the emission reductions the project participant shall apply the following equation:

$$ER_y = BE_y - PE_y - LE_y \quad (28)$$

Where:

ER_y	=	Emissions reductions in year y (tCO2e)
BE_y	=	Baseline emissions in year y (tCO2e)
PE_y	=	Project emissions in the year y (tCO2e)
LE_y	=	Leakage emissions in year y (tCO2e)

If the sum of PE_y and LE_y is smaller than 1 per cent of BE_y in the first full operation year of a crediting period, the project participants may choose to assume a fixed percentage of 1 per cent for the sum of PE_y and LE_y for the remaining years of the crediting period.

In the case that overall negative emission reductions arise in a year, emission reductions are not issued to project participants for the year concerned and in subsequent years, until emission reductions from subsequent years have compensated the quantity of negative emission reductions from the year concerned.

B.6.2. Data and parameters fixed ex ante

Data / Parameter Table 1.

Data / Parameter:	φ_y
Methodology reference	ACM0022
Data unit	-
Description	Model correction factor to account for model uncertainties for year y.

<table>
<tr><td>Measured/calculated /default</td><td>Default</td></tr>
<tr><td>Data source</td><td>CDM TOOL04 “Methodological tool: Emissions from solid waste disposal sites”</td></tr>
<tr><td>Value(s) of monitored parameter</td><td>For baseline emissions: refer to the table below to identify the appropriate factor based on the application of the tool (A or B) and the climate where the SWDS is located.
<table><tr><td></td><td>Wet Climate</td><td>Dry Climate</td></tr><tr><td>Application A</td><td>0.75</td><td>0.75</td></tr><tr><td>Application B</td><td>0.85</td><td>0.80</td></tr></table>
The project is located in Bengbu, Anhui,China, the climate is wet, besides, the project is a MSW incineration project. According to the calculation tool, it belongs to application B, therefore the value adopted is 0.85.</td></tr>
<tr><td>Measurement/ Monitoring equipment (if applicable)</td><td>-</td></tr>
<tr><td>Measuring/reading/ recording frequency (if applicable)</td><td>-</td></tr>
<tr><td>Calculation method (if applicable)</td><td>-</td></tr>
<tr><td>QA/QC procedures</td><td>-</td></tr>
<tr><td>Purpose of data</td><td>Calculate the baseline emissions</td></tr>
<tr><td>Additional comments</td><td>-</td></tr>
</table>

Data / Parameter Table 2.

Data / Parameter:	OX
Methodology reference	ACM0022
Data unit	-
Description	Oxidation factor (reflecting the amount of methane from SWDS that is oxidized in the soil or other material covering the waste).
Measured/calculated /default	Default
Data source	2006 IPCC Guidelines for National Greenhouse Gas Emission Inventories, Volume 5, Chapter 3.
Value(s) of monitored parameter	0.1
Measurement/ Monitoring equipment (if	-

applicable)	
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the baseline emissions
Additional comments	-

Data / Parameter Table 3.

Data / Parameter:	F
Methodology reference	ACM0022
Data unit	-
Description	Fraction of methane in the SWDS gas (volume fraction).
Measured/calculated /default	Default
Data source	2006 IPCC Guidelines for National Greenhouse Gas Emission Inventories, Volume 5, Chapter 3.
Value(s) of monitored parameter	0.5
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the baseline emissions
Additional comments	-

Data / Parameter Table 4.

Data / Parameter:	$\mathrm{DOC}_{f,y}$
Methodology reference	ACM0022
Data unit	-

Description	Fraction of degradable organic carbon (DOC) that decomposes under the specific conditions occurring in the SWDS for year y (weight fraction).
Measured/calculated /default	Default
Data source	2006 IPCC Guidelines for National Greenhouse Gas Emission Inventories, Volume 5, Chapter 3.
Value(s) of monitored parameter	0.5
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the baseline emissions
Additional comments	-

Data / Parameter Table 5.

Data / Parameter:	MCF_y
Methodology reference	ACM0022
Data unit	-
Description	Methane correction factor for year y.
Measured/calculated /default	Default
Data source	2006 IPCC Guidelines for National Greenhouse Gas Emission Inventories, Volume 5, Chapter 3.
Value(s) of monitored parameter	1
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-

QA/QC procedures	-
Purpose of data	Calculate the baseline emissions
Additional comments	-

Data / Parameter Table 6.

Data / Parameter:	DOC_j
Methodology reference	ACM0022
Data unit	-
Description	Fraction of degradable organic carbon in the waste type j (weight fraction).
Measured/calculated /default	Default
Data source	2006 IPCC Guidelines for National Greenhouse Gas Emission Inventories, Volume 5, Table 2.4 and 2.5.
Value(s) of monitored parameter	For MSW projects, the values of degradable organic carbon in the waste type j is shown in the Table below:

Waste Type j	**DOC_j (%Wet basis)**
Wood and wood products	43
Pulp, paper and cardboard (not sludge)	40
Food, food waste, beverages and tobacco (not sludge)	15
textile	24
Garden, Yard and Park Waste	20
Glass, plastic, rubber leather, metal and other inert waste	0

Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the baseline emissions
Additional comments	-

Data / Parameter Table 7.

<table>
<tr><td>Data / Parameter:</td><td>k_j</td></tr>
<tr><td>Methodology reference</td><td>ACM0022</td></tr>
<tr><td>Data unit</td><td>1/yr</td></tr>
<tr><td>Description</td><td>Decay rate for the waste type j</td></tr>
<tr><td>Measured/calculated /default</td><td>Default</td></tr>
<tr><td>Data source</td><td>2006 IPCC Guidelines for National Greenhouse Gas Emission Inventories, Volume 5, Table 3.3.</td></tr>
<tr><td>Value(s) of monitored parameter</td><td>See decay rates for the waste type j in table below:
<table>
<tr><td colspan="2" rowspan="2">Waste type j</td><td colspan="2">northern temperate (MAT ≤ 20℃)</td><td colspan="2">Tropical (MAT ≤ 20℃)</td></tr>
<tr><td>Dry (MAP / PET < 1)</td><td>Wet (MAP / PET ＞ 1)</td><td>Dry (MAP ＜ 1000 mm)</td><td>Wet (MAP ＞ 1000 mm)</td></tr>
<tr><td rowspan="2">slow degradation</td><td>Pulp, paper and cardboard (not sludge), textiles</td><td>0.04</td><td>0.06</td><td>0.045</td><td>0.07</td></tr>
<tr><td>wood, wood products and straw</td><td>0.02</td><td>0.03</td><td>0.025</td><td>0.035</td></tr>
<tr><td>Moderate degradation</td><td>Other perishable garden give and park waste (non-food)</td><td>0.05</td><td>0.10</td><td>0.065</td><td>0.17</td></tr>
<tr><td>Rapid degradation</td><td>Food, food waste, sewage sludge, beverages, tobacco</td><td>0.06</td><td>0.185</td><td>0.085</td><td>0.40</td></tr>
</table>
Note: MAT is the abbreviation of mean annual temperature, MAP is the abbreviation of mean annual precipitation, PET is the abbreviation of Potential Evapotranspiration.

The project is located in Anhui, China, the mean annual temperature is 15.1℃，the mean annual precipitation is 900~1000mm, the annual potential evapotranspiration is a little bit less than precipitation. According to these value, the project meets the requirement of MAT ≤</td></tr>
</table>

	20℃, MAP / PET ＞ 1, so the value of the second column shall be determined which represent the wet northern temperate zone.
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the baseline emissions
Additional comments	-

Data / Parameter Table 8.

Data / Parameter:	GWP_{CH4}
Methodology reference	ACM0022
Data unit	-
Description	Global Warming Potential of methane.
Measured/calculated /default	Default
Data source	IPCC Assessment Report AR5
Value(s) of monitored parameter	28
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the baseline emissions
Additional comments	It will be updated according to the COP/MOP decision update.

Data / Parameter Table 9.

Data / Parameter:	$EF_{grid,OMsimple,y}$
Methodology reference	ACM0022
Data unit	tCO2/MWh
Description	Simple operating margin CO2 emission factor in year y.
Measured/calculated /default	Default
Data source	"2019 China Regional Power Grid Baseline Emission Factors"
Value(s) of monitored parameter	0.7921
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the baseline emissions
Additional comments	"2019 China Regional Power Grid Baseline Emission Factors" is a document issued by the Climate Change Department of the National Development and Reform Commission of China and is a reliable source of data.

Data / Parameter Table 10.

Data / Parameter:	$EF_{grid,BM,y}$
Methodology reference	ACM0022
Data unit	tCO2/MWh
Description	Build margin CO2 emission factor in year y.
Measured/calculated /default	Default
Data source	"2019 China Regional Power Grid Baseline Emission Factors"
Value(s) of monitored parameter	0.3870
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/	-

recording frequency (if applicable)	
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the baseline emissions
Additional comments	"2019 China Regional Power Grid Baseline Emission Factors" is a document issued by the Climate Change Department of the National Development and Reform Commission of China and is a reliable source of data.

Data / Parameter Table 11.

Data / Parameter:	ω_{OM}
Methodology reference	ACM0022
Data unit	-
Description	The weight of OM emission factor when calculating the combined marginal emission factor.
Measured/calculated /default	Default
Data source	CDM TOOL07 “Tool to calculate the emission factor for an electricity system”
Value(s) of monitored parameter	0.5
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the baseline emissions
Additional comments	This value is chosen according to the requirements of "Tool to calculate the emission factor for an electricity system".

Data / Parameter Table 12.

Data / Parameter:	ω_{BM}
Methodology reference	ACM0022
Data unit	-

Description	The weight of BM emission factor when calculating the combined marginal emission factor.
Measured/calculated /default	Default
Data source	CDM TOOL07 “Tool to calculate the emission factor for an electricity system”
Value(s) of monitored parameter	0.5
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the baseline emissions
Additional comments	This value is chosen according to the requirements of "Tool to calculate the emission factor for an electricity system".

Data / Parameter Table 13.

Data / Parameter:	$FCC_{j,y}$
Methodology reference	ACM0022
Data unit	%
Description	Fraction of total carbon content in waste type j in year y
Measured/calculated /default	Default
Data source	2006 IPCC Guidelines for National Greenhouse Gas Emission Inventoriesm, Volume 5, Chapter 2, Table 2.4.
Value(s) of monitored parameter	For MSW, different waste types have different default value of fraction of carbon content, shown in table below:

Waste Type j	The default, the mass spectrometry multiple reaction method is used. The default value used in this project is the maximum value of the range in Table 2.4 of IPCC 2006 Guidelines Volume 5 Chapter 2
Paper/Cardboard	50
Textile	50
Food Waste	50
Wood	54

	Garden and Park Waste	55
	Toilet Paper	90
	Rubber and Leather	67
	Plastic	85
	Metal	N/A
	Glass	N/A
	Other, inert garbage	5
Measurement/ Monitoring equipment (if applicable)	-	
Measuring/reading/ recording frequency (if applicable)	-	
Calculation method (if applicable)	-	
QA/QC procedures	-	
Purpose of data	Calculate the project emissions	
Additional comments	-	

Data / Parameter Table 14.

Data / Parameter:	$FFC_{j,y}$	
Methodology reference	ACM0022	
Data unit	%	
Description	Fraction of fossil carbon in total carbon content of waste type j in year y (weight fraction)	
Measured/calculated /default	Default	
Data source	2006 IPCC Guidelines for National Greenhouse Gas Emission Inventoriesm, Volume 5, Chapter 2, Table 2.4.	
Value(s) of monitored parameter	For MSW, the default FCC value of different waste types are:	
	Waste type j	The default, the mass spectrometry multiple reaction method is used. The default value used in this project is the maximum value of the range in Table 2.4 of IPCC 2006 Guidelines Volume 5 Chapter 2
	Paper/Cardboard	5
	Textile	50
	Food Waste	-
	Wood	-
	Garden and Park Waste	0

	Toilet Paper	10
	Rubber and Leather	20
	Plastic	100
	Metal	NA
	Glass	NA
	Other, inert garbage	100
Measurement/ Monitoring equipment (if applicable)	-	
Measuring/reading/ recording frequency (if applicable)	-	
Calculation method (if applicable)	-	
QA/QC procedures	-	
Purpose of data	Calculate the project emissions	
Additional comments	-	

Data / Parameter Table 15.

Data / Parameter:	$EF_{N2O,t}$
Methodology reference	ACM0022
Data unit	tN2O/t waste
Description	Emission factor for N2O associated with waste treatment process t
Measured/calculated /default	Default
Data source	2006 IPCC Guidelines for National Greenhouse Gas Emission Inventories, Volume 5, Chapter 5, Table 5.6.
Value(s) of monitored parameter	$1.21 \times 50 \times 10^{-6}$
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the project emissions

Additional comments	Values taken from 2006 IPCC Guidelines for National Greenhouse Gas Emission Inventories, Volume 5, Chapter 5, Table 5.6, which is a reliable source.

Data / Parameter Table 16.

Data / Parameter:	$EF_{CH4,t}$
Methodology reference	ACM0022
Data unit	tCH4/t waste
Description	Emission factor for CH4 associated with treatment process t.
Measured/calculated /default	Default
Data source	2006 IPCC Guidelines for National Greenhouse Gas Emission Inventories
Value(s) of monitored parameter	$1.21 \times 0.2 \times 10^{-6}$
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the project emissions
Additional comments	Value taken from 2006 IPCC Guidelines for National Greenhouse Gas Emission Inventories, which is a reliable source.

Data / Parameter Table 17.

Data / Parameter:	GWP_{N20}
Methodology reference	ACM0022
Data unit	-
Description	Global Warming Potential of nitrous oxide.
Measured/calculated /default	Default
Data source	IPCC Assessment Report AR5
Value(s) of monitored parameter	265
Measurement/ Monitoring	-

equipment (if applicable)	
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the project emissions
Additional comments	-

Data / Parameter Table 18.

Data / Parameter:	$\eta_{flare,m}$
Methodology reference	ACM0022
Data unit	-
Description	Flare efficiency in the minute m
Measured/calculated /default	Default
Data source	ACM0022
Value(s) of monitored parameter	90%
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the project emissions
Additional comments	-

Data / Parameter Table 19.

Data / Parameter:	B_o
Methodology reference	ACM0022
Data unit	tCH4/tCOD

Description	Maximum methane producing capacity, expressing the maximum amount of CH4 that can be produced from a given quantity of chemical oxygen demand.
Measured/calculated /default	Default
Data source	FSR
Value(s) of monitored parameter	0.25
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the project emissions
Additional comments	-

Data / Parameter Table 20.

Data / Parameter:	MCF_{ww}
Methodology reference	ACM0022
Data unit	Fraction
Description	Methane conversion factor.
Measured/calculated /default	Default
Data source	FSR
Value(s) of monitored parameter	0.8
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC	-

procedures	
Purpose of data	Calculate the project emissions
Additional comments	-

Data / Parameter Table 21.

Data / Parameter:	$P_{COD,y}$
Methodology reference	ACM0022
Data unit	tCOD/m3
Description	Methane conversion factor.
Measured/calculated /default	Default
Data source	FSR
Value(s) of monitored parameter	0.065
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the project emissions
Additional comments	-

B.6.3. Ex-ante calculation of emission reductions

B6.3.1. Baseline Emissions

$$BE_Y = \sum_t (BE_{CH4,t,y} + BE_{WW,t,y} + BE_{EN,t,y} + BE_{NG,t,y}) \times (1 - RATE_{compliance,t})$$

This project is a municipal solid waste incineration power generation project. Only the methane baseline emissions from SWDS and the baseline emissions related to power generation are considered. The baseline scenario does not include the treatment of wastewater and the use of natural gas, so that $BE_{WW,t,y}$ = 0. $BE_{NG,t,y}$ = 0.

In addition, since China's laws and regulations have no mandatory legal and regulatory requirements for municipal solid waste treatment, $\mathrm{RATE}_{\mathrm{compliance,t}}$ = 0.

Therefore, the calculation formula can be simplified as:

$$\mathrm{BE_Y} = \mathrm{BE_{CH4,y}} + \mathrm{BE_{EN,y}}$$

B6.3.1.1 Baseline emissions of methane generated in SWDS($\mathbf{BE_{CH4,t,y}}$)

According to the methodology, the methane baseline generated in SWDS can be calculated using the approved CDM tool "TOOL04: emissions from solid waste disposal sites" (version 08.0). According to the feasibility study report of the project, the estimated annual waste treatment capacity of the project is 441,650 tons. The distribution of waste types is shown in the table below:

Waste Type	Unit	Fraction	Waste Weight (t)
Food waste	tons	36.94%	163145.51
Paper	tons	25.95%	114608.175
Textiles	tons	8.24%	36391.96
Bamboo&Wood	tons	0.40%	1766.6
Plastics	tons	11.19%	49420.635
Rubber	tons	11.19%	49420.635
Glass-ceramics	tons	5.83%	25748.195
Metal	tons	0.26%	1148.29
Garden, yard and park waste	tons	0.00%	0
Others	tons	0.00%	0
Total	tons	100.00%	441,650

According to the characteristics of waste composition and B6 2. Parameter value in, the calculated methane baseline emissions $\mathrm{BE_{CH4,t,y}}$ from SWDS landfill in a given year under the baseline scenario are shown in the table below:

Year	$\mathrm{BE_{CH4,t,y}}$ (tCO2)	$\sum\mathrm{BE_{CH4,t,y}}$ (tCO2)
1	41891.66081	41891.66081
2	36843.20689	78734.8677
3	32529.89209	111264.7598
4	28834.38344	140099.1432
5	25658.76776	165757.911
6	22921.29486	188679.2058
7	20553.66949	209232.8753
8	18498.79932	227731.6747
9	16708.92216	244440.5968
10	15144.04832	259584.6451
Total	259584.6451	1667417.34

B6.3.1.2. Baseline emissions associated with electricity generation

The baseline emissions related to power generation in year y can be calculated using the approved CDM tool "TOOL05: baseline, project and / or leakage emissions from electricity consumption and monitoring of electricity generation".

$$BE_{EC,y} = \sum_{k} EC_{BL,k,y} \times EF_{EL,k,y} \times (1 + TDL_{k,y})$$

Where, according to the tool, when calculating the baseline emission$TDL_{k,y}$ = 3%。

$$EF_{EL,k,y} = EF_{grid,CM,y} = \omega_{OM} \times EF_{grid,OM,y} + \omega_{BM} \times EF_{grid,BM,y}$$

= 0.7921 × 50% + 0.387 × 50% = 0.58955 tCO2/MWh

According to the project feasibility study report, the average annual on grid power of the project is 144000MWh. Therefore, the annual values of baseline emissions of electricity generation are as follows:

Year	$BE_{EC,y}$ (tCO2)
1	87442.056
2	87442.056
3	87442.056
4	87442.056
5	87442.056
6	87442.056
7	87442.056
8	87442.056
9	87442.056
10	87442.056
Total	874420.56

The baseline emissions in the first crediting period are summarized as follows:

Year	BEy (tCO2e)
1	129333.7168
2	166176.9237
3	198706.8158
4	227541.1992
5	253199.967
6	276121.2618
7	296674.9313
8	315173.7307

9	331882.6528
10	347026.7011
Total	2541837.9

B6.3.2. Project Emissions

The project emissions of the project are:

$$PE_y = PE_{COMP,y} + PE_{AD,y} + PE_{GAS,y} + PE_{RDF\_SB,y} + PE_{INC,y}$$

This project is a domestic waste incineration project. The project activities do not include composting or co composting, anaerobic digestion and biogas combination, and emissions from gasification or RDF / SB. Therefore, $PE_{COMP,y} = 0$, $PE_{AD,y} = 0$, $PE_{GAS,y} = 0$, $PE_{RDF\_SB,y} = 0$.

So that the simplified equation is as follows:

$$PE_y = PE_{INC,y} = PE_{COM,INC,y} + PE_{EC,INC,y} + PE_{FC,INC,y} + PE_{ww,INC,y}$$

B6.3.2.1. Project emissions from combustion within the project boundary($PE_{COM,INC,y}$)

The total calculation formula of project emissions from combination within the project boundary is:

$$PE_{COM,C,y} = PE_{COM,CO2,c,y} + PE_{COM,CH4,N2O,c,y}$$

The calculation formula of $PE_{COM,CO2,c,y}$ is as follows:

$$PE_{COM,CO2,c,y} = EFF_{COM,c,y} \times \frac{44}{12} \times \sum_j Q_{j,c,y} \times FCC_{j,y} \times FFC_{j,y}$$

According to the waste types provided in the project feasibility study report, and from the 2006 IPCC Guidelines for National Greenhouse Gas Emission Inventories, the dry weight proportion of different types of waste is obtained, $FCC_{j,y}$ and $FFC_{j,y}$, After summary calculation, it can be obtained that $PE_{COM,CO2,c,y}$ = 88985.77 tCO2e.

The calculation formula of $PE_{COM,CH4,N2O,c,y}$is as follows:

$$PE_{COM\_CH4,N2O,c,y} = Q_{waste,c,y} \times (EF_{N2O,t} \times GWP_{N20} + EF_{CH4,t} \times GWP_{CH4})$$

According to the feasibility study report of the project, the average annual waste treatment capacity of the project is 441650 tons. The global warming potential of N2O and CH4 is 265 and 28 respectively according to IPCC AR5, the value of emission factor of N2O is $1.21 \times 50 \times 10^{-6}$, and the value of emission factor of CH4 is $1.21 \times 0.2 \times 10^{-6}$.

After calculation, $\mathrm{PE_{COM\_CH4,N2O,c,y}} = 7083.75\ \mathrm{tCO2e}$.

B6.3.2.2. Project emissions from electricity consumption ($\mathbf{PE_{EC,INC,y}}$)

The project will only use the power supply from the power grid in the emergency and maintenance stages. Therefore, under the normal activities of the project, the power input from the local power grid is estimated to be 0, i.e. $PE_{EC,INC,y}$ = 0. The power input from the power grid needs to be monitored, and its calculation formula is as follows:

$$PE_{EC,y} = \sum_{k} EC_{PJ,j,y} \times EF_{EL,j,y} \times (1 + TDL_{j,y})$$

B6.3.2.3. Project emissions from fossil fuel use ($\mathbf{PE_{EC,INC,y}}$)

The calculation formula of project emissions from fossil fuels is as follows:

$$PE_{FC,j,y} = \sum_{i} FC_{i,j,y} \times COEF_{i,y}$$

$$COEF_{i,y} = NCV_{i,y} \times EF_{CO2,i,y}$$

The project uses light diesel oil as ignition fuel and auxiliary fuel, and the annual consumption of light diesel oil is expected to be 360 tons. According to China Energy Statistics Yearbook 2014, the net calorific value of light diesel is 42.652 GJ / T and the CO2 emission factor is 0.0741 TC / GJ. Through calculation, $PE_{FC,j,y} = 360 \times 42.652 \times 0.0741 = 1137.78\ tCO2e$.

B6.3.2.4. Project emissions from wastewater discharge management ($\mathbf{PE_{ww,INC,y}}$)

According to the project feasibility study report and environmental assessment report, the main wastewater generated by the project activities is landfill leachate, and all leachate is treated and sprayed back to the incinerator for reuse. As anaerobic reaction is involved, methane is discharged during leachate treatment, and all methane is discharged back to the incinerator for incineration. When estimating in advance, the following formula shall be applied to calculate the resulting emissions:

$$PE_{flare,y} = Q_{ww,y} \times P_{COD,y} \times B_o \times MCF_{ww} \times (1 - \eta_{flare}) \times GWP_{CH4}$$

Data and default value applying to calculation					
$Q_{ww,y}$	$P_{COD,y}$	B_o	MCF_{ww}	η_{flare}	GWP_{CH4}

(m3/y)	(tCOD/m3)	(tCH4/tCOD)			(tCO2e/tCH4)
89425	0.065	0.25	0.8	0.9	28

Through calculation, $PE_{flare,y}$ =3255.07 tCO2e.

B6.3.3. Leakage(LE_y)

Leakage emission s are determined as follows:

$$\mathrm{LE_y} = \mathrm{LE_{COMP,y}} + \mathrm{LE_{AD,y}} + \mathrm{LE_{RDF\_SB,y}}$$

This project is a MSW incineration project. All production activities do not involve composting or co-composting, emissions associated with RDF/SB, and anaerobic digestion process. Therefore, $\mathrm{LE_{COMP,y}}$ = 0, $\mathrm{LE_{AD,y}}$ = 0, $\mathrm{LE_{RDF\_SB,y}}$ = 0. Leakage amount of this project $\mathrm{LE_y}$ = 0.

B6.3.4. Emission Reduction

The calculation formula of emission reduction is: $\mathrm{ER_y} = \mathrm{BE_y} - \mathrm{PE_y} - \mathrm{LE_y}$.

See B.6.4 for specific emission reduction values.

B.6.4. Summary of ex ante estimates of emission reductions

Year	Baseline emissions (t CO_2e)	Project emissions (t CO_2e)	Leakage (t CO_2e)	Emission reductions (t CO_2e)
10/11/2017 - 9/11/2018	129333.7168	100462.3695	0	28871.34729
10/11/2018 - 9/11/2019	166176.9237	100462.3695	0	65714.55418
10/11/2019 - 9/11/2020	198706.8158	100462.3695	0	98244.44627
10/11/2020 - 9/11/2021	227541.1992	100462.3695	0	127078.8297
10/11/2021 - 9/11/2022	253199.967	100462.3695	0	152737.5975
10/11/2022 - 9/11/2023	276121.2618	100462.3695	0	175658.8923
10/11/2023 - 9/11/2024	296674.9313	100462.3695	0	196212.5618
110/11/2024 -	315173.7307	100462.3695	0	214711.3611

9/11/20215				
10/11/2025 - 9/11/2026	331882.6528	100462.3695	0	231420.2833
10/11/2026 - 9/11/2027	347026.7011	100462.3695	0	246564.3316
Total	2541837.9	1004623.695	0	1537214.205
Total number of crediting years	10 years			
Annual average over the crediting period	254183.79	100462.37	0	153721.42

B.7. Monitoring plan

B.7.1. Data and parameters to be monitored

Data / Parameter Table 22.

Data / Parameter:	f_y
Methodology reference	ACM0022
Data unit	-
Description	Fraction of methane captured at the SWDS and flared, combusted or used in another manner that prevents the emissions of methane to the atmosphere in year y.
Measured/calculated /default	Default
Data source	CDM Methodology ACM0022
Value(s) of monitored parameter	0.2
Measurement/ Monitoring equipment (if applicable)	-
Measuring/reading/ recording frequency (if applicable)	-
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the baseline emissions
Additional	China's mandatory regulations do not specify the amount or percentage

comments	of LFG that should be disposed of, but require the installation of a system to capture and incinerate LFG, so fy = 0.2.

Data / Parameter Table 23.

Data / Parameter:	$EFF_{COM,c,y}$
Methodology reference	ACM0022
Data unit	%
Description	Combustion efficiency of combustor c in year y.
Measured/calculated /default	Measured
Data source	Specific data related to project activities.
Value(s) of monitored parameter	100%
Measurement/ Monitoring equipment	Measured according to industry standards by a qualified third party.
Measuring/reading/ recording frequency	Each year
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the project emissions
Additional comments	-

Data / Parameter Table 24.

Data / Parameter:	$P_{n,j,y}/P_{n,j,x}$
Methodology reference	ACM0022
Data unit	%
Description	The proportion of waste type j in the total waste in sample n collected in year y / The proportion of waste type j in the total waste in sample n collected in year x
Measured/calculated /default	Measured
Data source	Monitoring data from project participants.
Value(s) of monitored parameter	According to the feasibility study report of the project, the characteristics of the waste composition of the project are as follows, and the test results of the actual samples will be used for calculation during monitoring processes.

Waste Type	Unit	Fraction	Waste Weight
Food Waste	ton	36.94%	163145.51

	Paper	ton	25.95%	114608.175
	Textile	ton	8.24%	36391.96
	Wood and Bamboo	ton	0.40%	1766.6
	Plastic	ton	11.19%	49420.635
	Rubber	ton	11.19%	49420.635
	Glass	ton	5.83%	25748.195
	Metal	ton	0.26%	1148.29
	Garden, Yard and Park Waste	ton	0.00%	0
	Others	ton	0.00%	0
	Total	ton	100.00%	441,650
Measurement/ Monitoring equipment	Sample monitoring shall be carried out in accordance with China's national standards.			
Measuring/reading/ recording frequency	Monitoring three samples each three months, using the average value of them as the effective value of the year y.			
Calculation method (if applicable)	-			
QA/QC procedures	-			
Purpose of data	Calculate the baseline emissions and the project emissions.			
Additional comments	-			

Data / Parameter Table 25.

Data / Parameter:	$EG_{t,y}$
Methodology reference	ACM0022
Data unit	MWh
Description	Electricity generated by waste treatment method t in year y that is input to the grid or replaces fossil fuel power generation and/or cogeneration captive power plants.
Measured/calculated /default	Measured
Data source	Measured value of electricity meter.
Value(s) of monitored parameter	144,000
Measurement/ Monitoring equipment	By carrying out electric energy measurement at the demarcation point of property rights, a 0.2s-level electric energy meter is installed at the outlet switch of the 35kV grid line for measurement.
Measuring/reading/ recording frequency	Long-term continuous monitoring, sum up data at least once a year.
Calculation method (if applicable)	-

QA/QC procedures	The electricity meter is regularly checked according to industry standards, and the on-grid electricity measured by the electricity meter must be regularly checked with the on-grid electricity settlement document provided by the power grid.
Purpose of data	Calculate the baseline emissions.
Additional comments	-

Data / Parameter Table 26.

Data / Parameter:	$TDL_{k,y}$,
Methodology reference	ACM0022
Data unit	-
Description	Average technical transmission loss of power supply to power source k in year y.
Measured/calculated /default	calculated
Data source	TOOL05: “Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation” (Version 03.0).
Value(s) of monitored parameter	3%
Measurement/ Monitoring equipment	-
Measuring/reading/ recording frequency	Each year. The data of the latest year can be used if the data of recent year is missing (no more than five years).
Calculation method (if applicable)	$TDL_{k,y}$, = (Transmitting outgoing power - actual grid power)/actual grid power
QA/QC procedures	-
Purpose of data	Calculate the baseline emissions and the project emissions
Additional comments	-

Data / Parameter Table 27.

Data / Parameter:	$EC_{t,y}$
Methodology reference	ACM0022
Data unit	MWh
Description	On-site fossil fuel power plants or electricity input from the grid consumed by waste disposal method t in year y.
Measured/calculated /default	Measured
Data source	Measured values of electricity meters.
Value(s) of	0

monitored parameter	
Measurement/ Monitoring equipment	The electricity generated by the project is sent to the grid after providing electricity for the demand of the whole plant, so there is no or little consumption of electricity from the grid. The electricity input from the grid is measured by installing a two-way meter at the factory. During the monitoring process, the electricity consumption of all activities related to the treatment method within the project boundary must be monitored.
Measuring/reading/ recording frequency	Monitoring when electricity demand is generated (electricity from the grid is only required when the project is not functioning properly or during maintenance process).
Calculation method (if applicable)	-
QA/QC procedures	The meter is regularly calibrated according to industry standards. The electricity consumption obtained by the electricity meter should be checked regularly with the on-grid electricity settlement documents provided by the power grid.
Purpose of data	Calculate the project emissions
Additional comments	This parameter should only be used to calculate project emissions from electricity consumption due to waste disposal method t using TOOL05: “Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation” (Version 03.0). The electricity consumption of the project activity itself is not included. If there is electricity consumption by the project itself, RDF/SB combustion or incineration, the relevant emissions can be considered in "Project emissions from incineration".

Data / Parameter Table 28.

Data / Parameter:	$FC_{i,j,y}$
Methodology reference	ACM0022
Data unit	t/year
Description	Is the quantity of fuel type i combusted in process j during the year y
Measured/calculated /default	measured
Data source	Monitored and measured in the project site.
Value(s) of monitored parameter	360

Measurement/ Monitoring equipment	-
Measuring/reading/ recording frequency	Measuring when consumption happens.
Calculation method (if applicable)	-
QA/QC procedures	The amount of auxiliary fuel and ignition fuel should be checked with the raw material account.
Purpose of data	Calculate the project emissions
Additional comments	-

Data / Parameter Table 29.

Data / Parameter:	$NCV_{i,y}$
Methodology reference	ACM0022
Data unit	MJ/kg
Description	Is the weighted average net calorific value of the fuel type i in year y
Measured/calculated /default	default
Data source	"China Energy Statistical Yearbook"
Value(s) of monitored parameter	42.652
Measurement/ Monitoring equipment	-
Measuring/reading/ recording frequency	-
Calculation method (if applicable)	-
QA/QC procedures	This value comes from the "China Energy Statistical Yearbook" and needs to be updated according to the update of the yearbook.
Purpose of data	Calculate the project emissions.
Additional comments	-

Data / Parameter Table 30.

Data / Parameter:	$EF_{CO2,i,y}$
Methodology reference	ACM0022
Data unit	tCO2/GJ
Description	Is the weighted average CO2 emission factor of fuel type i in year y
Measured/calculated /default	default

Data source	"China Energy Statistical Yearbook"
Value(s) of monitored parameter	0.0741
Measurement/ Monitoring equipment	-
Measuring/reading/ recording frequency	-
Calculation method (if applicable)	-
QA/QC procedures	This value comes from the "China Energy Statistical Yearbook" and needs to be updated according to the update of the yearbook.
Purpose of data	Calculate the project emissions
Additional comments	-

Data / Parameter Table 31.

Data / Parameter:	Z_y/Z_x
Methodology reference	ACM0022
Data unit	-
Description	Number of samples collected in year y
Measured/calculated /default	Measured
Data source	Project participants
Value(s) of monitored parameter	
Measurement/ Monitoring equipment	-
Measuring/reading/ recording frequency	Sampling and monitoring according to frequency, at least three samples every three months, and aggregated once a year.
Calculation method (if applicable)	-
QA/QC procedures	-
Purpose of data	Calculate the baseline emissions and the project emissions.
Additional comments	This data is not used for ex ante estimates. Only monitored ex post and used for calculations during the crediting period.

Data / Parameter Table 32.

Data / Parameter:	$EG_{INC,FF,y}$
Methodology reference	ACM0022

Data unit	GJ
Description	The energy produced in incinerators from the addition of auxiliary fossil fuels.
Measured/calculated /default	Calculated
Data source	Monitoring of the project activities
Value(s) of monitored parameter	15,354.72GJ
Measurement/ Monitoring equipment	-
Measuring/reading/ recording frequency	Each year
Calculation method (if applicable)	According to the feasibility study report of the project, the annual light diesel consumption of the project is 360 tons. According to the "China Energy Statistical Yearbook", the net calorific value of diesel is 42.652MJ/kg. Therefore, the energy produced by the auxiliary fuel is $360 \times 42.652 = 15{,}354.72\text{GJ}$
QA/QC procedures	-
Purpose of data	This parameter is used to judge whether the energy generated by the auxiliary fossil fuel used by the incinerator exceeds 50% of the total energy generated by the incinerator (the requirement is not to exceed).
Additional comments	-

Data / Parameter Table 33.

Data / Parameter:	Q_{waste} （W_x）
Methodology reference	ACM0022
Data unit	t
Description	Amount of solid waste disposed or prevented from disposal in the SWDS in the year x.
Measured/calculated /default	Measured
Data source	Monitoring data of project participants.
Value(s) of monitored parameter	441,650
Measurement/ Monitoring equipment	Weighing by means of a weighbridge. Two weighbridges are set at the entrance and exit of SWDS to measure the weight of the full vehicle before entering the site and the weight of the empty vehicle when leaving the site respectively. The weight difference is the amount of garbage transported by the vehicle.
Measuring/reading/ recording frequency	Measure and record by number of trips, and summarize at least once a year.

Calculation method (if applicable)	On a one-year basis, calculate the total amount of all fresh waste disposed of during that year.
QA/QC procedures	The accuracy of the floor scale is $\pm 0.05\%$. In order to ensure the accuracy, the floor scale will be calibrated once a year and maintained regularly.
Purpose of data	Calculate the baseline emissions and the project emissions.
Additional comments	-

Data / Parameter Table 34.

Data / Parameter:	$V_{t,wb,n}$
Methodology reference	ACM0022
Data unit	m³ wet gas/h
Description	Volumetric flow of the gaseous stream in time interval t on a wet basis at normal conditions.
Measured/calculated /default	Measured
Data source	Monitoring data of project participants.
Value(s) of monitored parameter	
Measurement/ Monitoring equipment	Recording was performed by installing a flow recording instrument on the piping of the methane collection unit.
Measuring/reading/ recording frequency	Long-term normal monitoring during project activities, regular statistics and records.
Calculation method (if applicable)	-
QA/QC procedures	
Purpose of data	Calculate the the project emissions.
Additional comments	-

Data / Parameter Table 35.

Data / Parameter:	$v_{i,t,wb}$
Methodology reference	ACM0022
Data unit	m³ gas i/m³ wet gas
Description	Volumetric fraction of greenhouse gas i in the gaseous stream in time interval t on a wet basis.
Measured/calculated /default	Measured
Data source	Monitoring data of project participants.

Value(s) of monitored parameter	
Measurement/ Monitoring equipment	Detected by sampling on the piping of the methane collection unit.
Measuring/reading/ recording frequency	Regular monitoring, regular statistics and data recording.
Calculation method (if applicable)	-
QA/QC procedures	
Purpose of data	Calculate the the project emissions.
Additional comments	-

Data / Parameter Table 36.

Data / Parameter:	P_n
Methodology reference	ACM0022
Data unit	Pa
Description	Absolute pressure at normal conditions.
Measured/calculated /default	Measured
Data source	Monitoring data of project participants.
Value(s) of monitored parameter	
Measurement/ Monitoring equipment	Use a barometer to record the air pressure in the pipes of the methane collection unit.
Measuring/reading/ recording frequency	Regular monitoring, regular statistics and data recording.
Calculation method (if applicable)	-
QA/QC procedures	Check the accuracy of the barometer regularly.
Purpose of data	Calculate the the project emissions.
Additional comments	-

Data / Parameter Table 37.

Data / Parameter:	T_n
Methodology	ACM0022

reference	
Data unit	K
Description	Temperature at normal conditions.
Measured/calculated /default	Measured
Data source	Monitoring data of project participants.
Value(s) of monitored parameter	
Measurement/ Monitoring equipment	Use a thermometer to record the temperature in the pipes of the methane collection unit.
Measuring/reading/ recording frequency	Regular monitoring, regular statistics and data recording.
Calculation method (if applicable)	-
QA/QC procedures	Check the accuracy of the thermometer regularly.
Purpose of data	Calculate the the project emissions.
Additional comments	-

B.7.2. Monitoring-program of risk management actions

N/A.

There is no harmful environmental or social impacts idntified during the risk assessment of the project activities.

B.7.3. Sampling plan

N/A.

The project does not involve sampling plan.

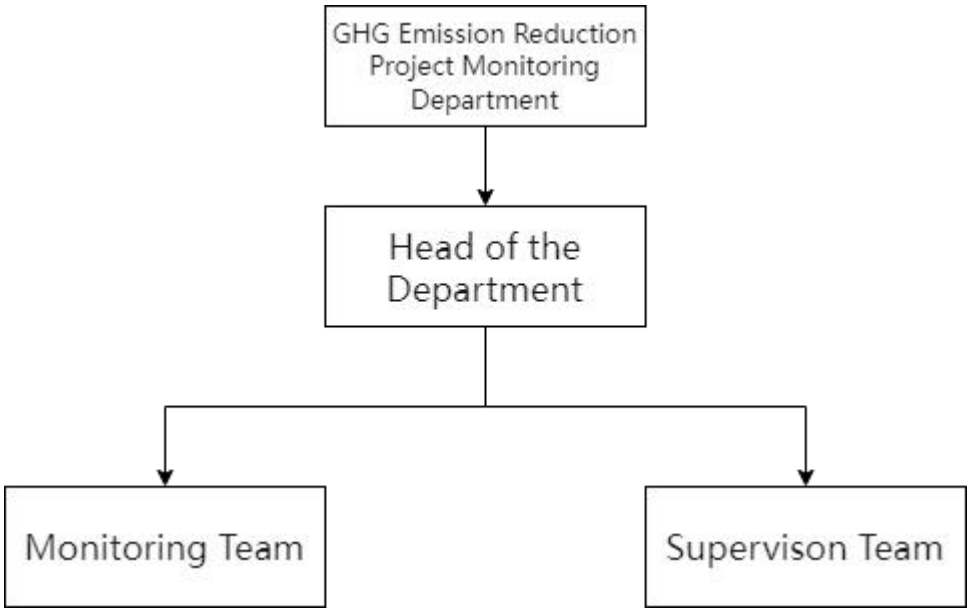
B.7.4. Other elements of the monitoring plan

B7.4.1. Purpose of monitoring

The purpose of monitoring is primarily to monitor the data used in the calculation of the actual emission reductions for the projects covered in B.7.1.

B7.4.2. Monitoring body

In order to monitor the project's emission reductions and any possible leakage, a dedicated department will be established and designate professional staff responsible for all relevant matters, including monitoring of emission reductions, data collection and archiving, quality control, quality evaluation and approval. The organization structure of the GHG Emission Reduction Project Monitoring Department is shown below:



The responsibilities of the different positions are briefly described below.

Head: who is responsible for the proper functioning of the GHG Emission Reduction Project Monitoring Department and manages all matters related to monitoring activities.

Monitoring team: according to the monitoring plan, responsible for the concrete implementation of the monitoring work as well as the collection and archiving of data.

Supervision Team: According to the monitoring plan, responsible for auditing the work of the monitoring positions and carrying out work related to quality control.

B7.4.3. Monitoring content

The following contents need to be monitored for this project:

1. Electricity monitoring

The project will install two bi-directional meters on the grid-connected side of the project to measure the net output of the project as well as the down-grid power from the power station. The data

measured by meter 2 will be used as a reference in the event of a fault in meter 1. The net output and off-grid power will be based on the meter readings and the power statement will be used for verification purposes.

The project will also install electricity meters on the generator side of the project to measure the total incineration power generated by the project activities for waste incineration. The project's self-consumption electricity is determined by subtracting the final on-grid electricity from the total electricity generation.

2. Waste monitoring

The amount of waste is monitored using automatic continuous measurement and recording by weighbridge and monthly statistics. The statement of waste disposal charges is used for cross-checking.

The composition and proportion of waste is monitored in accordance with the relevant national standards, at the waste storage point.

3. Diesel consumption monitoring

Diesel consumption is cross-checked against fuel purchase lists and energy balance sheets, the actual consumption is also monitored by a flow meter before being fed into the incinerator.

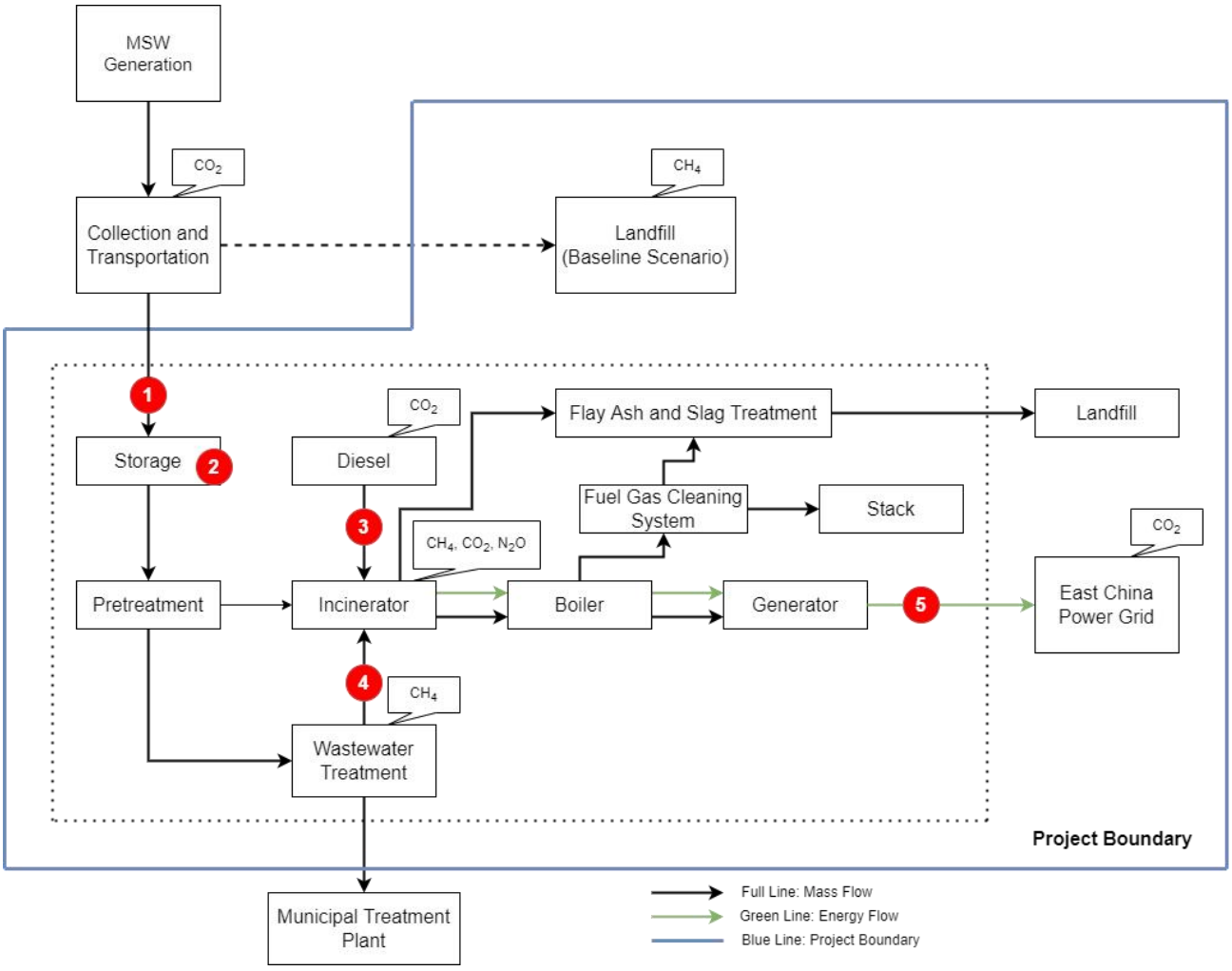
4. Methane from wastewater treatment monitoring

The anaerobic treatment of high-concentration wastewater in the project produces methane emissions. The project is designed to discharge back into the incinerator for incineration treatment. Therefore, in order to determine the total amount of methane produced by wastewater treatment, metering devices need to be installed on the pipeline to monitor the methane gas flow rate, humidity and methane ratio.

5. Policy and default value monitoring

In the project emission reduction calculation there are some values using the calculation methods and default values provided by government specification documents, the monitoring department should pay long-term attention to whether the policy documents and default value data produce updates or changes.

The monitoring positions of different types of monitoring data are shown in the following figure:



Monitoring point 1: By setting up weighbridges at the entrance and exit of the project site, the difference between the entry weight and the exit weight of garbage trucks is measured for a long time, and the total amount of MSW handled by the project activities is determined through monitoring.

Monitoring point 2: The waste is sampled and tested at the MSW storage point to determine the actual garbage composition.

Monitoring point 3: The usage of light diesel oil as ignition fuel and auxiliary fuel is measured by flow meter.

Monitoring point 4: The methane produced by the anaerobic treatment in the wastewater treatment process will be collected and discharged back to the incinerator for incineration. By designing the metering equipment on the pipeline, the flow rate, humidity and methane ratio of the methane gas flow generated will be monitored.

Monitoring point 5: Install electricity meters on the generator side of the project to measure the electricity generated by the project activities, and install electricity meters on the grid-connected side to measure the actual on-grid and off-grid electricity of the project activities.

B7.4.4. Data recording

1. The monitoring team is responsible for data collection and recording, all monitoring data are recorded on a monthly basis, and all electronic or paper material should be kept until two years after the end of the crediting period.

2. The monitoring department and the grid company take readings from monitoring instruments (e.g. meters, flow meters, etc.) and record the results on a fixed date each month, and reconcile the readings.

3. The grid company provides the values for actual on-grid and off-grid electricity: on-grid electricity is provided by the project to the grid company with sales records, and off-grid electricity is provided by the grid company to the owner with sales records.

4. The project provides the verifier of the verification agency with copies of the meter reading records and electricity sales records, meter calibration reports and other documents.

B7.4.5. Calibration

The project should ask a third party monitoring agency to perform regular calibration of all monitoring equipment designed for the project once a year.

B7.4.6. Data management

Monitoring data should be archived electronically and in paper form at the end of each month. The project is also required to maintain invoices for electricity sales and purchases. All data and information in paper form will be archived by the project and at least one copy of all material will be kept for at least two years after the crediting period.

B7.4.7. Monitoring reports

The project owner is required to submit regular monitoring reports that comply with the provisions and requirements of methodology ACM0022 for GCC projects. The monitoring report must include the monitoring plan, progress in the implementation of the monitoring report for a given year, a report of the results and data, and the calculation of emission reductions for the current time period.

Section C. Start date, crediting period type and duration

C.1. Start date of the Project Activity

The start date of project activity is 10/11/2017, when the project started operation.

C.2. Expected operational lifetime of the Project Activity

The operational lifetime of the project is about 30 years as per the license issued (Including the construction period).

C.3. Crediting period of the Project Activity

C.3.1. Fixed crediting period

The crediting period is fixed as 10 years.

C.3.2. Start date of the crediting period

The start date of crediting period is 10/11/2017, which is when the project is integrated into the grid and begins to provide electricity.

C.3.3. Duration of the crediting period

The first crediting period of the project is between10/11/2017 and 09/11/2027.

Section D. Environmental impacts

D.1. Analysis of environmental impacts

The environmental impact assessment report of the project was completed by Nanjing Normal University in December 2015. The environmental impact assessment report was approved by Bengbu Environmental Protection Bureau on 1 February 2016. The monitoring behaviors in the EIA report was entrusted to qualified third-party institutions Nanjing Jiyue Environmental Testing Co. and Jiangsu Liwei Testing Technology Co.

The environmental impact assessment report concludes that the construction of the project is feasible from the environmental point of view, subject to the implementation of various pollution prevention and control measures during the construction and production operation of the project.

The evaluation team has carefully assessed the potential risks of the project and concluded that the project requires the necessary control and protection measures to achieve low environmental impact risk criteria.

The main environmental impacts of the project derived from the assessment are as follows：

D1.1. Atmospheric environmental impact

Due to the complexity, diversity and heterogeneity of the composition of MSW waste, many different chemical reactions occur during the incineration process. The generated flue gas also contains other atmospheric pollutants that are harmful to the environment in addition to the air and the generated CO2. There are three main types: incineration flue gases (including acidic components, soot, heavy metals, dioxins, ammonia), dusty waste gases, and malodorous gases.

D1.2. Water environmental impact

According to the engineering analysis, the wastewater during the operation period of the project is mainly domestic wastewater generated by the staff, laboratory wastewater, landfill leachate, and wastewater for washing of ground, equipment, sewage ditch, garbage discharge area, etc. .

D1.3. Sound environmental impact

According to the results of the engineering analysis, it can be seen that the noise sources during the operation of the project are mainly from boiler rooms, turbine rooms and other ancillary facilities. The main noise-generating equipment includes steam turbines, generators, cooling towers, pumps and fans, etc.

D1.4. Solid waste environmental impact

The solid waste generated by the project works mainly includes incinerator slag, fly ash, sludge from waste water treatment, waste oil, waste bags consumed by bag filter, waste membrane

consumed in leachate treatment, domestic waste generated by workers, waste activated carbon consumed by smelly activities, etc.

D.2. Environmental impact assessment

As mentioned in D.1., the EIA report for the project was prepared by Nanjing Normal University in December 2015 and was approved by Bengbu Environmental Protection Bureau on 1 February 2016. During the EIA process, control and protection measures for the environmental impacts caused by the project activities were identified and used for the specific implementation of the project activities. The project was able to meet the criteria of low risk to the environment through the achievement of the following assessment conclusions and requirements:

D2.1. Atmospheric environmental impact assessment

The flue gas purification system of this project adopts the combination flue gas purification process of SNCR furnace denitrification (ammonia) + mechanical rotary spray drying purification tower + dry slaked lime spraying + activated carbon adsorption + bag filter for dust removal. The specific flue gas purification methods are as follows: the furnace denitrification system uses a selective non-catalytic reduction (SNCR) process to reduce nitrogen oxides to nitrogen; the acid gases are removed using an atomised slurry of slaked lime in the purification tower; the acid gases, metals and dioxins are removed from the flue gas using lime powder and activated carbon; the particulate pollutants (including fine dust particles, particles of neutraliser and de-acidification reaction products, particles of activated carbon adsorbed with dioxins and heavy metals, etc.) are adsorbed on the filter layer of bag filter and then removed by vibration, airflow backwash or pulsation flushing.

The project also takes measures to reduce odour production and prevent odour escape into account. The specific measures are that during normal operation of the incinerator, the odour gas is fed into the incinerator as combustion air. When the incinerator is shut down for maintenance, the odour gas in the waste pond is sent to an activated carbon adsorption unit for purification and treatment. The project also uses other measures such as enclosed waste transporters, air curtain doors at the inlet and outlet of the discharge platform, frequent turning of waste to reduce the chance of anaerobic fermentation, regular cleaning and confined waste storage pits.

D2.2. Water environmental impact assessment

The wastewater treatment system of the project activities consists of three parts, one is the low-concentration wastewater treatment system, which mainly collects domestic sewage, laboratory wastewater, equipment backwash water and ground flushing water unrelated to waste incineration activities. The wastewater treated by this system has a low degree of pollution and is directly discharged to the Yangtaizi Sewage Treatment Plant in Bengbu City.

The second is the cleaning wastewater treatment system, which mainly collects the washing water of garbage trucks, approach bridges, weighbridges and initial rainwater. The wastewater is reused after treatment. The third is the high-concentration wastewater treatment system, which mainly collects the washing wastewater from the garbage discharge area, sewage ditch flushing waste water and landfill leachate. Those waste water is reused after treatment.

D2.3. Sound environmental impact assessment

In engineering design, according to the characteristics of each noise source and its site conditions, noise reduction and sound insulation measures are taken for each noise source to reduce the impact of project noise on the external environment, so that the noise generated by the project has no obvious impact on the surrounding environment.

D2.4. Solid waste environmental impact assessment

The disposal of solid waste in this project activity is as follows: slag is recycled as building material. Fly ash adopts chelating agent and cement stabilization technology to avoid harmful substances in fly ash from affecting the environment. Waste engine oil, waste activated carbon and waste cloth bags are entrusted to qualified units for treatment. The sludge generated from wastewater treatment and domestic waste are discharged into the incineration system for treatment. After the above-mentioned solid wastes are disposed of according to the above-mentioned measures, they may not have negative impacts on the surrounding environments and human bodies, nor cause secondary pollution.

D2.5. Conclusion of environmental impact assessment

The main conclusions of the EIA report are as follows:

The report concluded that the construction of this project is conducive to the realization of harmlessness, reduction and recycling of MSW in Bengbu City, and is a way to solve the problem of increasing MSW treatment demand in Bengbu City.

The construction and development of this project inevitably have certain impacts on the atmospheric environment, water environment and acoustic environment. However, the production process adopted by the project meets the requirements of clean production. Under the premise of adopting corresponding pollution prevention and control measures, all pollutants can be discharged in accordance with the standards, the main pollutants discharged can meet the governance requirements, and the original functional level of regional environmental quality will not be affected.

In conclusion, on the premise that the project design and various environmental protection measures proposed in the EIA are implemented, and the project has obtained the understanding and support of the surrounding public, from the perspective of environmental protection, the construction of this project is environmentally feasible.

Section E. Environmental and social safeguards

E.1. Environmental safeguards

Impact of Project Activity on		**Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards**									**Project Owner's Conclusion**	
		Description of Impact *(both positive and negative)*	**Legal requirement / Limit**	**Do-No-Harm Risk Assessment**			**Risk Mitigation Action Plans**		**Do-No-Harm Residual Risk Assessment**		**Self-Declaration**	
				Not Applicable *(No actions required)*	**Harmless** *(No actions required)*	**Harmful** *(Actions required)*	**Operational Controls**	**Program of Risk Management Actions**	**Re-evaluate Risks**	**Monitoring**	**Explanation of Conclusion**	**The Project Activity will not cause any harm**
Environmental impacts on the identified categories[23] indicated below.	*Indicators for environmental impacts*	*Describe anticipated environmental impacts, both positive and negative from all sources (stationary and mobile), that may result from the Project Activity, within and outside the project boundary, over which the Project Owner(s) has control, and beyond what would reasonably be expected to occur in the absence of the Project Activity.*	*Describe the applicable national regulatory requirements /legal limits related to the identified risks of environmental impacts.*	*If no environmental impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as* ***Not Applicable*** *(No actions required)*	*If environmental impacts are anticipated, but are expected to be in compliance with applicable national regulatory requirements/ below the legal limits, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as* ***Harmless*** *(No actions required)*	*If environmental impacts are anticipated that will not be in compliance with the applicable national regulatory requirements or are likely to exceed legal limits, then the Project Activity is likely to cause harm (may be un-safe) and shall be indicated as* ***Harmful*** *(Actions required).*	*Describe the operational controls and best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as* ***Harmful****.*	*Describe the Program of Risk Management Actions (refer to Table 3), focusing on additional actions (e.g., installation of pollution control equipment) that will be adopted to reduce the risk of impacts that have been identified as* ***Harmful****.*	*Re-evaluate risks after Risk Mitigation Action Plans have been developed (refer to previous two columns) for impacts that have been identified as Harmful. Indicate whether the risks have been eliminated or reduced and, where appropriate, indicate them as* ***Harmless*** *(No actions required)*	*Describe the monitoring approach and the parameters to be monitored for each impact that has been identified as Harmful and described in the PSF (refer to Table 3).*	*Describe how the Project Owner has concluded that the Project Activity is likely to achieve the identified Risk Mitigation Action Plan targets for managing risks to levels that are unlikely to cause any harm.*	*Confirm that the Project Activity risks of negative environmental impacts are expected to be managed to levels that are unlikely to cause any harm (Mark +1 for* ***Yes*** *or and -1 for* ***No****)*
Environmental Safeguards												
Environment *- Air*	*SO_x emissions*	Project activities emit such pollutants. The project has designed reasonable treatment methods to reduce the discharge of	The annual average concentration limit of SO2 in the ambient air where the project is located is 0.06 mg/m3.		Harmless		N/A	N/A	N/A	N/A		+1

[23] sourced from the CDM SD Tool and the sample reports are available (https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx)

		such pollutants. After treatment, the project's discharge can meet the requirements of China's standards	This value comes from the secondary standard of "Ambient Air Quality Standard" (GB3095-2012)[24]. The daily average emission of the project is limited to 80mg/Nm3, which comes from the he Pollution Control Standard for Domestic Waste Incineration tion (GB18485-2014).									
	NO_x emissions	Project activities emit such pollutants. The project has designed reasonable treatment methods to reduce the discharge of such pollutants. After treatment, the project's discharge can meet the requirements of China's standards	The annual average concentration limit of NO2 is 0.04mg/m3. This value comes from the secondary standard of "Ambient Air Quality Standard" (GB3095-2012). The daily average NOx emission of the project is limited to 250mg/Nm 3, which comes from the		Harmless		N/A	N/A	N/A	N/A		+1

			Pollution Control Standard for Domestic Waste Incineration (GB18485-2014).									
	CO_2 emissions	Project activities emit such pollutants. However, carbon dioxide emissions are unavoidable when treating MSW, the project activities reduces the methane emissions during the waste disposal processes, which can be converted to equivalent CO2 emission reductions.	There is no such related requirements or limits	N/A			N/A	N/A	N/A	N/A		
	CO emissions	Project activities emit such pollutants. The project has designed reasonable treatment methods to reduce the discharge of such pollutants. After treatment, the project's discharge can meet the requirements of China's standards	The average daily CO emission of the project is limited to 80mg/Nm3, which is from the Pollution Control Standard for Domestic Waste Incineration (GB18485-2014).		Harmless		N/A	N/A	N/A	N/A		+1

	Suspended particulate matter (SPM) emissions	Project activities emit such pollutants. The project has designed reasonable treatment methods to reduce the discharge of such pollutants. After treatment, the project's discharge can meet the requirements of China's standards	The annual average concentration limit of PM10 in the ambient air of the project site is 0.07 mg/m3. This value comes from the secondary standard of "Ambient Air Quality Standard" (GB3095-2012).		Harmless		N/A	N/A	N/A	N/A		+1
	Fly ash emissions	Fly ash is a hazardous solid waste. This project uses cement and chelating agent as curing material to stabilize harmful substances in fly ash. After treatment, the project's discharge can meet regulations' requirements.	The treatment method of fly ash generated by project activities comply with the regulations of "Technical Policy for Hazardous Waste Pollution Prevention and Control" (SEPA [2001] No. 199) and "Standards for Pollution Control of Domestic Waste Landfills" (GB16889-2008).		Harmless		N/A	N/A	N/A	N/A		+1
	Non-Methane Volatile Organic Compounds (NMVOCs)	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	

	Odor emissions	Project activities emit such pollutants. The project has designed reasonable treatment methods to reduce the discharge of such pollutants. After treatment, the project's discharge can meet the requirements of China's standards	Comply with the Secondary Standard for New Renovation and Expansion Projects of Odor pollutants in the factory boundary standard value of "Emission Standard of Odor Pollutants" (GB14554-93)[25].		Harmless		N/A	N/A	N/A	N/A		+1
	Noise Pollution	The project generates noise during the construction period, and also generate noise due to project activities such as garbage transportation and incineration during the operation period. After the noise reduction steps, the project's noise emissions meet the requirement of China's standards.	The acoustic environmen t quality standard limit of the project site is 60dB(A) during the day and 50dB(A) at night. This value comes from Class 2 standard in "Acoustic Environmen t Quality Standard" (GB3096-2008). In addition, the noise during the construction period of the project shall comply with		Harmless		N/A	N/A	N/A	N/A		+1

25

			the requirements of the "Emission Standard for Environmental Noise at the Boundary of Construction Sites" (GB 12523-2011), and the noise emission at the boundary during the operation period shall comply with the requirements of class 2 in the "Emission Standard for Environmental Noise at the Boundary of Industrial Enterprises" (GB12348-2008).									
	Dioxin emissions	Project activities emit such pollutants. The project has designed reasonable treatment methods to reduce the discharge of such pollutants. After treatment, the project's discharge can meet the requirements of China's standards	The annual average concentration limit of dioxins in the ambient air of the project site is 0.6TEQpg/m3. This value comes from the environmental standards established by the Central Environmen		Harmless		N/A	N/A	N/A	N/A		+1

			tal Review Committee of the Japan Environmen t Agency.									
Environment *- Land*	*Solid waste Pollution from Plastics*	There is no solid waste pollution from plastics generated at the project site at the end stage of project activities.	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Solid waste Pollution from Hazardous wastes	There is no solid waste pollution from hazardous wastes generated at the project site at the end stage of project activities.	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Solid waste Pollution from Bio-medical wastes	There is no solid waste pollution from bio-medical wastes generated at the project site at the end stage of project activities.	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Solid waste Pollution from E-wastes	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Solid waste Pollution from Batteries	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Solid waste Pollution from end of life products/ equipment	Project activities generates waste bags of bag filter, waste activated carbon and	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	

		waste engine oil, but they are all entrusted to qualified third-party organizations for disposal.										
	Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury)	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
	Soil erosion	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	
Environment *- Water*	*Reliability/ accessibility of water supply*	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Water Consumption from ground and other sources	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Generation of wastewater	activities discharge wastewater. However, domestic wastewater and low-concentration wastewater are discharged to third-party sewage treatment plants, medium-concentration wastewater and high-concentration wastewater are treated and reused without discharge.	The drainage of the leachate treatment system of this project implements the water quality standard for the supplementary water of the circulating cooling water system in "Urban Sewage Recycling-Industrial Water Quality Standard"	N/A			N/A	N/A	N/A	N/A	N/A	+1

			(GB/T19923-2005); The water quality standards for road cleaning, fire fighting and vehicle washing in the "Water Quality Standards for Urban Wastewater Recycling and Utilization of Urban Miscellaneous Water" (GB/T18920-2002) shall be implemented for the drainage of the car washing wastewater treatment system.									
	Wastewater discharge without/with insufficient treatment	Domestic wastewater and low-concentration wastewater are discharged to third-party sewage treatment plants, medium-concentration wastewater and high-concentration wastewater are treated and reused without discharge.	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Pollution of Surface, Ground	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	

	and/or Bodies of water											
Environment *– Natural Resources*	*Conserving mineral resources*	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Protecting/ enhancing plant life	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Protecting/ enhancing species diversity	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Protecting/ enhancing forests	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Protecting/ enhancing other depletable natural resources	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Conserving energy	The project activities generate electricity, which fully covers the project's own electricity consumption, and the excess electricity is supplied to the local grid. Therefore the project conserves energy.	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Replacing fossil fuels with renewable sources of energy	The project activities generate electricity through MSW incineration, which fully covers the project's own electricity	There is no such legal limit.	N/A	-	-	N/A	N/A	N/A	N/A	N/A	+1

		consumption, and the excess electricity is supplied to the local grid. The electric energy generated by the project is provided by fossil fuels under "no project" scenario, therefore the project replaces fossil fuels to generate electricity.										
	Replacing ODS with non-ODS refrigerants	N/A	N/A	N/A	-	-	N/A	N/A	N/A	N/A	N/A	

Note: If the score is: (a) zero or greater, the overall impact is neutral or positive and there is no net harm; and (b) less than zero, the overall impact is negative and there is net harm to Environment. Score is obtained after adding the individual scores in each of the rows in the last column of the above table.

Net Score:	**+10**
Project Owner's Conclusion in PSF:	The Project Owner confirms that the Project Activity will not cause any net harm to the environment.

E.2. Social Safeguards

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Impact of Project Activity on		Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards									Project Owner's Conclusion	
		Description of Impact *(both positive and negative)*	**Legal requirement /Limit**	**Do-No-Harm Risk Assessment**			**Risk Mitigation Action Plans**		**Do-No-Harm Residual Risk Assessment**		**Self-Declaration**	
				Not Applicable *(No actions required)*	**Harmless** *(No actions required)*	**Harmful** *(Actions required)*	**Operational Controls**	**Program of Risk Management Actions**	**Re-evaluate Risks**	**Monitoring**	**Explanation of Conclusion**	**The Project Activity will not cause any harm**
Social impacts on the identified categories[26] indicated below.	*Indicators for social impacts*	*Describe the impacts on society and stakeholders, both positive and negative, that may result from constructing and operating of the Project Activity.*	*Describe the applicable national regulatory requirements / legal limits related to the identified risks of social impacts.*	*If no social impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as **Not Applicable** (No actions required)*	*If social impacts are anticipated, but are expected to be in compliance with applicable national regulatory requirements/ legal limits, then it the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as **Harmless** (No actions required)*	*If social impacts are anticipated that will not be in compliance with the applicable national regulatory requirements/ legal limits, then the Project Activity is likely to cause harm (may be unsafe) and shall be indicated as **Harmful** (Actions required).*	*Describe the operational controls and best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as **Harmful**.*	*Describe the Program of Risk Management Actions (refer to Table 3), focusing on additional actions (e.g., construction of crèche for workers) that will be adopted to reduce the risk of impacts that have been identified as **Harmful**.*	*Re-evaluate risks after Risk Mitigation Actions plans have been developed (refer to previous two columns) for impacts that have been identified as Harmful. Indicate whether the risks have been eliminated or reduced and, where appropriate, indicate them as **Harmless** (No actions required)*	*Describe the monitoring approach and the parameters to be monitored for each impact that has been identified as Harmful and to be described in the PSF (refer to Table 3).*	*Describe how the Project Owner has concluded that the Project Activity is likely to achieve the identified Risk Mitigation Action Plan targets for managing risks to levels that are unlikely to cause any harm.*	*Confirm that the Project Activity risks of negative social impacts are expected to be managed to levels that are unlikely to cause any harm (Mark +1 for **Yes** or and -1 for **No**)*
Social Safeguards												
Social - *Jobs*	*Long-term jobs (> 1 year) created/ lost*	The project provides 68 long-term jobs. Among them, 20 are management and technical personnel, and 48 are operation workers.	All employments are done according to the China's national employment regulations.	N/A			N/A	N/A	N/A	N/A	N/A	+1

[26] sourced from the CDM SD Tool and the sample reports are available (https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx)

	New short-term jobs (< 1 year) created/ lost	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Sources of income generation increased / reduced	The project increases income by creating job opportunities.	All employments and payments comply with the Labour Law of the People's Republic of China.	N/A			N/A	N/A	N/A	N/A	N/A	+1
Social - *Health & Safety*	*Disease prevention*	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Reducing / increasing accidents	There may be occupational accidents at the project site.	Trainings and precautions are done complying with the Labour Law of the People's Republic of China.		Harmless		N/A	N/A	N/A	N/A	N/A	+1
	Reducing / increasing crime	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Reducing / increasing food wastage	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Reducing / increasing indoor air pollution	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Efficiency of health services	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Sanitation and waste management	The project is conducive to the realization of harmlessness, reduction and recycling of	The establishment and the operation activities all comply with China's	N/A			N/A	N/A	N/A	N/A	N/A	+1

		MSW, helps treat the increasing waste disposal demand.	regulations and laws.									
Social - *Education*	*Job related training imparted or not*	The project provides job related training for the special positions.	Training and precautions are done complying with the Labour Law of the People's Republic of China.	N/A			N/A	N/A	N/A	N/A	N/A	+1
	Educational services improved or not	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Project-related knowledge disseminatio n effective or not	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
Social - *Welfare*	*Improving/ deteriorating working conditions*	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Community and rural welfare	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Poverty alleviation (more people above poverty level)	The project create job opportunities to reduce the poverty population in the project site surrounding areas.	There is no such national level regulations or laws.	N/A			N/A	N/A	N/A	N/A	N/A	+1
	Improving / deteriorating wealth distribution/ generation of income and	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	

	assets											
	Increased or / deteriorating municipal revenues	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	
	Women's empowerment	The projct equally provide job oppotunities to men and women, ensure women's full and effective participation for decision making.	The project activities comly with the Law of the People's Republic of China on the Protection of Rights and Interests of Women.	N/A			N/A	N/A	N/A	N/A	N/A	+1
	Reduced / increased traffic congestion	N/A	N/A	N/A			N/A	N/A	N/A	N/A	N/A	

Note: If the score is: (a) zero or greater, the overall impact is neutral or positive and there is no net harm; and (b) less than zero, the overall impact is negative and there is net harm to society. Score is obtained after adding the individual scores in each of the rows in the last column of the above table.

Net Score:	**+7**
Project Owner's Conclusion in PSF:	The Project Owner confirms that the Project Activity will not cause any net harm to society.

Section F. United Nations Sustainable Development Goals (SDG)

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UN-level SDGs	UN-level Target	Declared Country-level SDG	Defining Project-level SDGs					Project Owner(s)'s Conclusion	
			Project-level SDGs	**Project-level Targets/ Actions**	**Project-level Indicators**	**Contribution of Project-level Actions to SDG Targets**	**Monitoring**	**Explanation of Conclusion**	**Are Goal/ Targets Likely to be Achieved?**
Describe UN SDG targets and indicators *See: https://unstats.un.org/sdgs/indicators/indicators-list/*	*Describe the UN-level target(s) and corresponding indicator no(s)*	*Has the host country declared the SDG to be a national priority? Indicate Yes or No*	*Define project-level SDGs by suitably modifying and customizing UN/ Country-level SDGs to the project scope.* ***For guidance see:*** *Integrating the SDGs into Corporate Reporting- A Practical Guide: https://www.unglobalcompact.org/docs/publications/Practical_Guide_SDG_Reporting.pdf* *Case-study from Coca-Cola and other organizations to develop organization-wide SDGs (page 114): https://pub.iges.or.jp/pub/realising-transformative-potential-sdgs*	*Define project-level targets/actions, by suitably modifying and customizing UN/Country-level targets to the project scope. Define the target date by which the Project Activity is expected to achieve the project-level SDG target(s). Refer to the previous column for guidance*	*Define project-level indicators by suitably modifying and customizing UN/Country-level indicators to the project scope or creating a new indicator(s). Refer to the previous column for guidance*	*Describe and justify how actions taken under the Project Activity are likely to result in a direct positive effect that contributes to achieving the defined project-level SDG targets and is additional to what would have occurred in the absence of the Project Activity*	*Describe the monitoring approach and the monitoring parameters to be applied for each project-level SDG target and Indicator*	*Describe how the Project Owner has concluded that the project is likely to achieve the identified Project level SDGs target(s).*	*Describe whether the project-level SDG target(s) is likely to be achieved by the target date (Yes or No)*
Goal 1: End poverty in all its forms everywhere	SDG Target 1.2 By 2030, reduce at least by half the proportion of men, women and children of all	Yes	Create job opportunities and provide them to men and women of all ages who has the willing to work, so as to reduce the poverty population in the project site surrounding areas.	The project is expected to provide 68 long-term job opportunities, and other positions during project construction and operation period. The level of poverty in local areas shall be reduced.	Modified 1.2.2 Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions.	The project created 68 job opportunities, providing them to men and women of all ages. All the positions are accessible to people in poverty, which cause positive impacts on end poverty	Employment records and payrolls of employees can be checked as the monitoring indicator	The project owner selects and employs employees according to the targets and indicators, the wages and social security payments are paid	Yes

	ages living in poverty in all its dimensions according to national definitions				Through offering long-term job opportunities, which is accessible to people in poverty, the number of people in poverty should decrease.			regularly.	
Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Goal 3. Ensure healthy lives and promote well-being for all at all ages	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Goal 5. Achieve gender equality and empower all women and girls	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Goal 6. Ensure availability and sustainable management of water and sanitation for all	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Goal 7. Ensure access to	SDG Target	Yes	Project activities that utilize heat from waste incineration to	Through the construction of a	Modified 7.2.1	By using waste heat	The project's power	The project indeed	Yes

affordable, reliable, sustainable and modern energy for all	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix		generate electricity can be considered renewable energy generation. Through MSW incineration project activities, power generation is supplied to the grid, and the proportion of renewable energy in the grid power supply is increased.	new MSW incineration plant, the project generates electricity generated by renewable energy and supplies it to the grid, increasing the proportion of renewable energy in the grid.	Renewable energy share in the total grid generation.	from MSW incineration to generate electricity, the project increases the total amount of renewable energy power generation in the total grid power generation, and thereby increase the proportion of renewable energy in the total grid power generation.	generation, on-grid power, and the annual summary or report issued by the local power grid.	provides on-grid electricity for the local power grid where the project is located, and the electricity provided comes from renewable energy.	
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	SDG Target 8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	Yes	Create job opportunities and provide them to men and women of all ages who has the willing to work, ensuring they are equally paid for work of equal value.	The project is expected to provide 68 long-term job opportunities, and other positions during project construction and operation period.	68 long-term job opportunities, which are ensured that employees are equally regarded in sex, age and disabilities.	The project created 68 job opportunities, providing them to men and women of all ages, ensuring the are equally paid for work of equal value.	Employment records shall be checked as the monitoring indicator.	The project owner selects and employs employees according to the regulations, the wages and social security payments are paid regularly.	Yes

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	SDG Target 9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Yes	Through the implementation of project, improve sustainability, improve the efficiency of resource use, or adopt more clean and environmentally friendly production methods.	The implementation of the project activities should be able to reduce greenhouse gas emissions while processing the same amount of waste, and generate electricity through the utilization of waste heat from waste incineration.	Modified 9.4.1 CO2 emission reductions per unit of value added.	Compared with the baseline scenario, the project activities reduce the greenhouse gas generated by processing the same amount of MSW, and generating electricity that can be supplied to the grid.	The electricity generated will be monitored by the meter and purchase invoices. Also, avoided GHG emissions are calculated every year.	The project uses waste heat from waste incineration to generate electricity, which reduces greenhouse gas emissions and produces energy. New technologies are used to replace the original landfill technology, which improves sustainability.	Yes
Goal 10. Reduce inequality within and among countries	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Goal 11. Make cities and human settlements	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

inclusive, safe, resilient and sustainable									
你 Goal 12. Ensure sustainable consumption and production patterns	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Goal 13. Take urgent action to combat climate change and its impacts	SDG Target 13.2 Integrate climate change measures into national policies, strategies and planning	Yes	Incinerate MSW to provide electricity generation, avoiding greenhouse gas emissions caused by fossil fuel combustion for providing equivalent amount of electricity	Providing 1.44× 10^8kWh feed-in power annually and 101501.63 annually.	13.2.2 Total greenhouse gas emissions per year Under the project scenario, the indicator is the emission reduction per year	The project can carry out harmless treatment of MSW and provide emission reductions 101501.63 annually on average, which is equivalent to reducing the total emission of greenhouse gases and contributing to the achievement of SDGs.	The annual actual emission reduction can be calculated and used as the monitoring indicator.	The project owner keep the operation of the project, monitoring the annual emission reduction of the project activities.	Yes
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SUMMARY	**Targeted**	**Likely to be Achieved**
Total Number of SDGs	**4**	**4**
Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF	**Gold**	**Gold**

Section G. Local stakeholder consultation

G.1. Modalities for local stakeholder consultation

Before the construction of the project, the methods of local stakeholders participating in consultation mainly include information disclosure, symposium and questionnaire survey. Through the above methods, the public can view the specific information of the proposed project, raise questions, and give relevant opinions and suggestions.

G1.1. Project Publicity

The first publicity of this project took place on September 16, 2015. The specific information of the project was announced on the official website of Bengbu Environmental Protection Bureau. The publicity period was 10 working days. The specific contents of the publicity mainly include the outline of the construction project, the basic information of the project, the working procedures and main contents of the environmental impact assessment, the main matters for soliciting public opinions.

The second publicity of this project took place on October 15, 2015, and the publicity period is 10 working days. The main information published on the official website of Bengbu Environmental Protection Bureau is as follows: details of construction projects, possible impacts of construction projects on the environment, measures to prevent or mitigate adverse environmental impacts, conclusions of environmental impact assessment, the main issues for soliciting public comments, and the method for public comments.

G1.2. Symposium

On November 14, 2015, the project owner organized a symposium with representatives of residents from the surrounding villages of the project site. The participants included the residents of Lilou Village, Laoshan Village, Huangxiang Village and Jia'an Village around the project site, as well as staff from the Bengbu Administrative Law Enforcement Bureau, the Bengbu Environmental Protection Bureau and the EIA unit. The total number of people participating in the meeting was 22. During the symposium, the project owner introduced the project, reported the results of the EIA of the project, and accepted the comments and suggestions of the participants.

G1.3. Public Participation Survey

The project has conducted a public participation survey by distributing an opinion form, and the main objects of the survey are the residents around the project site. In addition, the project owner also conducted a public participation survey in the surrounding villages in the form of a group survey. The public participation survey collected personal information such as name, gender, education level, age, occupation, contact address and contact number of local stakeholders, and

asked a series of questions. For the group public participation survey, the project party gave the same question after collecting the information including the unit name, contact address and contact number.

A total of 255 individual questionnaires were distributed in the public participation survey, and 252 were retrieved, with a retrieve rate of 99%. 4 group surveys were issued, all of which were retrieved. The participant information collected by the personal questionnaire is summarized as follows:

		Number	Proportion
Total		252	100%
Gender	Male	195	77.38%
	Female	57	22.62%
Age	＜40	74	29.37%
	40≤age≤60	143	56.75%
	＞60	32	12.70%
	Unknown	3	1.19%
Education Level	University and College	17	6.75%
	High School	26	10.32%
	middle school	175	69.44%
	primary school	29	11.51%
	Unknown	5	1.98%

A summary of the participant information collected in the group survey is as follows:

Number	Unit
1	Laoshan Village Villagers Committee
2	Huangxiang Village Villagers Committee
3	Jia'an Village Villagers Committee
4	Lilou Village Villagers Committee

Key questions from the public participation survey include:

1. Whether to support the construction of the project

2. The impact of the construction and operation of the project on the surrounding environment and whether it will improve the surrounding environment

3. Is it appropriate to replace the existing landfill method with waste incineration for power generation, and what impact will it have?

4. What are the suggestions and requirements for the environmental protection work of the project?

G.2. Summary of comments received

G2.1. Project Publicity

During the project publicity period, no suggestion for the project or objection to the construction of the project was received.

G2.2. Symposium

The participants of the symposium expressed their views on the environmental quality and pollution control measures around the project. While supporting the construction of the project, they also put forward some opinions and suggestions on the environmental protection work of the project. The main points are summarized as follows:

(1) Wastes need to be transported in a closed manner to reduce the leakage of odorous gases from wastes.

(2) The waste gas of the incinerator needs to be treated to ensure that the waste gas is discharged up to the standard.

(3) It is recommended to pay attention to environmental protection monitoring and regularly disclose monitoring information.

(4) Improve the emergency response work of the project.

G2.3. Public Participation Survey

The questionnaire includes questions on local environmental quality, environmental impact during project construction and operation, the degree of support for project construction, etc. The survey results are as follows:

98.41% of the individual participants chose to support the construction of the project, and 1.59% of the participants chose the "don't care" option. 100% of the group participants chose to support the construction of the project.

100% of the individual participants and group participants believed that the incineration waste disposal method is better than the existing landfill disposal method.

G.3. Consideration of comments received

Local stakeholder consultation is completed by the project owner through many ways. By conducting symposiums and questionnaires, it can be found that the vast majority of public participants support the construction of the project, and those who did not vote in favor did not raise any objections. However, the public has some concerns about environmental pollution, including but not limited to project incineration waste gas polluting the environment, waste dumping brings odorous gas, or causes water environment pollution, etc.

The project owner took the following pollution prevention measures to address the issues and concerns raised by local stakeholders:

1. For the incineration waste gas, the project designed a flue gas purification system. By using the multiple purification processes of "SNCR furnace denitrification + mechanical rotary spray drying purification tower + slaked lime injection + activated carbon adsorption + bag filter dust removal", the project's The flue gas produced by the incinerator is purified to reach the emission concentration that meets the national standard.

2. For odorous gas, the project design takes into account measures to reduce odor production and prevent odor from escaping. When the incinerator is in operation, the odor generated by the waste is sent to the incinerator as combustion air. In addition, the project also uses closed transport vehicles, air curtain doors, closed waste storage pits and other processes to prevent odors from affecting the surrounding environment of the project site.

3. For wastewater discharge, the project discharges low-concentration wastewater to the sewage treatment plant, and reuses all medium-concentration and high-concentration wastewater without any discharge, which is to avoid the project's wastewater polluting the surface water or groundwater quality near the project site due to irregular discharge.

For detailed pollution prevention and control measures and the national standards to be met after the measures are taken, see Sections D and E.

Section H. Approval and authorization

N/A

Appendix 1. Contact information of project owners

Organization name	Hangzhou Chaoteng Energy Technology Co., Ltd.
Country	The People's Republic of China
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Contact person	Minna Wang

Appendix 2. Affirmation regarding public funding

No public funding for the proposed project.

Appendix 3. Applicability of methodology(ies)

Applicability of methodology has been discussed in section B.2. No further information is required in this part.

Appendix 4. Further background information on ex ante calculation of emission reductions

Ex-ante calculation of emission reductions has been detailed in section B.6. No further information is required.

Appendix 5. Further background information on monitoring plan

The monitoring plan has been detailed in section B.7. No further background information in this part.

Appendix 6. Summary report of comments received from local stakeholders

The information of LSC was discussed in section G, no further information in this part.

Appendix 7. Summary of de-registered CDM project (Type B)

N/A

DOCUMENT HISTORY

Version	Date	Comment
V 3.2	31/12/2020	▪ The name of GCC Program's emission units has been changed from "Approved Carbon Reductions" or ACRs to "Approved Carbon Credits" or ACCs.
V 3.1	17/08/2020	▪ Editorial revisions made ○ Revised Table in section B.7.2 on Monitoring-program of risk management actions ○ Revised Table in section E.1 on Environmental Safeguards ○ Revised Table in section E.1 on Social Safeguards ○ Revised Table in section F on United Nations Sustainable Development Goals (SDG)
V 3.0	05/07/2020	▪ Revised version released on approval by Steering Committee as per GCC Program Process; ▪ Revised version contains following changes: ○ Change of name from Global Carbon Trust (GCT) to Global Carbon Council (GCC); ○ Considered and addressed comments raised by Steering Committee: ➢ during physical meeting (SCM 01, dated 29 Oct 2019, Doha Qatar); and ➢ electronic consultations EC01-Round 01 (15.09.2019 – 25.09.2019), EC01-Round 02 (27.03.2020 – 27.06.2020). ○ Feedback from Technical Advisory Board (TAB) of ICAO on GCC submission for approval under CORSIA[27];
V 2.0	25/06/2019	▪ Revised version released for approval by the GCC Steering Committee. ▪ Revised version includes additional details and instructions on the information to be provided, consequent to the latest developments world-wide (e.g., CORSIA EUC).
V 1.0	01/11/2016	Initial version released under the GCC Program Version 1

[27]See ICAO recommendation for conditional approval of GCC at https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/Excerpt_TAB_Report_Jan_2020_final.pdf

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