



**Verified Carbon
Standard**

NANHAI MSW INCINERATION II PROJECT



ClimateBridge

Document Prepared by Climate Bridge (Shanghai) Ltd.

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CONTENTS

1	PROJECT DETAILS.....	4
1.1	Summary Description of the Project	4
1.2	Sectoral Scope and Project Type	5
1.3	Project Eligibility	5
1.4	Project Design	5
1.5	Project Proponent	5
1.6	Other Entities Involved in the Project	5
1.7	Ownership.....	6
1.8	Project Start Date	6
1.9	Project Crediting Period	6
1.10	Project Scale and Estimated GHG Emission Reductions or Removals	6
1.11	Description of the Project Activity.....	7
1.12	Project Location	7
1.13	Conditions Prior to Project Initiation	8
1.14	Compliance with Laws, Statutes and Other Regulatory Frameworks.....	8
1.15	Participation under Other GHG Programs	8
1.16	Other Forms of Credit.....	9
1.17	Additional Information Relevant to the Project	9
2	SAFEGUARDS.....	10
2.1	No Net Harm	10
2.2	Local Stakeholder Consultation	10
2.3	Environmental Impact	10
2.4	Public Comments	10
2.5	AFOLU-Specific Safeguards	10
3	APPLICATION OF METHODOLOGY.....	10
3.1	Title and Reference of Methodology	10
3.2	Applicability of Methodology	11
3.3	Project Boundary	11
3.4	Baseline Scenario	11
3.5	Additionality	11
3.6	Methodology Deviations	11

4	QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS	11
4.1	Baseline Emissions	11
4.2	Project Emissions	11
4.3	Leakage.....	11
4.4	Net GHG Emission Reductions and Removals	11
5	MONITORING	12
5.1	Data and Parameters Available at Validation	12
5.2	Data and Parameters Monitored.....	12
5.3	Monitoring Plan	12

1 PROJECT DETAILS

1.1 Summary Description of the Project

Nanhai MSW Incineration II Project (hereafter referred to as the project) is located at Shougouling, Shishan Forestry Centre, Shishan Town, Nanhai District, Foshan City, Guangdong Province, P.R. China. The Project is invested, constructed and operated by Foshan Nanhai Green Renewable Energy Co., Ltd. (hereafter referred to as the project owner).

With three 500t/d MSW combustion production lines, the project will treat 1,500 tons of MSW per diem. The combustion system is composed of three 500t/d mechanical grate incinerators, matched with two sets of 15MW steam turbine and two sets of 20MW generators. The project will process 495,000 tons¹ of MSW every year, and consume 168 tons of 0# light diesel as auxiliary fuel. The MSW combustion line will work 8,000hours every year, generating 168,655 MWh electricity, of which 134,924 MWh will be exported to the South China Power Grid (SCPG) to which the project activity is connected. Since the incinerators will be started one by one and under test run during 2011, the project is expected to be running at 50% of its full capacity in the first year of operation.

By combusting MSW that would otherwise be disposed of at landfill, the proposed project activity avoids the emission of methane that would be generated under landfill condition. In the meanwhile, by utilizing the waste heat from the combustion of MSW, the boilers can produce steam to generate power to replace the electricity that would otherwise be generated by fossil-fuel fired power plants which are connected to SCPG. The baseline scenario of this project is the same as the scenario prior to the implementation of the project, namely the landfill gas is vented directly and the equivalent power is supplied by the SCPG. It is estimated that in the first crediting period of the project (from 01-June-2011 to 31-May-2021), the average annual GHG emission reduction will be 212,736 tCO₂e, with the total emission reduction of 2,127,360tCO₂e.

Before the implementation of the project, the local MSW was usually disposed of at nearby landfill, where no landfill gas capturing system erected and the landfill gases are released to atmosphere directly. The equivalent power generated by the project was supplied by the SCPG. The baseline scenario identified in section B.4 is the same as the scenario existing prior to the start of implementation of the project activity. The implementation of the project will meet the requirement of local MSW harmless treatment, and significantly improve local environment. Also, the proposed project fits the priority development sector of integrated utilization of resource and energy saving of China, and helps reduce GHG emission that would occur in baseline scenarios such as power generating by fossil-fuel fired plants and MSW treatment at landfill.

¹ According to the BOT agreement between project owner and Nanhai Municipal Administration Bureau.

1.2 Sectoral Scope and Project Type

sector scope 1: energy industries and sector

scope 13: Waste handling and disposal.

The project is not a grouped project.

1.3 Project Eligibility

The project is not a grouped project.

1.4 Project Design

NA.

1.5 Project Proponent

Organization name	Foshan Nanhai Green Renewable Energy Co., Ltd.
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Title	Engineer
Address	Dalan Branch, Shishan Forest Farm, Nanhai District, Foshan, Guangdong, China
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1.6 Other Entities Involved in the Project

Organization name	Climate Bridge Ltd.
Role in the project	VCU buyer
Contact person	Gao Zhiwen
Title	General Manager
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1.7 Ownership

The approval of Environmental Impact Assessment (EIA), Project Application Report (PAR), and Letter of Approval for the Project as a CDM Project issued by China National Development and Reform Commission, and the business license of the project owner are evidences for legislative right. Besides, the purchasing contract of incinerators, Waste heat recovery boilers, Steam turbines and generators, and the purchasing power agreement are the evidences for the ownership of the plant, equipment and power generating.

1.8 Project Start Date

01-June-2011 (*commercial operation start date*).

1.9 Project Crediting Period

This project adopts renewable crediting periods of 30 years (from 01-June-2011 to 31-May-2041), and the first 10-year crediting period is from 01-June-2011 to 31-May-2021 (both days included).

1.10 Project Scale and Estimated GHG Emission Reductions or Removals

Project Scale	
Project	✓
Large project	

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
01-June-2011 to 31- December -2011	16,817
01-January-2012 to 31-December-2012	60,946
01-January-2013 to 31-December-2013	126,673
01-January-2014 to 31-December-2014	180,739
01-January-2015 to 31-December-2015	215,642
01-January-2016 to 31-December-2016	242,707
01-January-2017 to 31-December-2017	264,313
01-January-2018 to 31-December-2018	282,068
01-January-2019 to 31-December-2019	297,062

01-January-2020 to 31-December-2020	310,037
01-January-2021 to 31-May-2021	130,356
Total estimated ERs	2,127,360
Total number of crediting years	10
Average annual ERs	212,736

The estimated emission reductions in the VCS PD are different from the estimated ERs in the CDM PDD. There are two reasons for this difference. One is that the ERs in the VCS PD are calculated from the start date of the project operation (01-June-2011) for the first 10 years crediting period (01-June-2011 to 31-May-2021) based on the registered CDM ER calculation sheet, while the ERs in the CDM PDD calculated from the estimated CDM registration date (01-April-2012) for the first 7 years crediting period (01-April-2012 to 31-March-2019). The other is that the different values of GWP_{CH₄} (21 tCO₂/tCH₄ before 2013 and 25 tCO₂/tCH₄ after 2013) and GWP_{N₂O} (310 tCO₂/tN₂O before 2013 and 298 tCO₂/tN₂O) before and after 2013 is took into account in this VCS PD, while the CDM PDD taking the fixed value of GWP_{CH₄} (21 tCO₂/tCH₄) GWP_{N₂O} (310 tCO₂/tN₂O).

1.11 Description of the Project Activity

NA.

1.12 Project Location

The project is located within Nanhai District, Foshan City, Guangdong Province. The geographical coordinates are east longitude 113.0328° E and north latitude 23.1575° N, Figure 1-1 shows the geographic location of the project.



Figure 1-1 The location of the project Site, landfill site and collection points

1.13 Conditions Prior to Project Initiation

The scenario existing prior to the start of the implementation of the project activity is:

The local MSW was usually disposed of at nearby landfill, where no landfill gas capturing system erected and the landfill gases are released to atmosphere directly. The equivalent power generated by the project was supplied by the SCPG.

The baseline scenario is the same as the scenario existing prior to the start of implementation of the project activity.

1.14 Compliance with Laws, Statutes and Other Regulatory Frameworks

The project is in the field of waste handling and disposal and meets the relevant provisions of the Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste. The generation of power from SCPG will meet the requirement of national laws and regulations, also financially viable.

1.15 Participation under Other GHG Programs

1.15.1 Projects Registered (or seeking registration) under Other GHG Program(s)

The project has been registered as a Clean Development Mechanism (CDM) project in UNFCCC on 27-February-2012 (UNFCCC Ref. 5297), with the first 7 years crediting period started from 27-February-2012 and can be renewed twice. Please refer to the following link for details:

<https://cdm.unfccc.int/Projects/DB/Germanischer1317298382.09/view?cp=1>

Except for CDM, the project did not register under any other GHG program.

1.15.2 Projects Rejected by Other GHG Programs

NA.

1.16 Other Forms of Credit

1.16.1 Emissions Trading Programs and Other Binding Limits

Total GHG emission reductions of 423,133 tCO₂ generated from 27-February-2012 to 28-February-2015 (both days included) by the project has been issued as CER under CDM program.

The GHG emission reductions generated by the project from 01-March-2015 will not be used for compliance with emission trading programs or to meet binding limits on GHG emissions.

All credits from 01-March-2015 will be claimed under VCS program as VCUs for the project to avoid double counting.

1.16.2 Other Forms of Environmental Credit

The project hasn't sought or received another form of environmental credits.

1.17 Additional Information Relevant to the Project

Leakage Management

NA.

Commercially Sensitive Information

No commercially sensitive information has been excluded from the public version of the project description.

Sustainable Development

The Project will contribute to sustainable development in the following ways:

- Reduce GHG emission compared to common practice.

- Relieve the pressure of power demand, and improve the innovation in urban resource integrated utilization sector.
- Provide a solution to local MSW sanitary treatment.
- Reduce pollutant release in power sector, compared to common practice.
- Create job opportunities for local government during the construction and operation of the project.

Further Information

NA.

2 SAFEGUARDS

2.1 No Net Harm

NA

2.2 Local Stakeholder Consultation

NA.

2.3 Environmental Impact

NA.

2.4 Public Comments

This project was open for public comment from 28-February-2020 to 29-March-2020. There are no public comments received for the project during the comment period.

2.5 AFOLU-Specific Safeguards

NA.

3 APPLICATION OF METHODOLOGY

3.1 Title and Reference of Methodology

NA.

3.2 Applicability of Methodology

NA.

3.3 Project Boundary

NA.

3.4 Baseline Scenario

NA.

3.5 Additionality

NA.

3.6 Methodology Deviations

The project was applicable to the approved baseline and monitoring methodology AM0025 "Avoided emissions from organic waste through alternative waste treatment processes"(Version 12). There is no methodology deviations for the project.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

NA.

4.2 Project Emissions

NA.

4.3 Leakage

NA.

4.4 Net GHG Emission Reductions and Removals

NA.

5 MONITORING

5.1 Data and Parameters Available at Validation

NA.

5.2 Data and Parameters Monitored

NA.

5.3 Monitoring Plan

NA.