

Gold Standard for the Global Goals
Transition Annex



Version 1 – September 2017

KEY PROJECT INFORMATION

Title of Project/PoA/Activity:	Suzhou Qizi Mountain Landfill Gas Recovery Project
GS ID of the project/PoA/activity:	397
GS Version:	1.0
Brief description of Project:	This project, developed by Everbright Environment and Energy (Suzhou) Landfill Gas to Energy Co., Ltd., is located at Qizi Mountain Landfill, Suzhou, Jiangsu Province, China. The purpose of the project is to utilize landfill gas (LFG) for electricity generation. Power generation by project is supplied to East China Power Grid (ECPG). 3 units are installed, and each unit has an installation capacity of 1.25 MW. The exported electricity is estimated to be 24,992 MWh a year on average. In absence of the project, equivalent amount of electricity exported to the grid by the project would have otherwise been supplied by East China Power Grid. Greenhouse gas (GHG) emissions is reduced by avoiding CO₂ emissions from those fossil fuel-based power plants connected to the grid and by avoiding GHG emissions from releasing LFG into atmosphere at the landfill site. The expected average annual emission reductions are 136,794tCO₂e during the second crediting period. Emission reductions from steam generation with waste heat are not counted for a conservative approach.
Project type: Energy/Land Use	Energy
For Renewable Energy Projects – intention to apply RECs Labels (y/n)	No
GS Stream (CDM/VER):	VER
Scale (large/scale/micro):	Large
GS Registration Date:	22/04/2009
GS Crediting period start date:	22/04/2014 (second)
CDM Registration Date:	/
CDM Crediting period start date:	/
Project Developer:	Everbright Environment and Energy (Suzhou)

	Landfill Gas to Energy Co., Ltd.
Project Representative:	South Pole Carbon Asset Management Ltd.
Project Participants and any communities involved:	Everbright Environment and Energy (Suzhou) Landfill Gas to Energy Co., Ltd. ; South Pole Carbon Asset Management Ltd.
Host Country/Location:	People's Republic of China
Methodologies applied:	ACM0001(V16)
SDG Impacts:	1 – SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all 2 – SDG 8: Promote inclusive and sustainable economic growth, employment and decent work for all 3 – SDG 13: Take urgent action to combat climate change and its impacts
Estimated amount of SDG Impact (GSVERs and others)	SDG 7 – 24,992 MWh/year, reduced energy required in the project area SDG 8 – all the employees have access to training, health care, social insurances. SDG 13 – 136,794t/year GSVERs

SECTION A Sustainable Development Goals (SDG) outcomes

A.1 Relevant target for each of the three SDGs

SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Target 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix.

Indicator 7.2.1: Renewable energy share in the total final energy consumption

SDG 8: Promote inclusive and sustainable economic growth, employment and decent work for all

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

Indicator 8.5.1: Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.

SDG 13: Take urgent action to combat climate change and its impacts

Target 13.B: Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities.

Indicator: 13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.

A.2 Explanation of methodological choices/approaches for estimating the SDG outcome

SDG7: Ensure access to affordable, reliable, sustainable and modern energy for all

For SDG7, the related parameter is electricity exported to ECPG (EL_{LFG}). This project exported 24,992 MWh to ECPG to replace the equivalent electricity from fossil fuel power plants.

Monitoring parameters: $EL_{generation}$ (Electricity generation from the generator in the year y), $EL_{internal consumption}$ (Electricity imported from the grid in the year y)

According to the registered PDD, EL_{LFG} is calculated as follows

$$EL_{LFG} = EL_{\text{generation}} - EL_{\text{internal consumption}}$$

Where,

$EL_{\text{generation}}$: Electricity generation from the generator in the year y

$EL_{\text{internal consumption}}$: Electricity imported from the grid in the year y. It includes the electricity consumption of the gas collection system. (Auxiliary electricity consumption)

SDG 8, Promote inclusive and sustainable economic growth, employment and decent work for all

This project enables full and productive employment and decent work for all women and men. All the employees are trained on technological skill, equipment operation, safety regulation, firefighting, etc. All the employees are provided with labour contracts, medical insurance as well as social insurance.

Monitoring parameters:

AQy: Air quality

WQy: Water quality

Employment: Number of people employed; Fulfilment of labour standards

Human and institutional capacity: Trainings provided for the workers or local people

SDG 13: Take urgent action to combat climate change and its impacts

For the climate action, this project is estimated directly contributing by reducing 136,794 tons of CO_2 equivalent every year.

Monitoring parameters: $LFG_{\text{electricity},y}$ (Amount of landfill gas combusted in power plant at Normal Temperature and Pressure) ; W_{CH_4} (methane fraction in the landfill gas) ; T(temperature of the landfill gas); P(pressure of the landfill gas); $EL_{\text{generation}}$ (electricity generation from the generator in the year y); $EL_{\text{internal consumption}}$ (electricity imported from the grid in the year y)

According to the methodology, the emission reduction is calculated as follows:

Baseline emissions

$$BE_y = BE_{CH_4,y} + BE_{EC,y}$$

Where,

BE_y	Baseline emissions in year y (tCO_2e/yr)
$BE_{CH_4,y}$	Baseline emissions of methane from the SWDS in year y (tCO_2e/yr)
$BE_{EC,y}$	Baseline emissions associated with electricity generation in year y (tCO_2e/yr)

$$BE_{CH_4,y} = (1 - OX_{\text{top_layer}}) * F_{CH_4,PJ,y} - F_{CH_4,BL,y} * GWP_{CH_4}$$

Where

OX_{top_layer}	Fraction of methane in the LFG that would be oxidized in the top layer of the SWDS in the baseline (dimensionless)
$F_{CH_4,PJ,y}$	Amount of methane in the LFG which is flared and/or used in the project activity in year y (tCH ₄ /yr)
$F_{CH_4,BL,y}$	Amount of methane in the LFG that would be flared in the baseline in year y (tCH ₄ /yr). For this project, $F_{CH_4,BL,y}=0$
GWP_{CH_4}	Global warming potential of CH ₄ (tCO ₂ e/tCH ₄)

Ex-post determination of $F_{CH_4,PJ,y}$

According to ACM0001, during the crediting period, $F_{CH_4,PJ,y}$ shall be determined ex post as follows:

$$F_{CH_4,PJ,y} = F_{CH_4,flared,y} + F_{CH_4,EL,y}$$

Where,

$F_{CH_4,flared,y}$	Amount of methane in the LFG which is destroyed by flaring in year y (tCH ₄ /yr)
$F_{CH_4,EL,y}$	Amount of methane in the LFG which is used for electricity generation in year y (tCH ₄ /yr)

$$F_{CH_4,flared,y} = F_{CH_4,sent_flare,y} - PE_{flare,y} / GWP_{CH_4}$$

Where

$F_{CH_4,sent_flare,y}$	Amount of methane in the LFG which is sent to the flare in year y (tCH ₄ /yr)
$PE_{flare,y}$	Project emissions from flaring of the residual gas stream in year y (tCO ₂ e/yr)
GWP_{CH_4}	Global warming potential of CH ₄ (tCO ₂ e/tCH ₄)

Ex ante estimation of $F_{CH_4,PJ,y}$

An ex ante estimate of $F_{CH_4,PJ,y}$ is required to estimate baseline emission of methane from the SWDS, in order to estimate the emission reductions of the project activity. It is determined as follows:

$$F_{CH_4,PJ,y} = \eta_{PJ} \times BE_{CH_4,SWDS,y} / GWP_{CH_4}$$

Where:

$F_{CH_4,PJ,y}$	Amount of methane in the LFG which is flared and/or used in the project activity in year y (tCH ₄ /yr)
η_{PJ}	Efficiency of the LFG capture system that will be installed in the project activity
$BE_{CH_4,SWDS,y}$	Amount of methane in the LFG that is generated from the SWDS in the baseline scenario in year y (tCO ₂ e/yr)
GWP_{CH_4}	Global warming potential of CH ₄ (tCO ₂ e/tCH ₄)

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$BE_{CH_4,SWDS,y}$ is determined using the methodological tool "Emissions from solid waste disposal sites" (version 07.0)

$$BE_{CH_4,SWDS,y} = \phi \cdot (1-f) \cdot GWP_{CH_4} \cdot (1-OX) \cdot F \cdot DOC_f \cdot MCF \cdot \sum_j W_{j,k} \cdot DOC_j \cdot e^{-k \cdot x}$$

Where:

ϕ	Model correction factor to account for model uncertainties (0.9)
f	Fraction of methane captured at the SWDS and flared, combusted or used in another manner
GWP_{CH_4}	Global Warming Potential (GWP) of methane, valid for the relevant commitment period
OX	Oxidation factor (reflecting the amount of methane from SWDS that is oxidised in the soil or other material covering the waste)
F	Fraction of methane in the SWDS gas (volume fraction) (0.5)
DOC_f	Fraction of degradable organic carbon (DOC) that can decompose
MCF	Methane correction factor
$W_{j,k}$	Amount of organic waste type j prevented from disposal in the SWDS in the year x (tons)
DOC_j	Fraction of degradable organic carbon (by weight) in the waste type j
k	Decay rate for the waste type j
j	Waste type category (index)
x	Year during the crediting period: x runs from the first year of the first crediting period ($x = 1$) to the year y for which avoided emissions are calculated ($x = y$)
y	Year for which methane emissions are calculated

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

Where,

$BE_{EC,y}$	Baseline emissions from electricity consumption in year y (tCO ₂ /yr)
$EC_{BL,k,y}$	Quantity of electricity that would be consumed by the baseline electricity consumption source k in year y (MWh/yr)
$EF_{EL,k,y}$	Emission factor for electricity generation for source k in year y (tCO ₂ /MWh). According to Tool to calculate the emission factor for an electricity system" (Version 05.0), $EF_{EL,k,y} = EF_{grid,CM,y} = 0.71694 \text{ tCO}_2\text{e/MWh}$
$TDL_{k,y}$	Average technical transmission and distribution losses for providing electricity to source k in year y
k	Sources of electricity consumption in the baseline

$$ER_y = BE_y - PE_y$$

Where

ER_y	Emission reductions in year y (tCO ₂ e/yr)
BE_y	Baseline emissions in year y (tCO ₂ e/yr)
PE_y	Project emissions in year y (tCO ₂ /yr)

A.3 Data and parameters fixed ex ante for monitoring contribution to each of the three SDGs

Relevant SDG Indicator	13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data/parameter	$BE_{CH_4,SWDS,y}$
Unit	tCO ₂ e
Description	Methane generation from the landfill in the absence of the project activity at year y
Source of data	Calculated as per the "Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site".
Value(s) applied	/
Choice of data or Measurement methods and procedures	As per the "Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site"
Purpose of data	Used for ex-ante estimation of the amount of methane that would have been destroyed/combusted during the year
Additional comment	N/A

Relevant SDG Indicator	13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data/parameter	GWP_{CH_4}
Unit	tCO ₂ e/tCH ₄
Description	Global warming potential of CH ₄
Source of data	IPCC
Value(s) applied	25
Choice of data or Measurement methods and procedures	/
Purpose of data	Calculation of $BE_{CH_4,SWDS,y}$
Additional comment	N/A

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Relevant SDG Indicator	13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data/parameter	D_{CH_4}
Unit	$tCH_4/m^3 CH_4$
Description	Methane density
Source of data	Methodology
Value(s) applied	0.0007168
Choice of data or Measurement methods and procedures	At standard temperature and pressure (0 degree Celsius and 1,013 bar) the density of methane is 0.0007168 $tCH_4/m^3 CH_4$
Purpose of data	Calculation of $BE_{CH_4,SWDS,y}$
Additional comment	N/A

Relevant SDG Indicator	13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data/parameter	$EF_{grid,CM,y}$
Unit	tCO_2/MWh
Description	Combined margin CO_2 emission factor of East China Power Grid in year y
Source of data	Officially released statistics; publicly accessible and reliable data source
Value(s) applied	0.71694
Choice of data or Measurement methods and procedures	As per the "Tool to calculate the emission factor for an electricity system". Based on combined margin calculation of OM and BM of East China Power Grid. Weighting of OM and CM are 0.25 and 0.75 respectively. The project uses fixed ex ante emission factor in the second crediting period.
Purpose of data	For calculation of the CO_2 emission reduction
Additional comment	N/A

B.1 Analysis of social, economic and environmental impacts

Safeguarding principles	Assessment questions	Assessment of relevance to the project (Yes/potentially/no)	Justification	Mitigation measure (if required)
3.1 Human Rights	The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights	No	Employees in this project are protected under Chinese Labour Law. The project respect internationally proclaimed human rights and does not complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights.	N/A
	Is there a likelihood that the Project discriminate with regards to participation and inclusion?	No	This project does not discriminate with regards to participation and inclusion. All people would be employed by this project as if he or she could do work well. No matter about the gender, what kind of religion, political or other opinion, national or social or geographical origin, rich or poor.	N/A
3.2 Gender Equality and	Is there a possibility that the Project might	No	The project does not reduce or put at risk women's access to or	N/A

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Women's Rights	reduce or put at risk women's access to or control of resources, entitlements and benefits?		control of resources, entitlements and benefits.	
	Is there a possibility that the Project can adversely affect men and women in marginalized or vulnerable communities (e.g., potential increased burden on women or social isolation of men)?	No	The project does not adversely affect man and women in marginalized or vulnerable communities.	N/A
	Is there a possibility that the Project might not take into account gender roles and the abilities of women or men to participate in the decisions/designs of the project's activities (such as lack of time, child care duties, low literacy or educational levels, or societal discrimination)?	No	The project takes into account gender roles and the abilities of women and men to participate in the decisions/design of the project's activities. In the first crediting period and renewal of crediting period, the stakeholder consultation was conducted to collect comments from men and women. The detail can be seen in renewal PDD.	N/A

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	Does the Project take into account gender roles and the abilities of women or men to benefit from the Project's activities (e.g., Does the project criteria ensure that it includes minority groups or landless peoples)?	No	Qualified local residents, both men and women, are recruited to work for the project. However, there are no minority groups in the project area, so, the project does not include minority groups.	N/A
	Does the Project design contribute to an increase in women's workload that adds to their care responsibilities or that prevents them from engaging in other activities?	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. Therefore, its design does not contribute to an increase in women's workload that adds to their care responsibilities or that prevents them from engaging in other activities.	N/A
	Would the Project potentially reproduce or further deepen discrimination against women based on gender, for instance, regarding their full participation in design and implementation	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. Thus, it has no potential to reproduce or further deepen discrimination against women based on gender.	N/A

	or access to opportunities and benefits?			
	Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental goods and services?	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. Thus, it has no potential to limit women's ability to use, develop and protect natural resources.	N/A
	Is there a likelihood that the proposed Project would expose women and girls to further risks or hazards?	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. Thus there is no likelihood that the proposed Project would expose women and girls to further risks or hazards.	N/A
3.3 Community Health, Safety and Working Conditions	Is there a likelihood that the Project would expose community to increased health risks and adversely affect the health of the workers and the community?	No	This project recovers methane and supplies electricity from the landfill gas to ECPG. It is beneficial to local people. The working environment is safe and related safeguarding equipment is provided for workers. All the working process is in line with operation rules and regulations. Therefore, the Project shall avoid community exposure to	N/A

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			increased health risks and shall not adversely affect the health of the workers and the community.	
3.4.1 Sites of Cultural and Historical Heritage	Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, or practices)?	No	This project area does not include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture.	N/A
3.4.2 Forced Eviction and Displacement	Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	No	This project does not require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial).	N/A
3.4.3 Land Tenure and Other Rights	Does the Project require any change to land tenure arrangements and/or other rights?	No	The project site is in the area of garbage dealing area. It does not require any change to land tenure arrangements and/or other rights.	N/A
	For Projects involving land-use tenure, are there any uncertainties with regards land tenure, access	No.	N/A	N/A

	rights, usage rights or land ownership?			
3.4.4 Indigenous Peoples	Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples?	No	No indigenous peoples present in or within the area of influence of the Project	N/A
3.5 Corruption	The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects.	No	The Project does not involve, complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects	N/A
3.6.1 Labour Rights	Is there a likelihood that this project is not in compliance with national labour and occupational health and safety laws, obligations under international law, and the principles and standards embodied in the International Labour	No	This project complies with national labour and occupational health and safety laws, as well as international law.	N/A

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	Organization (ILO)?			
	Is there a likelihood that workers should not join labour organisation?	No	Workers could join labour organisations voluntarily.	N/A
	Is there a likelihood that working agreements with all individual workers are not documented and implemented?	No	Working agreements between the company and individual workers are documented and implemented.	N/A
	Is there a likelihood that the employment model applied is not locally and culturally appropriate?	No	The employment model applied is locally and culturally appropriate.	N/A
	Is there a likelihood that this project includes child labour?	No	This project does not include child labour.	N/A
	Is there a likelihood that this project does not use appropriate equipment?	No	All equipment in this project are operated properly according to the safety regulation rules.	N/A
3.6.2 Negative Economic Consequences	Is the financial sustainability of the Project implemented, also including those that will	No	The financial sustainability of the Project has been demonstrated in the registered PDD.	N/A

	occur beyond the Project Certification period?			
	Does the Project consider economic impacts and demonstrate a consideration of potential risks to the local economy and how these have been taken into account in Project design, implementation, operation and after the Project?	No	The project could supply job opportunities to local people, thus is good to local economy. As the Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG, there is no potential risks of the project to the local economy.	N/A
4.1.1 Emissions	Will the Project increase greenhouse gas emissions over the Baseline Scenario?	No	The Project will reduce the emission of 136,794 tCO ₂ e compared to the Baseline Scenario as it recovers methane that otherwise been released to atmosphere and replaces electricity generated from fossil fuel fired power plants with zero emissions electricity from the landfill gas power plant.	N/A
4.1.2 Energy Supply	Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. It may use some electricity from national power grid when the equipment is in maintenance. It does not use energy from a local grid or power supply or fuel	N/A

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	(such as wood, biomass) that provides for other local users?		resource that provides for other local users.	
4.2.1 Impact on natural water patterns and flow	Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. Therefore, the impact of the Project on the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) is negligible.	N/A
4.2.2 Erosion and/or water body stability	Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion?	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. Therefore, the impact of the Project on the erosion and/or water body stability is negligible.	N/A
	Is the Project's area of influence susceptible to excessive erosion and/or water body instability?	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. Therefore, the project's area of influence is not susceptible to excessive erosion and/or water body instability.	N/A
4.3.1 Landscape	Does the Project involve the use of land and soil for	No	The project does not involve the use of land and soil for production of crops or other products.	N/A

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modification and soil	production of crops or other products?			
4.3.2 Vulnerability to Natural Disaster	Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. Therefore, the Project is not susceptible to and does not lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions.	N/A
4.3.3 Genetic Resources	Could the Project be negatively impacted by the use of genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development)?	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. Therefore, the Project is not negatively impacted by the use of GMOs.	N/A
4.3.4 Release of pollutants	Could the Project potentially result in the release of pollutants to the environment?	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. Therefore, the Project does not potentially result in release of pollutants to the environment.	N/A
4.3.5 Hazardous and Non-hazardous Waste	Will the Project involve the manufacture, trade, release, and/ or use of	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. Therefore, the Project does not involve the manufacture, trade,	N/A

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	hazardous and non-hazardous chemicals and/or materials?		release, and/or use of hazardous and non-hazardous chemicals and/or materials.	
4.3.6 Pesticides and fertilizers	Will the Project involve the application of pesticides and/or fertilisers?	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. Therefore, the Project does not involve the application of pesticides and/or fertilizers.	N/A
4.3.7 Harvesting of forests	Will the Project involve the harvesting of forests?	No	The project does not involve the harvesting of forests	N/A
4.3.8 Food	Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. Therefore, the Project does not modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives.	N/A
4.3.9 Animal Husbandry	Will the Project involve animal husbandry?	No	The Project's purpose is to recover methane and supply electricity from the landfill gas to ECPG. Therefore, the Project does not involve animal husbandry.	N/A
4.3.10 High Conservation Value Areas and Critical Habitats	Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key	No	This project locates in the landfill site. It does not physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified.	N/A

	biodiversity areas or sites identified?			
4.3.11 Endangered Species	Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)?	No	There are no endangered species identified as potentially being present within the Project boundary (including those that may route through the area)	N/A
	Does the Project potentially impact other areas where endangered species may be present through transboundary affects	No	The project would not potentially impact other areas where endangered species may be present through transboundary affects.	N/A

SECTION C Monitoring plan

C.1 Data and parameters to be monitored

Relevant SDG Indicator/Safeguarding Principle	SDG Indicator 13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data / Parameter	LFG _{electricity,y}
Unit	m ³
Description	Amount of landfill gas combusted in power plant at Normal Temperature and Pressure
Source of data	Monitoring by flow meter
Value(s) applied	/
Measurement methods and procedures	Measured by flow meter. Data to be aggregated monthly and yearly.
Monitoring frequency	Continuous

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QA/QC procedures	The monitoring equipment is calibrated by qualified third party.
Purpose of data	To calculate ER_y
Additional comment	/

Relevant SDG Indicator/Safeguarding Principle	SDG Indicator 13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data / Parameter	W_{CH_4}
Unit	m^3CH_4/m^3LFG
Description	Methane fraction in the landfill gas
Source of data	Measured by project participant using certified methane analyser
Value(s) applied	/
Measurement methods and procedures	It is monitored and recorded in the daily record, averaged in monthly record
Monitoring frequency	Monitored and recorded hourly, averaged monthly
QA/QC procedures	The monitoring equipment is calibrated by qualified third party.
Purpose of data	To calculate ER_y
Additional comment	

Relevant SDG Indicator/Safeguarding Principle	SDG Indicator 13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data / Parameter	T
Unit	$^{\circ}C$
Description	Temperature of the landfill gas
Source of data	Measured by project participant using certified temperature meter
Value(s) applied	/
Measurement methods and procedures	It is measured continuously and recorded hourly in the daily record
Monitoring frequency	Continuously
QA/QC procedures	The monitoring equipment is calibrated by qualified third party.
Purpose of data	To calculate ER_y
Additional comment	/

Relevant SDG Indicator/Safeguarding Principle	SDG Indicator 13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data / Parameter	P
Unit	Pa
Description	Pressure of the landfill gas
Source of data	Measured by project participant using certified pressure meter
Value(s) applied	/
Measurement methods and procedures	It is measured continuously and recorded hourly in the daily record
Monitoring frequency	Continuously
QA/QC procedures	The monitoring equipment is calibrated by qualified third party.
Purpose of data	To calculate ER_y
Additional comment	/

Relevant SDG Indicator/Safeguarding Principle	SDG Indicator 13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data / Parameter	$EL_{\text{generation}}$
Unit	MWh
Description	Electricity generation from the generator in the year y
Source of data	Measured by electricity meter
Value(s) applied	/
Measurement methods and procedures	It is monitored continuously and recorded on a monthly basis
Monitoring frequency	Continuously
QA/QC procedures	The electricity meter is controlled by the power grid company. Trained and qualified staff is responsible for recording electricity data from the electricity meter.
Purpose of data	To calculate ER_y
Additional comment	/

Relevant SDG Indicator/Safeguarding Principle	SDG Indicator 13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data / Parameter	EL _{internal consumption}
Unit	MWh
Description	Electricity imported from the grid in the year y. It includes the electricity consumption of the gas collection system.(auxiliary electricity consumption)
Source of data	Measured by electricity meter
Value(s) applied	/
Measurement methods and procedures	It is monitored continuously and recorded on a monthly basis
Monitoring frequency	Continuously
QA/QC procedures	The electricity meter is controlled by the power grid company. Trained and qualified staff is responsible for recording electricity import data from the electricity meter.
Purpose of data	To calculate ER _y
Additional comment	/

Relevant SDG Indicator/Safeguarding Principle	SDG Indicator 13.B.1: Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.
Data / Parameter	Operation of the plant
Unit	hours
Description	Operation of the equipment that consumes LFG
Source of data	Project participant record
Value(s) applied	/
Measurement methods and procedures	/
Monitoring frequency	Annually
QA/QC procedures	/
Purpose of data	/
Additional comment	/

Relevant SDG Indicator/Safeguarding Principle	SDG Indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.
Data / Parameter	AQ _y
Unit	N/A
Description	Air quality
Source of data	Monitored by third party
Value(s) applied	N/A
Measurement methods and procedures	Monitored by third party
Monitoring frequency	Annually
QA/QC procedures	Monitored by qualified third party. The project should meet the relevant environment standards during operation.
Purpose of data	/
Additional comment	/

Relevant SDG Indicator/Safeguarding Principle	SDG Indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.
Data / Parameter	WQ _y
Unit	N/A
Description	Water quality
Source of data	Monitored by third party
Value(s) applied	N/A
Measurement methods and procedures	Monitored by third party
Monitoring frequency	Annually
QA/QC procedures	Monitored by qualified third party. The project should meet the relevant environment standards during operation.
Purpose of data	/
Additional comment	/

Relevant SDG Indicator/Safeguarding Principle	SDG Indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.
Data / Parameter	Employment
Unit	N/A

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Description	Number of people employed. Fulfilment of labour standards
Source of data	Name list provided by HR
Value(s) applied	N/A
Measurement methods and procedures	The name list will be provided by HR. The fulfillment of labor standard will be checked by local labor authority
Monitoring frequency	Each verification
QA/QC procedures	Documents of training will be provided to DOE.
Purpose of data	/
Additional comment	/

Relevant SDG Indicator/Safeguarding Principle	SDG Indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities.
Data / Parameter	Human and institutional capacity
Unit	N/A
Description	People engaged during the fiscal year will be recorded in the accounting system of the plant. The number of people engaged, the gender, the responsibilities of them and the training they take will all be covered in the report.
Source of data	Training records
Value(s) applied	N/A
Measurement methods and procedures	Trainings are recorded
Monitoring frequency	Each verification
QA/QC procedures	Training invoices or documents of these employees or local officials or local people will be provided as evidence for contribution in employment of local people.
Purpose of data	/
Additional comment	/

Relevant SDG Indicator/Safeguarding Principle	SDG Indicator 7.2.1: Renewable energy share in the total final energy consumption
Data / Parameter	EL _{LFG}
Unit	MWh
Description	Net amount of electricity generated using LFG.
Source of data	Monitoring by electricity meter
Value(s) applied	/
Measurement methods and procedures	EL _{LFG} = EL _{generation} - EL _{internal consumption}

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Monitoring frequency	Monitored continuously and recorded monthly.
QA/QC procedures	/
Purpose of data	/
Additional comment	/

C.1.1 Other elements of monitoring plan (if applicable)

N/A

SECTION D Duration and crediting period

D.1 Duration of project

D.1.1 Start date of project

26/11/2005

D.1.2 Expected operational lifetime of project

25 years

D.1 GS Crediting period of the project/activity

Renewable, 7years

D.2.1 Start date of the ongoing GS crediting period

22/04/2014

D.2.3 End date of the ongoing GS crediting period

21/04/2021

D.2.3 Total length of the GS crediting periods

3*7years

SECTION E Stacking of new assets

N/A

Appendix 1. Contact information of project participants

The project participant

Organization name	Swiss Carbon Assets Ltd
Registration number with relevant authority	
Street/P.O. Box	Technoparkstr. 1
Building	
City	Zurich
State/Region	
Postcode	8005
Country	Switzerland
Telephone	+ 41 44 633 78 70
Fax	+ 41 44 633 14 23
E-mail	r.heuberger@southpolecarbon.com
Website	
Contact person	Renat Heuberger
Title	Managing Partner
Salutation	Mr.
Last name	Heuberger
Middle name	
First name	Renat
Department	
Mobile	
Direct fax	+ 41 44 633 14 23
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