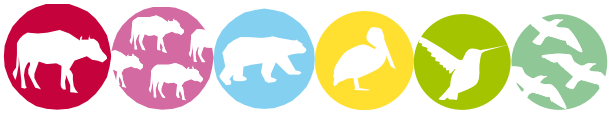
ANNEX R – PASSPORT TEMPLATE

CONTENTS



SECTION A. Project Title

Title: "GS3122 Exploitation of the biogas from Controlled Landfill in Solid Waste Management Central – CTRS / BR.040", hereinafter referred to as "the Project"

Date: 30.06.2015

Version no.: 1.2

SECTION B. Project description

The Project consists of a collection, transport and treatment system for landfill gas with production of electricity for self-consumption and incorporation to the national grid. Since the landfill gas major constituent is methane, whose GHG potential is 21 times[1] greater than CO_2, the Project reduces emissions of GHG into the atmosphere by means of methane destruction in high temperature flares and displacement of electricity generated from fossil fuel sources.

The Project started operating its LFG collection and flaring system in October 2009; its electricity generation plant started operation in November 2010 and the production of emission reductions started in June 2011, when the Project registered as a CDM project activity (CDM ID: 3464).

The landfill site occupies a total area of 114.9 ha, with an area of 65 ha planned for municipal waste treatment and disposal. The area around the landfill may be considered humid, with an average annual precipitation of 1,460 mm and an average temperature of 21°C. The climate is classified as "tropical with winter rains".

The landfill began accepting waste in 1975. By the end 2006, more than 17,400,000 m^3 of solid urban waste had been filled over the landfill. The maximum landfill height is about 64 meters. The lifetime of the landfill was 32 years, ending on December 2007.

The scenario existing prior to the start of implementation of the Project is the presence of 123 landfill gas vents (or passive gas wells) installed over the 65-hectare area, venting the gas from inside the waste mass to the top of each vent, only few of them are occasionally lighted on by the landfill management. This scenario is the same as the baseline scenario, as it was clearly demonstrated under CDM Project Design Document.

Consórcio Horizonte Asja needs a total 200 kW installed capacity for satisfying energy requirements of the LFG plant itself (mainly for the blowers) during operation.

[1] As per the GS document outlining the "process for applying GWPs to Gold Standard project activities within the second commitment period of the Kyoto Protocol", a GWP_{CH4} of 25 will be applicable for VER generated in the 2nd commitment period.

The project have a positive impact over sustainable development mainly in the following ways:

a) Environmental Benefits
An environmental benefit achieved by the Project is the destruction of methane that otherwise would be emitted to the atmosphere, thus increasing the impact on global warming. The project also generates electricity from renewable source avoiding the generation of the same amount of energy by fossil fuels to the grid.

b) Social / Income Generation Benefits / Qualified Labour
As landfill gas electricity generation is a whole new venture in Brazil (only a few projects are already generating electricity from landfill gas), new qualified job positions have been created. A team of engineers and operators have been hired and trained in order to run the project and to make continuous monitoring and maintenance of the collecting system, gas station and power house. These job positions receive a salary higher than the one actually paid by the market, as the project needs a more skilled labour force.

Project start date: 07/08/2008.

This date is the date when the concession contract between Municipality of Belo Horizonte and Consórcio Horizonte Asja for the right to exploit the landfill gas arising from wastes at CTRS / BR.040 landfill was signed.

SECTION C. Proof of project eligibility

C.1. Scale of the Project

Please tick where applicable:

Project Type	Large	Small
	☒	☐
	☐	☐
	☐	☐
	☐	☐

	☐	☐

	☐

C.2. Host Country

[See Toolkit 1.2.b]

Host country is Brazil, a Non-Annex I Party. Brazil is eligible for Gold Standard as defined by the UNFCCC.

Cf: http://unfccc.int/parties_and_observers/parties/non_annex_i/items/2833.php

C.3. Project Type

Please tick where applicable:

Project type	Yes	No
Does your project activity classify as a Renewable Energy project?	☐	☒
Does your project activity classify as an End-use Energy Efficiency Improvement project?	☐	☒
Does your project activity classify as waste handling and disposal project?	☒	☐

Please justify the eligibility of your project activity:

The proposed Gold Standard project consists of the collection, transport and treatment system for landfill gas (whose major component is methane) with production of electricity for self-consumption and incorporation to the national grid thus displacing electricity generated from fossil fuel sources.

The proposed project activity meets the Gold Standard eligibility criteria in accordance with the sequence of points indicated in the toolkit V2.2 section 1.2 as follows:

- The proposed Gold Standard project is the collection and destruction of GHGs from landfills in Brazil with production of electricity for self-consumption and incorporation to the national grid thus displacing electricity generated from fossil fuel sources, and therefore classifies as waste handling and disposal techniques that mitigate climate change, promote (local) sustainable development and direct a transition to non-fossil energy systems.
- The project does not have threshold as it classifies as a large scale project.
- The project is located in Brazil, which has ratified the Kyoto protocol and is listed as a Non-Annex I country with no cap GHG emissions.
- No ODA money is used to finance the project (a written declaration of non-use of ODA is provided).
- The proposed project considered at early stages that it will be conducted as a carbon offset project.
- The project reduces CH_4 and CO_2 emissions by destructing GHGs from landfills in Brazil with production of electricity for self-consumption and incorporation to the national grid thus displacing electricity generated from fossil fuel sources, which are two eligible GHGs under GS requirements.
- The start date of the project is before the time of first submission to the Gold Standard thus will undergo a pre-feasibility assessment.
- The project activity will not claim for white certificates (or equivalents) moreover the project does apply for other VCS and CDM certification scheme but it will be checked at verification stage that issuance are delivered only to one scheme to avoid double counting.
- The landfill gas recovery activity is eligible for emission reductions from both methane avoidance (including from the flared biogas fraction) and non‐renewable fuel substitution as the system was designed to make use of (some of) the biogas recovered for the delivery of energy services (electricity, heat) (cf. Annex C)

Indeed, Project has been registered under VCS scheme and CDM scheme (CDM ID: 3464). Project proponent has claimed VERs under VCS for the pre-CDM registration period. The project started

operating in 29/10/2009 but the CDM registration happened only in 04/06/2011.

So, the project has claimed and received VERs under VCS (only) for two vintages (29/10/2009-28/11/2010 and 29/11/2011-03/06/2011) [2]. Then, the project has claimed and received CERs under CDM (only) for one vintage (04/06/2011-30/09/2011) [3].

Project proponent does apply for VCS due to the long validation time under CDM scheme as the start date of the project under CDM scheme is on 07/08/2008 and it finally registered 04/06/2011. Therefore, in order to not loose emission reductions avoided during the pre-CDM period, project proponents claimed its emission reduction under VCS scheme. After its CDM registration, project proponent conducted one verification under the CDM scheme over the monitoring period 4 th June to 30 th September 2011[4]. Eventually, project proponent decided to convert its project to Gold Standard Scheme as it has been aware later on about this carbon offset scheme and due to its high involvement for implementing sustainable development principles that he wants to be recognized.

- The project activity includes emission reductions from both methane avoidance and non-renewable fuel substitution thus is eligible under GS requirements.
- Emission reductions related to the export of electricity generated from the wastes gases recovered is eligible as unique source of energy for the industrial process is renewable energy.
- The project activity will not claim for green or white certificates (or equivalents).

Besides, as assessed in "Meth & tools versions benchmark.xlsx", latest revisions do not lead to any change in the applicability nor affect the project design, thus the project can remain with the same version of PDD and ER spreadsheet submitted and registered under the CDM.

Pre Announcement	Yes	No
Was your project previously announced?	☐	☒
Explain your statement on pre announcement N/A		

C.4. Greenhouse gas

Greenhouse Gas	

[2] *http://www.vcsprojectdatabase.org/#/project_details/897*
[3] *https://cdm.unfccc.int/Projects/DB/SGS-UKL1267696608.78/view*
[4] *https://cdm.unfccc.int/Projects/DB/SGS-UKL1267696608.78/view*

Carbon dioxide	☒
Methane	☒
Nitrous oxide	☐

C.5. Project Registration Type

Project Registration Type	
Regular	☐

Pre-feasibility assessment	Retroactive projects (T.2.5.1)	Preliminary evaluation (eg: Large Hydro or palm oil-related project) (T.2.5.2)	Rejected by UNFCCC (T2.5.3)
	☒	☐	☐

If Retroactive, please indicate Start Date of project activity dd/mm/yyyy: 07/08/2008.

SECTION D. Unique project identification

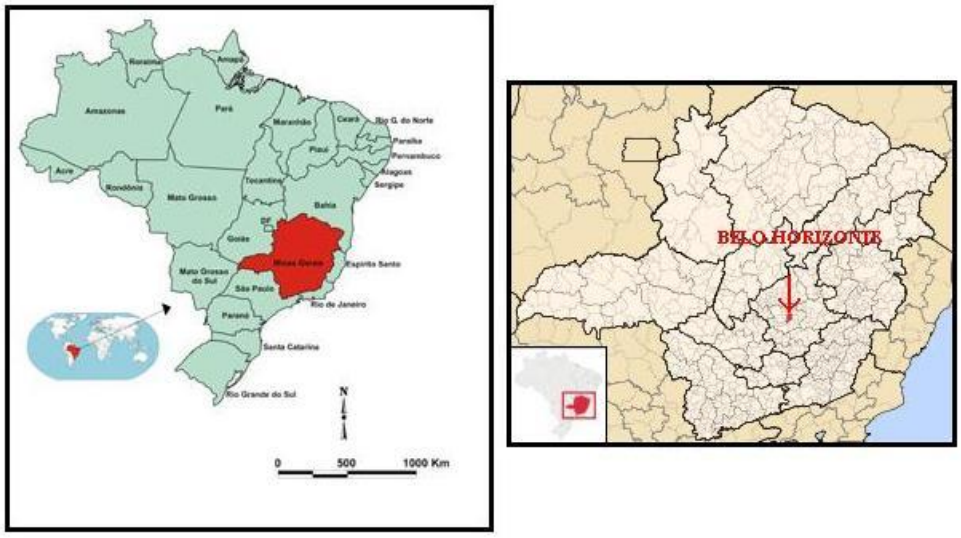
D.1. GPS-coordinates of project location

	Coordinates
Latitude	19° 54' 57.1" S
Longitude	44° 01' 05.1" W

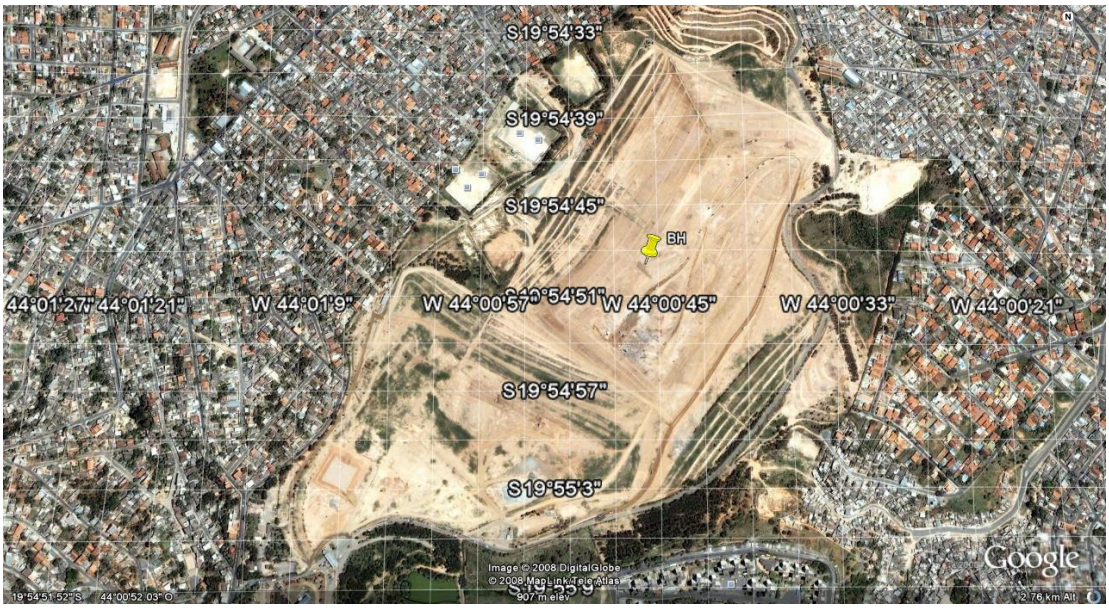
Explain given coordinates

The project is situated in the city of Belo Horizonte, Brazil. GPS coordinates of the landfill site are taken as a reference for the project boundary.

D.2. Map



Picture A.4.1.4-1 Project location



Picture A.4.1.4-2 CTRS / BR.040 landfill location

Source: Google Earth.

SECTION E. Outcome stakeholder consultation process

E.1. Assessment of stakeholder comments

Stakeholder meeting for this retroactive project is not required however one information meeting has been conducted. Stakeholder comments have also been solicited during stakeholder feedback round.

Stakeholder's consultation was held on September 22nd 2014 in Evangelho Quadrangular Church, Bello Horizonte, Brazil.

Local stakeholders were invited through face to face meetings, phone call, mailing, invitation dropped off, online invitation done on the CME's website, in order to encompass the broadest range of relevant people and entity from all background and interest (DNA representatives, Local committees, Neighbour institutions and industries, Media, NGOs, Housewives, Energy experts, local communities).

Invitations were distributed via mail, email and given hand to hand.

List of the 9 stakeholders which attended the consultation is provided in Annex 2. Feedback forms with questions were handed out and 8 feedback forms returned by the participants.

At the meeting, information regarding carbon finance (including the transfer of credit ownership from end user to project implementer), the different participants, a blind exercise was organized, the project, its goal and objectives with expected impacts has been provided. Several questions were raised after the presentation and answered by project participants. Online invitation was also published on CME's website.

Document with comments and list of questions from stakeholders is provided in Portuguese and English translation.

The feedback provided by stakeholders was overwhelmingly positive and there were no comments that were negative or could not be mitigated, thus not requiring any major revision to the project design. Minor concerns about employment creation for community were expressed by three participants; they were answered that whenever possible, people from Belo Horizonte is hired, preferentially from the neighborhood to the landfill. However, it is not always possible due to lack of specialized workers. It was explained to all the stakeholders that this kind of project does not usually generate many labour positions due to technical simplicity and high level of automatization and that the average for similar projects in Germany is of 1,5 employment per plant.
During the implementation stage there were 28 people working in the project, but nowadays there are 4 people there. Today, 3 of the employees are from the city; the fourth has moved to the city recently. Therefore, the project employs more than double the German average.

Stakeholders confirmed the Grievance mechanism described below.

E.2. Stakeholder Feedback Round

Invitation for Stakeholder Feedback Round (LSFR) has been sent to all stakeholders having participated to the Local Stakeholder Consultation hold for the CDM (previous consultation activities), to all GS NGOs supporters and national policy makers. Details regarding consultations for CDM scheme are provided under CDM PDD of the project.

Stakeholder Feedback Round started on 20.08.2014 at the time of all stakeholders and GS NGO supporters have been sent the project passport and were told where and how to report their comments and last till 19.10.2014 once pre-feasibility assessment step has been done by GS.

Moreover, soft copies of the project passport has been made available online on the company's website and hard copies have also been made available in different type of location:

1) Project owner Office, at Rodovia BR.040, 1200, Bairro Califórnia, CEP 30855-500, Belo Horizonte, Minas Gerais, Brazil.

2) the CEAME Pindorama – Centro Integrado de Atenção ao Menor[5], at Rua Guararapes 1810, Bairro Pindorama, CEP 30865-000, Belo Horizonte, Minas Gerais, Brazil.

3) Asja Brasil Serviços para o Meio Ambiente Ltda. office, at Avenida Professor Mário Werneck, 26, room 801, Bairro Estoril, CEP 30455-610, Belo Horizonte, Minas Gerais, Brazil.

This Stakeholder Feedback Round covered all issues raised in the local stakeholder consultation hold for CDM and how due account was taken following the stakeholders' comments.

The project passport was open to further comments for a duration of 60 days starting the 20.08.2014;

Beyond, a continuous improvement/grievance mechanism system is granted as described in the project passport.

No comments have been received during the SFR.

E. 3. Discussion on continuous input / grievance mechanism

The Continuous input / grievance mechanism expression method and details, will be discussed with local stakeholders during Stakeholder Feedback Round as follows. Methods of input will be explained and discussed. Detailed methods below will be confirmed the most appropriate by stakeholders for providing with their inputs.

A transparent communication channel with local stakeholders throughout will be maintained during the crediting period of the project, in addition to the previous consultation activities and SFR.
Detailed methods below will be confirmed the most appropriate by stakeholders for providing with their inputs.

It will be agreed with stakeholders that they will be able to provide their inputs through the channels described in the table below:

	Method Chosen (include all known details e.g. location of book, phone, number, identity of mediator)	**Justification**

[5] *The CEAME Pindorama – Centro Integrado de Atenção ao Menor is a public institution where communities are used to meet and where project proponent usually does meetings with the local community.*

Continuous Input / Grievance Expression Process Book	Avenida Professor Mário Werneck, 26, sala 801, Bairro Estoril, CEP 30455-610, Belo Horizonte – MG, Minas Gerais, Brazil	The project owner's office is publicly disclosed and opened to beneficiaries.
Telephone access	Melina Yurie Uchida: +55 31 32863311	Consórcio Horizonte Asja is coordinating the implementation and can directly receive input through its office in Belo Horizonte.
Internet/email access	Melina Yurie Uchida: m.uchida@aria-co2.com	
Nominated Independent Mediator (optional)	N.A.	No mediator is necessary as close contact between Consórcio Horizonte Asja and the local communities will be maintained at all time through their local office.
GS Regional Manager	Ivan Hernandez: Email: ivan.hernandez@goldstandard.org	GS is the entity for final issuance of carbon credits and can directly receive input and communicate with CME.

All inputs received through grievance mechanism will be continuously monitored according to the following arrangement:

- Process book will be check on a monthly basis and comments made by stakeholders will be recorded and answered appropriately. All comments and answered will be compiled annually.
- Telephone call from stakeholders having a comment will be then recorded in writing and comment will be answered. All comments and answers will be compiled annually.
- E-mail from stakeholders having a comment will be recorded and comment will be answered. All comments and answers will be compiled annually.
- All comments and answered provided by project proponent through various expression channels will be compiled in monitoring report.

Additionally, according to the recommended best practice for continuous Input & Grievance Expression from Stakeholders (local governance meetings):

- Annual project open days to allow stakeholders to visit the site and see the project will be organized;
- A meeting (e.g. coincide with training and repairs, or at the same time as DOE verification site visits) that included general information about the project, education about climate change and carbon offsetting, etc. will be organized.

A field agent will be in charge of monitoring grievance mechanism.

SECTION F. Outcome Sustainability assessment

F.1. 'Do no harm' Assessment

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
Human Rights			
1 – The project respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people. The project is not complicit in Human Rights abuses.	The project will protect human rights including freedoms and cultural property. Consórcio Horizonte Asja elaborated human rights statements referring explicitly to its commitment to human rights. Moreover, Brazil has ratified the Universal Declaration of Human Rights.[6]	low	N.A.
2 – The project does not involve and is not complicit in involuntary resettlement.	Since the project is implemented at an existing landfill site where area was already used for landfilling, it does not involve and is not complicit in any resettlement, voluntary or involuntary.	low	N.A.
3 – The project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage	The project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage.	low	N.A.
Labour Standards			
4 – The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights	Employees of the project activity have freedom of association and right to collective bargaining as Brazil has ratified the ILO conventions 87 and 98.[7]	low	N.A.

[6] *http://www.un.org/Overview/rights.html*
[7] *http://www.mondaq.com/x/54604/employee+rights+labour+relations/The+Impact+Of+ILOS+Conventions+Regarding+Freedom+Of+Association+In+Brazil*

	"Consórcio Horizonte Asja" respects and supports the rights of employees to freedom of association and collective bargaining. It is explicitly referred under Corporative declarations (human right statements and code of business of conducts documents) from Consórcio Horizonte Asja referring to the rights of employees to freedom of association and collective bargaining.		
5 – The project does not involve and is not complicit in any form of forced or compulsory labour	Brazil has ratified both ILO Convention 29 and 105 on elimination of forced and compulsory labour. [8] Project proponent will follow Brazilian law as it is registered with Brazilian administration including ILO Convention 29 and 105 on elimination of forced and compulsory labour. It is explicitly referred under Corporative declarations from Consórcio Horizonte Asja (human rights statements and code of business of conducts) referring to elimination of forced and compulsory labour]. All employees are able to terminate their employment voluntarily.	low	N.A.

8 *http://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312174http://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312250*

6 – The project does not employ and is not complicit in any form of child labour	Child labour will not be employed; the project adheres with ILO conventions 138 (minimum age) and 182 (worst forms of child labour) ratified by Brazil. [9] Project proponent will follow Brazilian law as it is registered with Brazilian administration including ILO conventions 138 (minimum age) and 182 (worst forms of child labour). It is explicitly referred under Corporative declarations from Consórcio Horizonte Asja (human rights statements and code of business of conducts).	low	N.A.
7 – The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.	Brazil has ratified ILO conventions 100 (equal remuneration) and convention 111 (Discrimination in employment/occupation). Labour discrimination will not occur. [10] It is explicitly referred under Corporative declarations from Consórcio Horizonte Asja (human rights statements and code of business of conducts) that Consórcio Horizonte Asja provides equal opportunity in all aspects of employment and will not tolerate any illegal discrimination or harassment of any kind.	low	N.A.

[9] *http://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312283*
http://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312327
[10] *http://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312245*
http://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312256

8 – The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments.	The project involves potential exposure of workers to unhealthy, hazardous or dangerous work environments since working environment of LFG Recovery systems and Electricity Generation Plants that includes electrical and mechanical components represent medium risk for project workers. Mitigation measures will include proper training for all workers, and distribution and usage of protective equipment.	medium	It is explicitly referred under the environmental management plan provided including training session organized and certificate (directly included in the management plan) as well as personal protection equipment.
Environmental Protection			
9 – The project takes a precautionary approach in regard to environmental challenges and is not Complicit in practices contrary to the precautionary principle.	The project will destroy methane that otherwise would be emitted to the atmosphere thus increasing the impact on global warming, and directly benefit to the population by reducing local air pollution. The project will also generate electricity from renewable source avoiding the generation of the same amount of energy by fossil fuels to the grid. Besides, Brazil ratified the Rio Declaration on Environment and Development.[11] It is explicitly requested	low	N.A.

[11] *http://www.postsustainabilityinstitute.org/which-nations-signed-agenda-21.html*

	under the concession contract and the environmental license of Consórcio Horizonte Asja[12] that the company engages itself to respect all Environmental laws of Brazil.		
10 – The project does not involve and is not complicit in significant conversion or degradation of critical natural habitats, including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value, or (d) recognized as protected by traditional local communities	The project will prevent the degradation of habitats due to improvement of air quality and preservation of water quality. It does not require additional land or displacement of natural habitats since it is implemented at existing landfilled. It is explicitly referred under Corporative declarations from Consórcio Horizonte Asja (human rights statements and code of business of conducts) that Natural habitats will not be degraded or converted through the implementation of the project or any other company's activities.	low	N.A.
Anti-corruption			
11 – The project does not involve and is not complicit in corruption	Brazil ratified the United Nations Convention Against Corruption[13]. It is explicitly referred under Corporative declarations from Consórcio Horizonte Asja (human rights statements and code of business of conducts) that employees	low	N.A.

[12] *Copy and partial translation of the concession contract are provided*
[13] http://www.unodc.org/unodc/en/treaties/CAC/signatories.html

	may not bribe anyone for any reason, whether in dealings with governments or the private sector.		

Statement of warranty

I am the Project Representative/Project Owner of the project. The information stated above is true and accurate to the best of my knowledge.

I understand and agree that The Gold Standard may request independent verification of adherence to these principles at any time. I further understand and agree that The Gold Standard may reject the project and, in its discretion, announce the rejection of the project if any of the Do No Harm principles outlined above are violated, or if any of the information stated above is proven to be false or inaccurate.

Name: Walter Dantas Rodrigues

Signature: _____

Date: December 15th, 2014

On behalf of: Consórcio Horizonte Asja

F.2. Sustainable Development matrix

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
Gold Standard indicators of sustainable development.	**If relevant copy mitigation measure from "do no harm" –table, or include mitigation measure used to neutralise a score of '–'**	Check **http://www.mdgtrack.org/** **Describe how your indicator is related to local MDG goals**	**Defined by project developer**	Negative impact: score '-' in case negative impact is not fully mitigated score 0 in case impact is planned to be fully mitigated No change in impact: score 0 Positive impact: score '+'
Air quality	None	MDG 7: Ensure environmental sustainability 7.A Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources 7.B Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	Parameter: Odor Explanation: Project is collecting and flaring Land fill gas including hydrogen sulphide responsible of strong and unpleasant odor. Without the implementation of the project, LFG generated from the landfill would have been released into the atmosphere directly leading to undesirable odors.	+
Water quality and quantity	None	**MDG 7: Ensure environmental sustainability** 7.C Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.	Parameter: Amount of leachate run off discharged to the water bodies of the project environment by project activity. Explanation: Main impacts of landfill sites on	0

			water quality are the generation of leachate. Leachate can be described as water-based solution of dissolved organic, inorganic matter and heavy metals from municipal, commercial and mixed industrial waste. Leachate from a landfill varies widely in composition depending on the age of the landfill and the type of waste that it contains.	
Soil condition	None	MDG 7: Ensure environmental sustainability 7.A Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	Parameter: Amount of leachate run off discharged to the soil of the project environment by project activity. Explanation: Main impacts of landfill sites on water quality are the generation of leachate. Leachate can be described as water-based solution of dissolved organic, inorganic matter and heavy metals from municipal, commercial and mixed industrial waste. Leachate from a landfill varies widely in composition depending on the	0

			age of the landfill and the type of waste that it contains.	
Other pollutants	None	MDG 7: Ensure environmental sustainability 7.A Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	Parameter: Amount of noise, emissions from flare, emissions from engines and dangerous wastes. Explanation: Noise, emission from flare, emissions from engines and dangerous wastes are identified under the environmental license of the project owner as pollutants to be monitored annually to ensure they remain under the national environmental limit.	0
Biodiversity	None	MDG 7: Ensure environmental sustainability 7.B Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	Parameter: None	0
Quality of employment	The staff will be trained to be capable of working in the project both in terms of safety (health and safety trainings) and competence (landfill gas technology and power plant related trainings).	MDG1: Eradicate extreme poverty and hunger 1.B Achieve full and productive employment and decent work for all, including women and young people	Parameter: Number of employees having project-related trainings (health and safety & landfill gas incineration technology/power plant) Explanation: Project developer ensures high standard health and safety	+

			conditions for the employees. Project developer is implementing national regulation through the implementation of a health and safety program, which is annually renewed. Providing sufficient training of concerned employees in the functioning and management of the project activity, is a pre-condition for the successful implementation of the project and empowers and builds up capacity of workers.	
Livelihood of the poor	None	MDG1: Eradicate extreme poverty and hunger	Parameter: Changes in living standards, number of people living under the poverty line Explanation: Income generation by local recruitment with project activity will have indirect impacts to changing living standards of the local people and number of people living under poverty line.	0
Access to affordable and clean energy services		MDG 7: Ensure environmental sustainability 7.A Integrate the principles of sustainable development into country policies	Parameter: Change in percentage of Brazilian people energy use (before versus after project implementation)	0

		and programmes and reverse the loss of environmental resources	Explanation: The project will generate electricity and supply it to the Brazilian consumers via grid-connection. Since the project utilizes renewable energy resources to provide electricity, and can also improve environmental quality and reduce greenhouse gas emissions, it provides access to clean energy services to the Brazilian residents.	
Human and institutional capacity	None	MDG1: Eradicate extreme poverty and hunger 1A Halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day.	Parameter: Change in income distributions by socio-economic groups &public participation, education and skills Explanation: Local employment opportunities created by the project will have an impact on income distribution on different socio-economic groups. The project improves the human and institutional capacity through involvement of stakeholders.	0
Quantitative employment and income	None	MDG1: Eradicate extreme poverty and hunger	Parameter: Number of jobs created	

generation		1A Halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day.	Explanation: The project will create new employments in the project area.	+
Balance of payments and investment	None	MDG8.D: Develop a global partnership for development Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term.	Parameter: Foreign currency savings and imports of equipment and technology. Explanation: If equipment and technology is imported the host country will need tp pay in the foreign currency. Local production and purchase is thus a pre-condition for foreign currency savings.	0
Technology transfer and technological self-reliance	None	MDG 8.F: In cooperation with the private sector, make available the benefits of new technologies, especially information and communications.	Parameter: Introduction of advanced technologies on landfill gas utilization (heat, electricity) and related capacity building activities Explanation: Parameter refers to the process of transferring skills, knowledge, technologies, methods of manufacturing, samples of manufacturing and facilities	0

Justification choices, data source and provision of references

Air quality	Landfill sites create risks for public health and the environment when emissions are not controlled. Air quality will be improved compare with baseline. In the baseline,

	the landfill gas is emitted to atmosphere directly. The landfill gas contains gases contaminating the air including hydrogen sulphide (H_2S) which not only results in a strong and unpleasant odor but also can be harmful to human health. Air quality will improve from the baseline because of captured biogas and reduced odor. Odor improvement due to project implementation will be monitored. Therefore, in the SDM the positive effect of the project on the air quality is scored with (+).
Water quality and quantity	In the proposed project, leachate will be collected and treated. Leachate management from project activity will be managed by project operator. Leachate management is the same under baseline and project scenario as it is mandatory by the law. According to Social and environmental impact assessment conducted by the project owner, there is no impact of the project on water quality and quantity. During operation of project activity, only small amounts of waste water is discharged in the environment. Wastewater production is due to daily consumption by workers, an amount, which is assumed to be very small thus negligible.
Soil condition	Leachate leads to soil contamination when not controlled. As it is enforced by law to collect leachate, there will be no change between the baseline and the project scenario[14]. Therefore, in the SDM the effect of the project on the soil condition is scored neutral (0). (cf. Indicator "Water quality and quantity")
Other pollutants	This project has no significant emission of other pollutants.. Annual report of year 2013 is provided demonstrating that low impact is expected from other pollutants. Since this indicator is scored zero and no mitigation measure is required and the chosen parameter will not be monitored.
Biodiversity	The proposed project does not have any impact on the surrounding biodiversity. Project Appraisal Document report No 32475-AR from the World Bank on a land fill gas project where no impacts over biodiversity and habitat are identified is provided. Moreover the project is taking place at the current municipality discharge thus no land change is involved. Consequently, the indicator is scored zero.
Quality of employment	Project developer will ensure healthy and safe working conditions for the employers with internal procedures and equipment. [15] Trainings will be provided to concerned plant staff before starting their work. Some of the technical personnel will have

[14] *Leachate is being collected since the start of waste landfilling and it was improved with the project activity. Leachate removal pumps and leachate station (where the many small portions of leachate are summed to be sent to the sewage treatment station) can be seen during the site visit.*
[15] *Health and safety certificates of training followed by employees are provided together with management manual and its partial translation, where all training and frequency followed by project staff is described .*

	training to get certificate for working at high voltage level as well as with landfill gas collector. All H&S trainings will be in accordance with regulations of Ministry Labour and Social Security[16]. Moreover, operation related trainings (landfill gas technology and power plant related trainings) will be given to the employees involved. Trainings and certificates provided will increase their capacity to work in the project's environment. It is possible that the project will improve quality of employment. Therefore, this indicator is scored with positive impacts (+).The chosen parameter, which is Health & Safety conditions of the employers requires monitoring measures, thus will be monitored as described in the SD Monitoring Plan.
Livelihood of the poor	With the Project activity, electricity access will potentially be improved and income of local people employed in the plant will increase. Both could have an impact on overall spending in the region. It is planned that during construction and during operation staff will be employed in the plant. Since monitoring of direct positive impacts of this parameter on livelihood of the poor is difficult, this parameter is scored neutral (0) in the SDM to be conservative. Since this indicator is scored zero and no mitigation measure is required, chosen parameter will not be monitored.
Access to affordable and clean energy services	As a local energy source, landfill gas power plant projects help to get clean energy. However, as electricity generated is consumed by the project owner and directly delivered to the grid, and cannot be assigned to specific consumers (and at the same price), the parameter cannot be monitored; a conservative score of zero is applied to this indicator. The project will have no impact on access to and affordability of services in the local area or to households as the electricity is exported to the Brazilian grid. Since this indicator is scored with zero and there is no mitigation measure for this indicator, chosen parameter, i.e. change in energy use of local people, will not be monitored.
Human and institutional capacity	With the project activity, income of local people employed in the plant will increase which will also have impact on income and asset distributions by socio-economic groups. Project developer hired personnel for construction and operation of the project from surrounding settlements. Although the project will contribute to the income of local people, it is not possible to monitor it. The project will contribute to increasing the knowledge and awareness through involvement of stakeholders. However, the overall benefits are not significant. Since the human and institutional capacity is likely to improve insignificantly on an overall level, this indicator is scored neutrally. Therefore, no mitigation measure is required and the chosen parameter will not be monitored. A neutral score is in line with the conservativeness principle.

[16] *CHA keeps a Management Manual with instructions and internal procedures. New employees receive training before start working and a certificate is provided. A sample of training certificates together with management manual is provided.*

Quantitative employment and income generation	Thanks to the project implementation, jobs will be created for local workers from surrounding communities. During construction staff has been hired and during operation it is planned that staff will be employed. Since this indicator is scored with positive (+) in the SDM, it will be monitored as explained in the monitoring plan.
Balance of payments and investment	Compared to the baseline scenario, there is no significant difference in terms of balance of payments and investment because no foreign currency saving has been made due to the project and the project owner will import equipment technology for the project only once at the beginning of implementation but no other goods will be continuously imported for marketing. The indicator is thus scored neutral (0)
Technology transfer and technological self-reliance	The technologies used are state-of-the-art technologies of landfill gas collection, treatment, and transport system with energy generation used in the developed countries. In light of the common practice in Brazil, which is the entire release of landfill gas into the atmosphere (cf. section B.4 of PDD), the project is likely to lead to transfer of knowledge and technology on waste management and electricity generation using landfill gas. Furthermore, it will contribute to management skills and capacity development. Technology transfer takes place due to: - Technology know how is coming from Italy - Equipment is coming from Austria and Italy - Brazilian staff came to Europe to be trained and now train new staff members in Brazil - Trainer come from Europe onsite on a regular basis to follow up on the plant implementation the equipment comes with a user manual. the real impact is difficult to monitor and taking into account past experiences, a neutral score is given in line with the conservativeness principle. Therefore, the parameter will not be monitored.

SECTION G. Sustainability Monitoring Plan

No	1
Indicator	Air Quality
Mitigation measure	None
Chosen parameter	Odor
Current situation of parameter	Without the implementation of the project, biogas generated from the LFG would have been released into atmosphere directly, which would emit undesirable odors.

Estimation of baseline situation of parameter		Not Applicable
Future target for parameter		Odor to be significantly reduced. 100% destruction of H_2S.
Way of monitoring	How	Basically the chemichal formulae for destruction of sulfide responsible of odour is $H_2S + O_2$ + Heat (as in a flaring system or in an incinerator) --> $SO_2 + H_2O$. It is exactly what happens to CH_4. $CH_4 + O_2$ + heat --> $CO_2 + H_2O$. So, it can be assumed that the same efficiency for CH_4 conversion into CO_2 is valid for H_2S conversion into SO_2. It is confirmed from local expert in land fill gas by email. Consequently, it is possible to monitor methane destruction and apply same efficiency destruction to H_2S. Consequently, default value for methane destruction in engine (for electricity production) is 100% thus H_2S destruction is taken at 100% and is monitored when flaring is used. Quantity of H_2S destroyed is taken at 1% of total landfill gas produced (see Table 2-1)"[17] By monitoring quantity of landfill gas produced, it is possible to deduct the quantity of H_2S destroyed as 1% of landfill gas is H_2S and by applying the efficiency factor for destruction of H_2S it is possible to deduct exact quantity of H_2S destroyed.
	When	Continuously
	By who	Field Agent

No	2
Indicator	Quality of employment
Mitigation measure	None
Chosen parameter	Number of employees having trainings on * Landfill gas technology and power plant operation * Health & Safety issues
Current situation of parameter	None
Estimation of baseline situation of	Not Applicable

[17] Cf. http://www.atsdr.cdc.gov/hac/landfill/html/ch2.html

parameter		
Future target for parameter		• at least 11 concerned employees trained jn “Operation of HDPE pipe welding lines and management of H_2O removal system in biogas” during 2008-10 • at least 12 concerned employees trained in “General functioning of the plant” during 2009-13 • at least 7 concerned employees trained in “Functioning and maintenance of vacuum cleaners, biogas treatment plant and enclosed flares” during 2008-10 • at least 2 concerned employees trained in “Biogas - Analysis: Functioning, maintenance, and calibration of fixed and portable analyzers” during 2009-10 • at least 11 concerned employees trained in “Drilling and installation of wells” in 2009-11 • at least 2 concerned employees trained in “Calibration of metering substations” in 2008 • at least 2 concerned employees trained in “fire prevention and control, firefighting and first aid” in 2014 • at least 7 concerned employees trained in “prevention of work-related accidents” in 2013-14 • at least 9 concerned employees trained in “first aid” in 2013
Way of monitoring	How	Training certificates or records for attendance to the trainings, with information on training course, date, and number of attendees and length, etc. In the following years, only new trainings will be reported.
	When	Once during the first verification, only certificates of new employees will be provided at the end of the each monitoring period
	By who	Health and Safety Manager; Responsible for Technical Matters

No	3
Indicator	Quantitative employment and income generation
Mitigation measure	No mitigation measures are required.
Chosen parameter	Number of employment
Current situation of parameter	0
Estimation of baseline situation of	Not applicable

parameter		
Future target for parameter		28 employees during project construction, 5 employees after project construction
Way of monitoring	How	Social security records of the employees
	When	Once at the end of each monitoring period
	By who	Human Resources manager

No		4
Indicator		Work environment safety and healthiness
Mitigation measure		Training (certificates) and personal protection equipment
Chosen parameter		Number of reported safety incident / health-related issues
Current situation of parameter		0
Estimation of baseline situation of parameter		Not applicable
Future target for parameter		N/A
Way of monitoring	How	Through the Programa de Controle Médico da Saúde Ocupacional (PCMSO - Program for Medical Control of Occupational Health), summarized yearly in a report from the doctor responsible for the company's labour health program, based on the results of all medical exams employees have passed in the period.
	When	Annually
	By who	Doctor in charge

Additional remarks monitoring

The name of the measuring technician/field agents/staff in charge of the monitoring cannot be given as no employer is assigned yet by Plant Manager. Name of staffs and their responsibilities will be submitted to DOE during each verification period.

SECTION H. Additionality and conservativeness

This section is only applicable if the section on additionality and/or your choice of baseline does not follow Gold Standard guidance

H.1. Additionality

N/A

H.2. Conservativeness

N/A

ANNEX 1 ODA declaration

Signed on May 15, 2014 and uploaded to the Gold Standard Registry.

ANNEX 2 Live meeting attendance list

CONSÓRCIO HORIZONTE ASJA

PLANO DE COMUNICAÇÃO À COMUNIDADE VIZINHA AO ATERRO

Belo Horizonte, 22 de setembro de 2014.

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