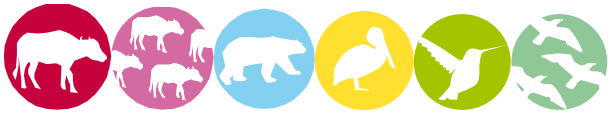
ANNEX R – PASSPORT TEMPLATE

CONTENTS



SECTION A. Project Title

Title: "GS3434 Uberlândia landfills I and II", hereinafter referred to as "the Project"

Date: 30.10.2015

Version no.: 1.4

SECTION B. Project description

The objective of the Uberlândia landfills I and II is to collect the landfill gas produced in the Uberlândia Landfill and use it to generate electricity. A total capacity of 2.852 MW will be installed, composed by 2 engines with individual capacity of 1.426 MW each. The project is expected to export 421,071 MWh during its lifetime.

Uberlândia Landfill comprises two adjoining solid waste disposal sites (SWDS), named Landfill I and Landfill II, both owned and operated by Limpebrás Resíduos Ltda. (Project Participant). The Landfill I started operating in July of 1995 and stopped receiving waste in September 2010. During the 15 years of lifetime, Landfill I received around 2,100,000 tonnes of domestic waste, disposed in 150,000 m^2 of a total area of 300,000 m^2, being operated under the most strict environmental care, for which the landfill was awarded with the Borboleta de Ouro prize, given by the state environment entity, Fundação Estadual do Meio Ambiente – FEAM, as the best landfill of Minas Gerais state.

The Landfill II started operating in October 2010 with the same environmental care applied to the previous disposal site and counts on a qualified and multidisciplinary team of technicians. The landfill has a total area of 300,000 m^2, with 200,000 m^2 dedicated to disposal of waste, being able to receive till 4,500,000 m^3 of solid waste for an approximately 18 years of lifetime. All the area was sealed with a membrane of High Density Polyethylene (HDPE) and compacted clay in order to protect the phreatic layer from contamination.

The leachate generated in each landfill is given a different treatment. For Landfill I the leachate is treated at an ascendant flow anaerobic reactor followed by an anaerobic filter and then sent to the Uberabinha's sewage treatment station (ETE Uberabinha) through municipal canalization. The leachate from Landfill II, after being analysed by the Municipal Department of Water and Sewage (Departamento Municipal de Água e Esgoto – DMAE), was authorized to be directly sent to the ETE Uberabinha without previous treatment.

In this Project the Landfill I and the Landfill II were considered as a sole SDWS, since the area surrounding the two sites, including them, is owned and operated by Limpebrás Resíduos Ltda. and they are physically near enough to permit the joint operation. In fact, only a 27 m width road used exclusively for the landfilling operation separates the two sites, and the gas station and power plant of the proposed project activity are planned to be installed on the roadside between the Landfill I and Landfill II. Therefore, the estimative of emissions of methane from SWDS considered the two sites as one single SWDS.

The scenario existing prior to the implementation of the Uberlândia landfills I and II project activity at the Uberlândia Landfill is the operation of the landfill with uncontrolled emission of the LFG (landfill

gas) generated to the atmosphere, i.e. the LFG generated due to the decomposition of the organic matter is vented through the vertical wells installed at the landfill's area. As will be demonstrated ahead, the existing scenario and the baseline scenario are the same.

Emissions associated with the baseline scenario are the CH_4 emissions[1] due to the atmospheric release of the LFG and CO_2 emissions due to the power generation from fossil-fuel power-plants. With the implementation of the project, the LFG previously released will be collected through the installation of pipelines and emission reduction will be achieved through the destruction of the gas collected in a flaring system and in the power plant. Additionally, the project will export renewable electricity to the grid, avoiding the dispatch of the same amount of electricity from fossil-fuel based power plants in the Brazilian National Grid.

The project will bring benefits to sustainable development, as follows:

- *Increase of local environmental quality:* the project will contribute not only through the avoidance of GHG emissions to the atmosphere, but also by displacing the fossil fuel consumption from power plants connected to the Brazilian Electric Grid. The project might also be seen as a good practice of correct solid waste final disposal;

- *Labour capaciting / Income generation:* the project will need qualified operators to maintain the gas collection wells and pipeline and to operate the degassing station and the power plant. A team composed by engineers and technicians will be created and trained by international consultants and manufacturers. The revenues of these personnel will be above the market, as the technology employed is new in the Uberlândia region;

- *Integration with different sectors:* using LFG to generate electricity is relatively new in Brazil – some projects were developed only under the CDM and only a few of them are indeed generating electricity (like the Bandeirantes Landfill Gas to Energy Project, São João Landfill Gas to Energy Project and Exploitation of the biogas from Controlled Landfill in Solid Waste Management Central – CTRS / BR.040). Therefore, the project will have an enormous contribution over the integration with the electric sectors.

Project start date: 03/05/2011

This is the date of creation of Energas Geração de Energia Ltda., composed by Limpebrás Resíduos Ltda. and Asja Brasil Serviços para o Meio Ambiente Ltda. exclusively for the development of the Project.

- CDM project ID: 7110

[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.

SECTION C. Proof of project eligibility

C.1. Scale of the Project

Please tick where applicable:

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

	☐

C.2. Host Country

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 [2] 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 CDM certification scheme (CDM ID: 7110) but it will be checked at verification stage that issuance are delivered only to one scheme to avoid double counting.

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

[2] 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.

Greenhouse Gas	
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: 03/05/2011.

SECTION D. Unique project identification

D.1. GPS-coordinates of project location

	Coordinates
Latitude	1918.878361° S
Longitude	48.318583° W

Explain given coordinates

The project is located at the industrial area of Uberlândia, Minas Gerais State, Brazil, at Estrada do Salto s/n. GPS coordinates of the landfill site are taken as a reference for the project boundary.

D.2. Map

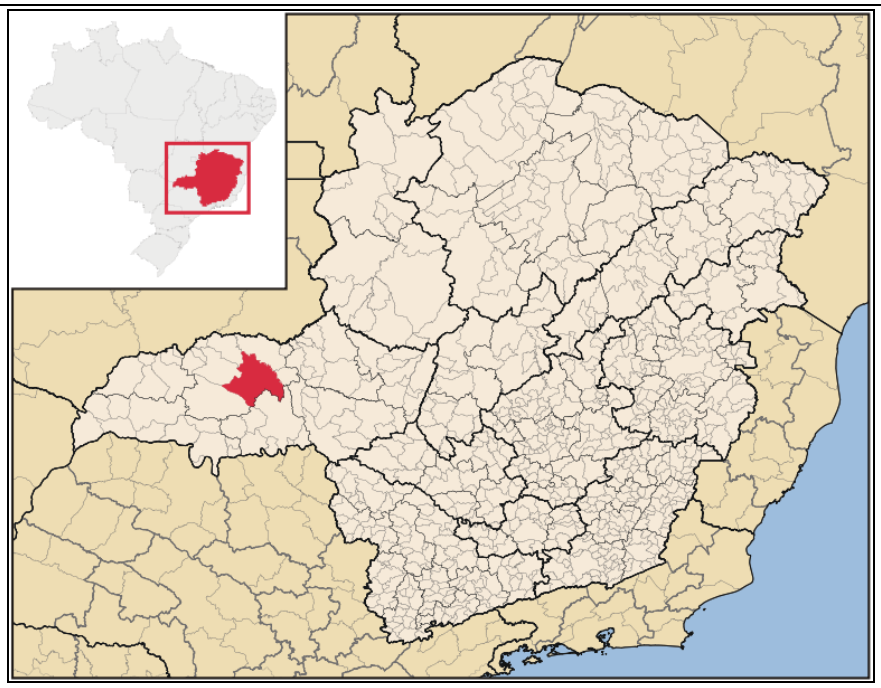


Figure 1: Location of Minas Gerais State and Uberlândia.

Figure 2: Location of the Landfill inside Uberlândia.

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 November 28th 2014, Uberlandia, 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 18 stakeholders which attended the consultation is provided in Annex 2. Feedback forms with questions were handed out and 10 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. The blind exercise consisted in filling in anonymously forms, on which PP and stakeholders needed to assess (positive, negative, or neutral) the Sustainable Development contribution of the project along several indicators (air quality, biodiversity, employment etc). The stakeholders's opinion about the project was good, in many cases, better than PP's opinion.

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 were 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. Suggestion to provide with local telephone number contact, to make the communication with the community easier, avoiding necessity of making long distance calls was received and answered by providing new telephone number and it has been updated in grievance mechanism.

Minor concern about employment creation for community was expressed by one participant; they were answered that whenever possible, people locally 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.

Stakeholders confirmed the Grievance mechanism described below with update on the telephone

number as described above.

E.2. Stakeholder Feedback Round

Outcomes of stakeholder feedback round will be reported here.

Invitation for Stakeholder Feedback Round (LSFR) will be 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 (section E)[3].

Stakeholder Feedback Round started on 11.11.2014 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 lasted till 10.01.2015 once pre-feasibility assessment step has been done by GS.

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

1) Project owner Office

2) Asja Brasil Serviços para o Meio Ambiente Ltda. Office

3) Limpebrás Resíduos Ltda. Office

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 opened to further comments for a duration of 60 days starting the 11.11.2014;

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

No comments have been received during the SFR.

[3] Copy of invitation letters and stakeholder's answer are provided.

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**
Continuous Input / Grievance Expression Process Book	Rodovia BR-452, s/n, km 123.8, Anel Viário, Setor A, Distrito Industrial, Minas Gerais, Uberlândia, Brazil	The project owner's office is publicly disclosed and opened to beneficiaries.
Telephone access	Melina Yurie Uchida: +55 31 32863311 Energas' office at Uberlandia plant: +55 34 32133776	Asja Brasil Serviços para o Meio AmbienteLtda. is coordinating the implementation and can directly receive input through its office in Belo Horizonte and Energas' office in Uberlandia
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 Energas Geração de Energia Ltda. 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. Energas Geração de Energia Ltda. elaborated human rights statements referring explicitly to its commitment to human rights and under Annex III of "Projeto de Gas de Aterro Uberlândia I e II". Moreover, Brazil has ratified the Universal Declaration of Human Rights.[4]	low	N.A.

[4] *http://www.unspecial.org/UNS679/t21.html*

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.[5] "Energas Geração de Energia Ltda." 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 Energas Geração de Energia Ltda. referring to the rights of employees to freedom of association and collective bargaining.	low	N.A.
5 – The project does not involve and is not complicit in any form of forced or	Brazil has ratified both ILO Convention 29 and 105 on elimination of	low	N.A.

[5] *http://www.mondaq.com/x/54604/employee+rights+labour+relations/The+Impact+Of+ILOS+Conventions+Regarding+Freedom+Of+Association+In+Brazil*

compulsory labour	forced and compulsory labour. [6] 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 Energas Geração de Energia Ltda. (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.		
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. [7] 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 Energas Geração de Energia Ltda. (human rights statements and code of business of	low	N.A.

[6] *http://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312174*
http://www.ilo.org/dyn/normlex/en/f?p=1000:11300:0::NO:11300:P11300_INSTRUMENT_ID:312250
[7] *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

	conducts).		
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.[8] It is explicitly referred under Corporative declarations from Energas Geração de Energia Ltda. (human rights statements and code of business of conducts) that Energas Geração de Energia Ltda. provides equal opportunity in all aspects of employment and will not tolerate any illegal discrimination or harassment of any kind.	low	N.A.
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	medium	It is explicitly referred under the environmental management plan provided including training session organized and certificate (directly included in the management plan). The health and safety

[8] *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

	protective equipment.		programs are managed by Limpebrás Resíduos Ltda. EHS department.
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.[9] It is explicitly requested under the environmental license of Energas Geracao de Energia Ltda.[10] that the company engages itself to respect all Environmental laws of Brazil.	low	N.A.
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	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	low	N.A.

[9] *http://www.postsustainabilityinstitute.org/which-nations-signed-agenda-21.html*
[10] *Copy and partial translation of the concession contract are provided*

authoritative sources for their high conservation value, or (d) recognized as protected by traditional local communities	natural habitats since it is implemented at existing landfilled. It is explicitly referred under Corporative declarations from Energas Geracao de Energia Ltda. (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.		
Anti-corruption			
11 – The project does not involve and is not complicit in corruption	Brazil ratified the United Nations Convention Against Corruption[11]. It is explicitly referred under Corporative declarations from Energas Geracao de Energia Ltda. (human rights statements and code of business of conducts) that employees may not bribe anyone for any reason, whether in dealings with governments or the private sector.	low	N.A.

[11] *http://www.unodc.org/unodc/en/treaties/CAC/signatories.html*

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: _____

Signature: _____

Date: _____

On behalf of: _____

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 www.undp.or/mdg and www.mdgmonitor.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: Odour Explanation: Project is collecting and flaring Land fill gas including hydrogen suphide responsible of strong and unpleasant odor. Without the implementation of the project, LFG generated from the landfill would have been released into atmosphere directly with undesirable odours. Annex III under which project objectives regarding sustainable development including Air quality improvement	+

			(odour) are described.	
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: According to Social and environmental impact assessment, no impact of the project over water quality and quantity is identified. Leachate management from project activity will be managed by landfill operator. The leachate collected by Energas Geracao de Energia Ltda. is sent to the leachate treatment system already existent in the baseline. The effectiveness of leachate extraction has increased, but the collection and treatment system was existent in the baseline. As the improvement over leachate extraction is difficult to measure, for conservative	0

			reasons the parameter has been scored nul.	
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: According to Social and environmental impact assessment, no impact of the project over soil conditions is identified. Leachate management from project activity will be managed by landfill operator.	0
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. Noise, emission from flare, emissions from engines and Dangerous wastes are identified under the environmental license of the project owner as pollutant to be monitored at least annually to ensure it remains under the	0

			national environmental limit. Annual report year 2014 is provided demonstrating that low impact is expected from those other pollutants.	
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 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, indicator is scored null.	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	0

			health and safety conditions for the employees[12]. Project developer is implementing national regulation through the implementation of a health and safety program which is annually renewed. It is possible that the project will improve quality of employment Providing sufficient training of concerned employees in the functioning and management of the project activity, is 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	0

[12] *Health and safety certificate of training followed by employees is provides together with management manual where all training and frequency followed by project staff is described . Certificates are reported to the environmental entity as part of the environmental annual report. Please see the Report of 201 as an example.*

			with project activity will have indirect impacts to changing living standards of the local people and number of people living under poverty line. The project does impact local communities by offering quality employments and electricity access thus improving living standards before versus after the project implementation however it is very few compared to country level.	
Access to affordable and clean energy services		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: Change in percentage of Brazilian people energy use (before versus after project implementation) Explanation: The project will generate electricity and supply it to the Brazilian consumers via grid-connection. Since the project utilizes renewable energy resource to provide electricity, and can also improve environmental	0

			quality and reduce greenhouse gas emissions, it provides access to clean energy services to the Brazilian residents. However, the project will have no impact on presence, affordability of services in the local area or households as the electricity is exported to the Brazilian grid. The overall impact can be assessed as neutral.	
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. Explanation: Local employment opportunities created by the project will have an impact of income distribution on different socio-economic groups. Although the project will contribute to income of local people, it is not possible to monitor it, thus a neutral score will be given	0

			according to conservativeness principle.	
Quantitative employment and income generation	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: Number of job created Explanation: The project will create new employments in the project area. Annex III of "Projeto de gas de Aterro Uberlândia I e II under which sustainable development objectives of the project including number of jobs created (direct and indirect) is provided.	+
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 equipment technology imports. Compared with the baseline scenario, there is no significant difference in terms of balance of payments and investment because no foreign currency saving existed due to the project, and the project owner will import	0

			equipment technology for the project only once at the beginning of implementation but no any goods will be continuously imported for marketing.	
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 odour but also can be harmful to human health. Air quality will improve from the baseline because of captured biogas and reduced odour. Odour 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	Main impacts of landfill sites on water quality are the generation of leachate.

quantity	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. In the proposed project, leachate will be collected and treated. Leachate management from project activity will be managed by landfill 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 over water quality and quantity. During operation of project activity only small amount of waste water is discharged in the environment. Wastewater production is due to daily consumption of workers 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[13]. Therefore, in the SDM the effect of the project on the soil condition is scored neutral (0).
Other pollutants	This project has no significant emission of other pollutants that already mentioned. Since this indicator is scored zero and no mitigation measure is required chosen parameter will not be monitored.
Biodiversity	The proposed project does not have any impact on the surrounding biodiversity. Thus, the impact is scored zero and it will not be monitored.
Quality of employment	Project developer will ensure healthy and safe working conditions for the employers with internal procedures and equipment. Trainings will be provided to relevant plant staff before starting their work. Some of the technical personnel will have 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[14]. 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 project's environment. It is possible that the project will improve quality of employment. Yet, since many of the trainings are standard requirement to perform work, the indicator is scored

[13] *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.*
[14] *Energas Geracao de Energia Ltda. 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.*

	neutral (0). Therefore, the chosen parameter does not require monitoring measures.
Livelihood of the poor	With the Project activity, income of local people employed in the plant will increase which will also have impact on overall spending in the region. It is planned that during construction and during operation staff have been 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 thus sold to consumers at the same price therefore not to be monitored a conservative score of zero is applied to this indicator. 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 have an impact on income distribution in the region, this impact will be negligible thus, this parameter is scored (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.
Quantitative employment and income generation	Thanks to 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	Not relevant to the project directly.
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 utilization. Furthermore, it will contribute to management skills and capacity development. Technology transfer is happening due to the following: - 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. As 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		The landfill gas is collected and combusted, avoiding the emission of sulphides (0.5% of landfill gas combusted annually). As a consequence, odor is to be significantly reduced.
Way of monitoring	How	Between 0-1% of volume of the landfill gas is known to contain sulfides. The amount of sulphide will be calculated based on the amount of landfill gas combusted in the engines as followed: $V_{sulphide\ destroyed} = V_{LFG\ destroyed} * 0.005$ Where "V" represents the volume in m^3. A conservative approach of 0.5% is set for the sulphide content.[15] By monitoring quantity of landfill gas produced, it is possible to deduct the 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 Health & Safety Trainings

[15] Cf. http://www.atsdr.cdc.gov/hac/landfill/html/ch2.html#t2_1

Current situation of parameter		None
Estimation of baseline situation of parameter		Not Applicable
Future target for parameter		Whole employee will have at least basic Health & Safety trainings
Way of monitoring	How	Training certificates or records for attendance to the trainings. 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

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 parameter		Not applicable
Future target for parameter		Local recruitments
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	Technology transfer and technological self-reliance
Mitigation measure	No mitigation measures are required.
Chosen parameter	Total number of employee having landfill gas technology and power plant related trainings (onsite and in Europe) and total technology equipment imported
Current situation of parameter	0

Estimation of baseline situation of parameter		Not applicable
Future target for parameter		N/A
Way of monitoring	How	Equipment imported for technology will be monitored annually. Number of training done from technology provider will be monitored (either done by staff from technology provider or by company staff trained by the technology provider).
	When	Continuously
	By who	Human Resources manager

No		5
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 August 08, 2014 and uploaded to the Gold Standard Registry.

ANNEX 2	Live meeting attendance list

ENERGAS

Reunião da Etapa de Retorno das Partes Interessadas
28 de novembro de 2014.

Nome completo	Empresa / Instituição	Contato (e-mail / telefone)	Assinatura
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