

ENVIRONMENTAL AND SOCIAL SAFEGUARDS MONITORING REPORT

**PANGEA GREEN ENERGY PHILIPPINES, INC. –
Landfill Gas Energy Project**

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Project Overview and Purpose of Document

The Quezon City Controlled Disposal Facility is a controlled sanitary landfill, situated on a 22-hectare land located in Barangay Payatas, Quezon City. It started receiving municipal solid waste from Metro Manila, as an open dumpsite from 1973 until 2000 when it was prematurely closed due to a tragic trash slide. The landslide (of trash) tragedy struck the site in 2000, in which 218 people were killed, most of them scavengers in the area. The open-dumpsite mountain, which used to have a steep 70-degree slope, has since been bevelled down into a 40-degree slope. The open dumpsite was converted into a sanitary landfill in 2011. Concession for over-all operation of the Payatas sanitary landfill was granted to the Isabelita P. Mercado (IPM) Environmental Services, Inc.

To mitigate the anticipated impacts from methane production associated with the operation of a controlled sanitary landfill, the Quezon City government undertook a partnership with Pangea Green Energy Philippines, Inc. (PGEP) for the installation and operation of a Biogas Facility at the landfill site. In exchange for PGEP's investment in the project, PGEP was granted the rights to the methane gas generated or extracted from the site, for a minimum of 10 years. The memorandum of agreement was signed on February 14, 2007; on February 01, 2008, the project was registered as a Clean Development Mechanism (CDM) project by the executive board of the United Nations Framework Convention for Climate Change (UNFCCC).

PGEP provides the technical capability and advice for the operation of Biogas Facility installed at the landfill site. The said facility was put up to reduce methane emissions from the Payatas controlled dumpsite, and involves the capture, collection, processing, and flaring of landfill gas (LFG), including the conversion of methane into electricity. LFG is generated from the decomposition of solid waste in the landfill and is approximately 50% methane gas. Methane gas is a greenhouse gas established to have a global warming potential 25 times that of carbon dioxide.

An Environmental Management Plan (EMP) document was prepared for this project (signed accountability statement dated June 05, 2017), as part of the requirements of the Safeguards Framework for CDM projects implemented under the Carbon Finance Support Fund (CFSF) of the Land Bank of the Philippines (LANDBANK), under which this Landfill Gas Energy Project is

being implemented. This Environmental and Social Safeguards Monitoring Report is prepared, completed, and submitted to World Bank as part of LANDBANK's obligation as stated in the EMP for this project.

For a comprehensive description of the features and components of this project, please refer to the corresponding EMP.

Environmental Safeguards Compliance

The Landfill Gas Energy Project complies with relevant national and local environmental laws. As per the Philippine Environmental Impact Statement System (PEISS), the Project--- considered as a renewable energy project with less than 5MW capacity--- does not fall under the category of covered projects, and is therefore not required to secure an Environmental Compliance Certificate (ECC) prior to construction or operation. Also, under the PEISS, it is at the option of the Proponent to secure a Certificate of Non-Coverage, for due diligence or other purposes.

The Proponent has two documents, showing Project's CNC-status with the Department of Environment and Natural Resources – Environmental Management Bureau (DENR-EMB)¹:

- (i) Letter issued by DENR dated 29 September 2005; in response to Proponent's application for CNC for the Landfill Gas Energy Project; affirming that "an Environmental Compliance Certificate (ECC) is not required prior to project implementation"; and
- (ii) CNC document issued by DENR to PGEP, dated July 19, 2011, for Payatas Landfill Gas to Energy Project.

Copies of the aforementioned Letter and CNC documents may be referenced at corresponding EMP for this project.

As part of this environmental safeguards monitoring exercise, a review of relevant environmental documents and permits pertaining to project operations was conducted, through a site visit at PGEP Biogas Facilities offices located at No. 68, Zamboanga Street, Area B, Barangay Payatas, Quezon City, Philippines. Said site visit was conducted as part of the World

¹ National environmental regulatory agency in the Philippines.

Bank Mission activity scheduled with PGEP on that day. Participants of said Mission included: Rizaldo Vargas and Amelito Segarra Jr., of LANDBANK; and Johannes Heister, Katelijn Van Den Berg, Maya Gabriella Villaluz, and Dr. Susanna Chua, of World Bank.

Table 1 lists the various permits and environmental documents furnished by PGEP for the environmental safeguards monitoring exercise performed:

Table 1: Environmental Permits and other related documents presented by PGEP.

Permit	Permit Code / No.	Issuing Agency	Date Issued	Validity	Details
Environmental Clearance	01-2018-01668	Quezon City – Environmental Protection and Waste Management Department	Jan. 19, 2018	Dec. 31, 2018	Renewal
Certificate of Annual Electrical Inspection	17-0592	Quezon City – Office of the Building Official		Sep. 22, 2018	
Certificate of Operation of Existing Machinery	17-0386	Quezon City – Office of the Building Official		Sep. 22, 2018	
Certificate of Operation: Internal Combustion Engine	17-0256	Quezon City – Office of the Building Official		Sep. 22, 2018	For Stanford Ibeco 278 KW engine
Certificate of Operation: Internal Combustion Engine	17-0257	Quezon City – Office of the Building Official		Sep. 22, 2018	For Stanford Ibeco 320 KW engine
Certificate of Operation: Internal Combustion Engine	17-0258	Quezon City – Office of the Building Official		Sep. 22, 2018	For Stanford Ibeco 320 KW engine
Certificate of Operation: Internal Combustion Engine	17-0259	Quezon City – Office of the Building Official		Sep. 22, 2018	For Stanford Ibeco 320 KW engine
Certificate of Operation: Internal Combustion Engine	17-0260	Quezon City – Office of the Building Official		Sep. 22, 2018	For Stanford Ibeco 320 KW engine
Certificate of Accreditation for Pollution Control Officer	2016-NCR-321	DENR-EMB-NCR	Mar. 9, 2016	Mar. 9, 2019	
Summary of Air Monitoring Results	AI-2015-68-17-009	Aeronics Incorporated*			DENR third party accredited tester
Application for Permit to Operate Air Pollution Source Installations			Applied Nov. 27, 2017		For 2 Units – 320 Kw methane gas Electricity Generator and 2 Units – 320 Kw methane gas Electricity Generator
Application for Permit to Operate Air Pollution Source Installations			Applied Jan. 08, 2018		For 1 unit – 1-200 Kw methane gas electricity generator and 1 unit high combustion flare unit.

PGEP has also been diligently submitting to the DENR-EMB Self-Monitoring Reports quarterly, as follows:

- Quarterly Self-Monitoring Report – 4th Quarter (October 01, 2017 to December 31, 2017);
- Quarterly Self-Monitoring Report – 3rd Quarter (July 01, 2017 to September 30, 2017); and
- Quarterly Self-Monitoring Report – 2nd Quarter (April 01, 2017 to June 30, 2017).

As reported in the corresponding EMP for this project, PGEP has previously submitted nine (9) sets of Self-Monitoring Reports in compliance with DENR-EMB environmental regulations, the latest of which was the Quarterly Self-Monitoring Report – 1st Quarter (January 01, 2017 to March 31, 2017).

Copies of the abovementioned permits and environmental compliance documents are included in this report as attachments in the **Appendix Section**.

Social Safeguards Compliance

Background on latest World Bank Mission

On February 12-14, 2018, World Bank conducted an implementation support and handover mission for the Methane Recovery from Waste Management Project. The mission was led by Johannes Heister (Senior Environmental Specialist, and Task Team Leader) and joined by Katelijn van den Berg (Senior Environmental Specialist, and incoming Task Team Leader), Maya Villaluz (Senior Environmental Engineer), and Susana Chua (World Bank consultant), among other World Bank personnel.

As part of this mission, PGEP was one of the landfill project sites visited on February 13, during which the World Bank team met with PGEP President Jenny Fernan Campos along with several other PGEP personnel.

During this site visit, the mission requested information on the (former) presence of waste pickers. The mission observed that the relevant parts of the landfill sites were closed and covered with soil, and that waste pickers were not present on the closed parts. The mission later

learned that waste pickers were present on the Payatas II landfill site before its closure. (**Note:** Payatas II refers to the 3rd CDM Program Activity seeking inclusion under the landfill program.)

The decision to close this site was made by the municipality independently of the carbon finance operation, and the former presence of waste pickers on the landfill site is therefore not a linked safeguards issue. The closure of the landfill is not needed to achieve the objective of extracting landfill gas as landfill gas can be extracted both during active operation of a landfill and after it is closed and therefore the closure is not associated with the carbon finance operation. However, in view of Social Safeguards considerations, the World Bank mission team requested LANDBANK to document the situation, including reasons by the municipality for landfill site closure as well as treatment and livelihoods of waste pickers.

Report on the Payatas II Landfill Site Closure

LANDBANK sought the assistance of the Environmental Protection and Waste Management Department (EPWMD) of the Quezon City Government (QCG) to obtain information on the closure of the Payatas II landfill area and related actions taken concerning the affected waste pickers. On February 28, 2018, LANDBANK met with key officers of the waste pickers organization recognized by the QCG, for an informal interview session. Said session was scheduled with the assistance of Mr. Louie Sabater of the EPWMD.

The Payatas Alliance Recycling Exchange Multipurpose Cooperative (PARE) is an organization of waste pickers at the Payatas sanitary landfill site. The waste pickers reportedly started getting organized in 2002, but it was only in 2010 when the organization was formally registered as a cooperative. Its current roster of officials include: Elmer Ornopia (President); Jennylyn Manadlang (Vice Chairperson); and Lanie Gilongos, Dominador Evangelista, Richard Lopiga, Gaudencio Pardillo, and Raphael Bulan (Board Members). The aforementioned personages were present during the informal interview session along with Mr. Sabater.

According to the officers of PARE, membership is estimated to be between 2,800 to 3,000 pax, with members coming from various barangays of Payatas, Bagong Silangan, Commonwealth, Montalban, and Holy Spirit in Quezon City. Membership in PARE ensures that as an organized and institutionally recognized entity, waste picker members become an integral component of the comprehensive waste management program spearheaded by the QCG, and that members

become assigned into established trading areas, which results in tripling of income and reduced fighting over scraps.

According to Mr. Sabater, as early as 2010 the QCG, through the Payatas Operations Group² (POG), facilitated organizing livelihood and skills workshops or projects for the benefit of waste pickers and other groups, one of which is PARE, dependent on the operation of Payatas as a landfill facility. Members of these groups were given opportunities to attend and participate in learning and skills training activities such as landscaping, construction, small business set-up, multipurpose cooperative organization and management, and microfinance, among others. These activities were conducted in coordination with various groups such as the Solid Waste Association of the Philippines (SWAPP), Payatas Poverty Alleviation Foundation (PPAF), and the Scandinavian Children's Mission.

Mr. Sabater also explained that community members dependent on the Payatas landfill for livelihood are informed and well aware of the limited operational lifespan of the landfill site. However, prior to the Payatas II landfill site's closure, no definite date for closure was given or known, to prepare the dependent communities for this eventuality.

According to Mr. Sabater, on July 2017 EPWMD announced the temporary closure of the Payatas II landfill site for maintenance and rehabilitation actions due to reported hazards associated with trash landslides and the onset of the rainy season. However, on August 02, 2017, the Environmental Management Bureau – National Capital Region (EMB-NCR) of the DENR ordered the closure of the landfill site, reiterating as reasons the site's susceptibility to landslides and in compliance with Section 37 of Republic Act 9003, or the Ecological Solid Waste Management Act of 2000, which mandated closure of open dumpsites by 2004 and of controlled dumpsites by 2006. The closure of the Payatas landfill site is reported to have displaced an estimated 2,000 waste pickers, which were deprived of their source of livelihood.

According to the PARE key officials, there were attempts by them to discuss and negotiate with the existing junkshop/junkyard operators/owners operating around the Payatas landfill area, to take on or absorb as employees the waste pickers under their membership affected by the closure. However, nothing came of these discussions as said junkshop/junkyard operators/owners expressed to having their own way of sourcing employees for their operations.

² The Payatas Operations Group was created by the QCG on November 2000 specifically to perform as the security, operations, and management arm of the Payatas sanitary landfill.

The PARE officials also said they tried to have discussions for having waste picking opportunities at the Rizal Provincial Sanitary Landfill, located in Rodriguez, Rizal. This also proved not feasible, as said landfill facility in Rizal also has an association of waste pickers already in place, which prioritizes its own members.

According to Mr. Sabater, between October-November 2017, EPWMD facilitated a food waste collection system in selected Quezon City areas, to provide an alternative livelihood source for some affected waste pickers who are members of PARE. In this collection system, participating PARE members were given assistance and allowed permission to collect food waste from various food establishments within Quezon City. The collected food waste were to be sold to identified backyard piggery owners who were willing to pay for said food waste for use as animal feeds. However, as explained by Mr. Sabater in this discussion, implementation of this system was not sustained, as usually not enough food waste materials were disposed by the food establishments approached; and participants complained of having to operate at an earning loss, due to low prices piggery owners are willing to pay for the food waste, if at all. The food waste collection system was eventually stopped.

On December 2017, the Quezon City Council approved a resolution urging Mayor Herbert Bautista to extend financial assistance to families affected by the closure of the Payatas sanitary landfill. The council's Resolution No.7268-2017 reflects the council's intention of complying with the QCG policy of providing social protection to vulnerable sectors. As identified by City Ordinance SP-2512-2016, otherwise known as the "Quezon City Informal Economy Ordinance", the vulnerable sector referred here includes those in the informal economy, such as the waste recyclers, segregators and pickers. The QCG reportedly allotted appropriation for grants, aids, and subsidies under the Office of the City Mayor in the 2017 annual budget of Quezon City or from other available sources to help the displaced families. Also, grocery items were to be distributed under the supervision of the Quezon City Environmental Protection and Waste Management Department (EPWMD). As per said council resolution: "In addition to financial assistance, the city should take into consideration the immediate needs of the people affected by the closure. Grocery items should also be distributed to help them acquire the basic necessities for daily survival as they try to rebuild their lives after the closure of Payatas Sanitary Landfill."

According to the EPWMD, the National Anti-Poverty Commission (NAPC) has conducted profiling and job-matching activities of those affected by the landfill site closure. Said profiling is

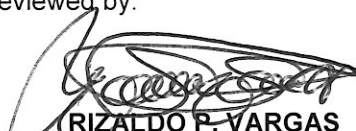
also in aid of the systematic validation and records-keeping of families and individuals, PARE members included, to receive financial assistance.

According to the PARE key officials present, they have yet to receive any of the financial assistance pledged by the QCG at the time of this discussion, pending submission of documents being required by the NAPC.


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