SUMMARY

I. Purpose of this Study

To develop a technology that mitigates landfill gas effect, which is suitable to the Philippines, and is acceptable to relevant parties, by implementing Payatas Landfill Gas to Energy Project (the Project) in a commercially viable way. In this study (the Study), the potentiality of obtaining Certified Emission Reductions (CERs), essential to financing the commercial establishment of such business, will be illustrated as well as the know-how for structuring Project Design Document (PDD).

II. Project Summary

The Project will utilize landfill gas (LFG), recovered from the Payatas dumpsite in Quezon City in the Philippines, for electricity generation. PNOC EC will install a gas extraction and collection system and build a 1 MW power plant in Payatas. The electricity generated by the Project will be sold to the Luzon grid. Excess recovered LFG will be flared.

The dumpsite has an area of 22 hectares and accepts only the municipal solid waste, an average 1,500 tons daily, coming from Quezon City. The methane gas generated from spoiled waste causes odor, spontaneous combustion and fires. Moreover, in the year 2000, 250 scavengers died when the pile of waste crashed upon them.

The Ecological Solid Waste Management Act (RA9003), effective since 2002, prohibits waste incineration and orders existing open dumpsites closed or converted into controlled dumpsites. Due to the Act and the hazardous situation in Payatas dumpsite, Quezon City determined to convert the dumpsite to a controlled dumpsite and commissioned PNOC EC a feasibility study in constructing a power plant to use recovered biogas (methane gas) for electricity generation.

The feasibility study revealed that proposed 1MW power plant to sell electricity to the Luzon grid is not financially viable without CERs. Thus PNOC EC will be the Project implementing entity and build a 1MW power plant that provides electricity to the grid utilizing LFG from 2005 to 2015, during which LFG recovery is expected to be stable.

III. Developing the PDD

A project design document (PDD) of the Project was developed for the CDM Executive Board (EB) approval.

1. Selection of Baseline Methodology

Of all the four baseline methodologies for the utilization of recovered landfill gas, which were approved by EB, the Study applies the methodology number NM0010, which replaces fossil fuel generated grid electricity, to this Project. It also uses NM0010 to prove its additionality indicating the financial barrier that prevents the Project from implementation. While the project developer of NM0010 is a local government, the counterpart of the Project is a private corporation, thus using IRR is appropriate to judge the Project's viability and the selection of investments. In this regard, an approved methodology for landfill gas recovery project, AM0003, which uses IRR to prove its additionality has been chosen for the Project.

2. Baseline Study

LFG at Payatas Dumpsite would continue to be generated into atmosphere if the Project is not implemented. Since no regulations require open dumpsites to control LFG, emitted gas will be neither flared nor utilized for power generation. Therefore, the uncontrolled LFG emission and no replacement of fossil fueled power generation would be the baseline. The Project is to recover and utilize LFG while excess gas would be flared. Therefore, three emission origins exist for the Project baseline: methane gas combusted for power generation, flared excess methane gas, and replaced GHG emissions from the fossil fueled power plants of the Luzon grid.

3. Emissions from the Project

The methane used in this Project is biomass-originated. The biomass (e.g. crops, forests) has absorbed CO2 during its process, so the emissions from this Project will be carbon neutral. Since the Project will directly monitor emission reductions, indirect emission will not affect emission calculation.

4. Monitoring Plan

At the LFG recovery-to-utilization projects, the methane gas that is not emitted into the air will be

directly monitored. The amount of methane recovered and combusted equals such that was not emitted into the atmosphere. Thus, the Project recovered methane gas equals the Project's emission reductions.

5. Projected GHG Reduction Effect

The Project's greenhouse gas (GHG) emission reductions will be equivalent to 427,314 tCO2 during its 10-year crediting period from 2005 to 2014.

6. Comments from Stakeholders

Payatas Operations Group (POG) and PNOC EC gave briefing to scavenger union members and other stakeholders in December 2003 and sincerely answered their questions. Participants were supportive of the Project. There were no negative comments on the Project.

IV. Philippine Government's CDM Project Approval of the Project

After the ratification of Kyoto Protocol in November 2003, Philippine government started structuring an organization for CDM projects. Although the organization is still in its conceptual phase, its outline has been determined. The framework of the organization is similar to the one that Malaysia constructed. IACCC, the cross-sectional organization established in 1991, is expected to have a role of Designated National Authority (DNA), and the Department of Environment and Natural Resources (DENR) would be in charge of the secretariat.

V. Comparison of Philippines Approach to CDM with those of other Southeast Asian Countries

Establishing tax incentives is essential for the private developers to attract investment into their renewable energy projects. Educational training programs for the public as well as for the relevant ministries and fostering CDM specialists are also essential factors to facilitate CDM projects in the Philippines. Like Thailand and Malaysia, the Philippine government acknowledges that waste management and biomass energy as promising fields for CDM projects. However, it is some years behind those two countries in collecting necessary data to develop PDD for CDM project approval. The country needs to immediately list up and start collecting the sufficient information for screening

CDM projects.

VI. Conclusion

It is important to apply promptly for registration to the EB for the CDM approval in response to the enthusiasm of the Philippine government and the Project developers about the Project. The challenge in developing the PDD was finding the way to apply approved methodologies to facilitate the Project.

The PDD demonstrates the additionality of the Project by presenting its economic inviability, which discourages investments from the Project. Informing the host country's project developers of the international CDM support programs, such as the one from Japanese Ministry of Environment as well as introducing prospective Japanese business partners is vital to improve the feasibility of renewable energy project. As the host country learns more about renewable energy and CDM and promotes the infrastructure for such projects and as EB builds up comprehensive baseline methodologies, the CDM projects in the Philippines will be smoothly implemented.