ZEROEMISSIONS

Comments on the draft 'Protocolo de Reporte de Proyectos en Rellenos Sanitarios en Mexico' for the Climate Action Reserve

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We welcome the opportunity to comment on the 'Protocolo de Reporte de Proyectos en Rellenos Sanitarios en Mexico' in order to support the Climate Action Reserve in its missions to ensure integrity, transparency and financial value in voluntary. carbon market both in US and Mexico.

Abengoa is a technology company that applies innovative solutions for sustainable development in the infrastructure, environment and energy sectors; adding long-term value for our stockholders through the encouragement of entrepreneurship, social responsibility, as well as transparency and efficiency in management. Abengoa operates in more than 70 countries with offices and projects in more than 35 of them thanks to its ability to export its products and services. This allows it to meet the challenges of its increasingly consolidated presence in the international and global sustainable development market.

Zeroemissions Technologies, a company integrated into Abeinsa, which is Abengoa's industrial engineering and construction business unit, provides global solutions to climate change by developing emission reduction projects. Abengoa, through its subsidiary Zeroemissions is active in the voluntary carbon market since already has established its own carbon reduction targets. Zeroemissions is then an active project developer aiming to reduce Abengoa´s offsets as part of its carbon management strategy.

The following comments on the "Protocolo de Reporte de Proyectos en Rellenos Sanitarios en México (Recolección y Destrucción del Metano de los Rellenos Sanitarios) Version 1.0", issued on May 2009, are based on the gained experience over the years in the landfill gas industry promoted through the Clean Development Mechanism.

1. Comment on Section 3.3.1. Prueba del Estándar de Desempeño (page 7).

The Performance Standard Test mentions in paragraph 3.c that only the gas from landfill destructed in excess from the maximum capacity of the destruction device installed previous to the project would be considered. We would recommend to consider that the maximum capacity of destruction of methane in installed destruction devices in Mexico vary from the prescribed maximum capacities which can be reached at sea level. This due to the fact that with the high altitude in most of the landfills in Mexico, the oxygen concentration is lower than at sea levels and this implies that the volume of landfill gas needs more volume to completely combust. The greater volume needed reduces the maximum capacity of the destruction device (flare, engine,…) so we recommend to standardise the maximum capacity rated at sea level following manufacturer recommendations on maximum capacity of the installed equipment.

2. Comment on Section 3.3.2.2 Leyes Estatales y Reglamento Municipales (page 10).

The condition to register projects in the Climate Action Reserve highlights the necessity of being in fully compliance with the local legislation in Mexico called NOM083. It is widely known in the Mexican Landfill industry that there is not an external party available in Mexico to validate the compliance with the NOM083 and if this is considered as a condition in registration and verification within the Reserve, this external party should be available in Mexico to substantiate the compliance with the NOM083. Moreover, the NOM083 is conceived as a recommendation based on US standards but the reality is that there are very few landfills in Mexico that would pass the NOM 083.

In addition, it needs to be considered that the functionality in Mexican landfills might be heterogeneous leading to have gaps in responsibilities (closure, restoration, leachate management,…) and the wide and sometimes not practicable application of the NOM083 might increase the risk in developing projects under the Reserve. We would recommend to cap the local legislation requirement of the NOM083 to the part which corresponds with the flaring/utilization activities in order to be consistent with the quantitative estimation of the baseline in equation 5.1.

3. Comment on Section 5.3 Reducciones de Emisiones del Proyecto (page 18).

In equation 5.1, the utilization and application of the Discount Factor (DF) is unclear since the 0 uncertainty can be achieved only when continuous methane monitoring is used and the calibration tests is within 5% error. We would recommend to clearly indicate the minimum frequency of data gathering necessary to achieve a DF=0 for a range of uncertainty levels of equipment.

It needs to be mentioned that an equipment can be calibrated from the manufacturer with a certain % of error and have a higher % of error when installed. We would recommend to clearly state in the DF factor that the equipment would need to be maintained, operated and calibrated as per manufacturer instructions to achieve a DF=0.

4. Comment on Section 5.3 Reducciones de Emisiones del Proyecto (page 21)

The utilization in the equation 2.3 of the fraction of methane that was present in the landfill previous to the project (PP_CH4) will imply to substantiate a value which was not possible to measure ex ante. We propose to use a 0.5 value based on IPCC recommendations.
For the value of LFG_PP1, we would recommend to use the manufacturer's maximum capacity of the previous device.

5. Comment on Section 5.3 Reducciones de Emisiones del Proyecto (page 22)

The interval of time where the measures are consolidated (t) is not very clear. We would recommend to clearly define the consolidation process as required since the simple average of CH4 of each reading will be different depending on the consolidation approach.

6. Comment on Section 6 Monitoreo del Proyecto (page 24)

In the note number 24 (footnote) it states that the methane concentration might be measured in dry or wet basis. Since there is not a clear guidance of what is the threshold of % humidity to ensure the basis of landfill gas and since there is not an analyzer that measures on a wet basis directly (all of them use filters to avoid damaging the equipment), we would recommend to measure the methane concentration in dry basis only. In order to multiply flow and concentration in the same basis, we would also propose to use the Antoine equation to find the partial pressure of the vapour at the known temperature and calculate from this value the % in humidity. More information is available on demand.

7. Comment on Section 6 Monitoreo del Proyecto (page 26)

The protocol allows for the utilization of pilot tube and/or portable gas analyzer as a reliable equipment to measure the landfill gas. Since these measuring devices are designed for punctual readings and their readings can vary depending on the sampling procedure, we would recommend to use them to calculate the Emission Reductions.

8. Comment on Section 6 Monitoreo del Proyecto (page 27)

The frequency of continuous reading every 15 minutes can be increased to 30 minutes based on the fact that the start-up time of a destruction device (flare or engine) to achieve steady state conditions from the shutdown event is normally greater than 30 minutes. Moreover, if accumulated LFG (m3) is considered, the frequency of 15 minutes is not necessarily giving more accuracy but leading to produce more errors and to double data storage capability.

9. Comment on Section 6 Monitoreo del Proyecto (page 29)

The readings PR_CH4, T and P (if necessary), would need to be gathered with the same frequency (15 or 30 minutes) than the LFG in order to ensure that the tCO2 calculated in each interval of time is equal to the sum of all LFG burned multiplied by the average PR_CH4 at the average T and P conditions. The consolidation process would require crosschecking both calculation ways hence a consistent frequency for all parameters is highly recommended.

10. Comment on Section 6 Monitoreo del Proyecto (page 28)

The frequency of continuous reading every 15 minutes can be increased to 30 minutes based on the fact that the start-up time of a destruction device (flare or engine) to achieve steady state conditions from the shutdown event is normally greater than 30 minutes. Moreover, if accumulated LFG (m3) is considered, the frequency of 15 minutes is not necessarily giving more accuracy but leading to produce more errors and to double data storage capability.

We hope the above comments help to improve the quality and applicability of the Draft Landfill Project Protocol. If you have any comments or questions, please do not hesitate to contact me.

Kind regards

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