Argentina Landfill Protocol
Workgroup Meeting #3 Notes and Takeaways

Workgroup Meeting #3 Notes – 3/10/2025 | 11:30am – 1:30pm (ARG time)
Reserve Attendees: Amy Kessler, Rachel Mooney, Alex French, Miguel López Delgado
Link to review recording

Workgroup Members in attendance:

Organization (alphabetically)	Name	Present (P) or Absent (A)
ATOA Carbon	Sami Osman	A
Ecobait360 /Delta Regional National Technological University	Ariel Clebañer	P
EMPAR Environmental Solutions	Brunel Alejandro	A
Environmental Management and Sustainable Development	Fernando Pegoraro	A
HINS	Sofia Neyra	A
Independent Consultant	Ana Marcela Villarroya	A
Independent Consultant	Gisela Daniele	P
Independent Consultant	Jose Davila	P
Independent Consultant	Nicolas Zeballos	P
IRAM - Argentine Institute for Standardization and Accreditation	Jessica Wasilevich	P
LSQA Argentina	Alejandra N. Arribillaga	A
MexiCO2	David Colin	P
Ministry of Environment and Circular Economy Cordoba Province	Germán Juri	A
Ministry of Environment and Circular Economy Cordoba Province	Iriart Marine	A
Secretariat of Climate Change, Ministry of Environment and Circular Economy of the Province of Córdoba	Julia Coito	P
SEGAM CONSULTANT/Secretariat of Energy Transition, Ministry of Infrastructure and Public Services of the Province of Cordoba	Marcos Cena	A

Agenda:

1. Introduction
2. Protocol Considerations
    a. Previous meeting pending questions
    b. Summary of Sections Reviewed in previous meetings
        i. Remaining topics
    c. Sections to review:
        i. Reporting Parameters
        ii. Verification Guidance
        iii. Appendix A
        iv. Appendix B
        v. Appendix C
3. Next steps

Main Points of Discussion and Decisions Made:

1. Previous meeting pending questions

- The Reserve presented the topics that were discussed during the previous Working Group (WG) meeting and the comments that were received via email. The Reserve provided space for anyone that had other comments/documents to share. The following were highlighted:
    - Inventories or databases that allow tracking of the operation of active landfills in the country and data on landfill gas collection and control systems at any scale.
    - Studies and/or data confirming that the installation of landfill gas collection and control systems is not a common practice in Argentina's landfills.
    - Comments, documentation or related studies that can support the fact that the methane fraction does not vary daily, or within a few days, or even weekly.
    - We did receive details of measurement equipment commonly used in the sector in Argentina, such as landfill gas flowmeters, or methane concentration measurement equipment.
    - Finally, more external technical information was requested for field checks for calibration accuracy.
- No comments were received from the WG

2. Summary of sections reviewed in previous meetings

- The Reserve presented the revised Protocol Sections from previous meetings:
    - Project Definition – Eligible landfills
    - Project Ownership
    - Social and Environmental Safeguards
    - Parameters/Default Values
    - Social Safeguards MRV
    - The GHG Assessment Boundary
    - Quantifying GHG Emission Reductions
    - Project Monitoring & Monitoring Requirements
    - QA/QC requirements

- The Reserve highlighted pending issues in the following sections.
    - Section 3.4.2 Limits on Credit Stacking: Protocol credit stacking is defined as receiving both carbon credits and other types of mitigation credits for the same activity on spatially overlapping areas (i.e., in the same landfill). Projects that receive mitigation credits for upgrading landfill gas into high-Btu fuels, or other mitigation credits directly related to the project activity will not be eligible to receive offset credits for the same period of time under this protocol.
        - WG members confirmed that IRECs are functional in Argentina and the IRAM is the entity that verify I-RECs. The following link was provided https://www.iram.org.ar/servicio/irec/

    - Section 5.1 Quantifying Baseline Emissions - The oxidation factor (OX) reflects the amount of methane from landfills that is oxidized in the soil or other material covering the waste. Well-managed landfills may have a higher OX rate than uncontrolled dump sites, where sites with thick, well aerated material differ from those with no cover. The OX shall be determined based on the following scenarios:
        - Equal to 0.0 for landfills that have a geomembrane (synthetic) cover with less than 12 inches of cover soil for the majority of the landfill area.
        - Equal to 0.10 for landfills that don't meet the condition above and the methane flux is unknown or if the landfill does not have a soil cover of at least 24 inches for the majority of the landfill area.
        - Equal to 0.10 for landfills that have a soil cover of at least 24 inches for a majority of the landfill area and the methane flux rate is greater than 70 g/m2/d.
        - Equal to 0.25 for landfills that have a soil cover of at least 24 inches for the majority of the landfill area and the methane flux rate is 10 – 70 g/m2/d.
        - Equal to 0.35 for landfills that have a soil cover of at least 24 inches for a majority of the landfill area and the methane flux rate is less than 10 g/m2/d.
    - The Reserve commented that as per the comments and considerations from the WG in previous sessions, it was considered that methane flux testing is feasible in Argentina.
        - No comment received from the WG
    - The Reserve asked if there is any guidance for determining the OX factor in Argentina.
        - No comment received from the WG
    - WG member asked about the first scenario and if there is a membrane and on top a soil cover.
        - The Reserve clarified that OX factor is equal a 0.0 for landfills with a synthetic geomembrane throughout the entire area of the final cover systems.
        - **Clarification:** After reviewing the OX factor and potential case scenarios provided in the WG Draft Protocol, defined scenarios will not be used as they are based on EPA regulation *Subpart HH-Municipal Solid Waste Landfills* and do not represent the reality of the sector in Argentina. Then

the OX factor will be equal to 0.10 for all landfills except those that incorporate a synthetic liner throughout the entire area of the final cover systems where OX = 0.

- Section 6.1 Monitoring Requirements – The Reserve discussed the requirements for non-continuous measurements (i.e., weekly) and the application of a 10% discount. When the fraction of methane in the landfill gas is not measured continuously and recorded every 15 min and averaged at least daily then a 10% discount is applied in the quantification of the baseline emissions.
  - During the previous workgroup meeting, a comment was received that the 10% discount may be too punitive. The Reserve clarified that this discount is to account for the methane fluctuations based on precipitation, temperature, waste accepted, etc.
  - WG members stated that the fluctuation of methane also depends on how the system is operating and how the gas suction works (sometimes the system could suck air, then, the fraction of methane varies notably). It was stated that a 10% discount may be adequate if there are no continuous measurements.

- Section 6.2 Instrument QA/QC The Reserve presented the concept of a field check as an on-site validation of a meter to determine drift and ensure accuracy.
  - All flow meters and continuous methane analyzers must be field checked for calibration accuracy by a third-party technician with the percent drift documented, using either a portable instrument (such as a pitot tube) or manufacturer specified guidance.
  - All flow meter, continuous methane analyzer, and portable methane analyzer field checks and calibrations must have “as found” and “as left” conditions documented, and percent drift calculated and recorded. The percent drift must be assessed relative to the expected reading rather than the full-scale reading of the device.
  - The Reserve asked for further information about the potential third-party technician for the field check for calibration accuracy. Location of the instrumental labs, ownership (private/public), services and/or expertise, accreditation or approval form the manufacturer, other.
  - WG member commented that these services have a notable cost, and it could be a barrier for PDs to develop a Landfill Project. More information to support this statement will be sent by mail.
  - WG member provided the following links:
    - Accredited laboratories (SAC network) are listed on this link: https://www.inti.gob.ar/areas/metrologia-y-calidad/sac
    - The geographic location can be seen in the following link: https://www.inti.gob.ar/areas/metrologia-y-calidad/servicio-argentino-de-calibracion/servicio-argentino-de-calibracion

3. Sections to Review

- The Reserve presented the Protocol Sections for review
    - Reporting Parameters
    - Verification Guidance
    - Appendix A
    - Appendix B
    - Appendix C

- The Reserve presented Section 7 of the Protocol "Reporting Parameters" that provides guidance on reporting rules and procedures. The priority is to facilitate consistent and transparent information disclosure among project developers.
    - It was confirmed that all project submittal and registration documentation is listed in this section. Record keeping is also covered in this section. In addition, this section also brings clarity on Reporting Periods, Verification Periods and the Verification Site Visit Schedule
    - Project developers must submit verified emission reduction reports to the Reserve annually at a minimum.
    - Project developers must submit verified emission reduction reports to the Reserve annually at a minimum.
    - No comment received from the WG

- The Reserve presented Section 8 of the Protocol "Verification Guidance" provides verification bodies with guidance on verifying GHG emission reductions from landfill gas projects developed to the standards of this protocol.
    - Verification bodies shall confirm that the monitoring plan covers all aspects of monitoring and reporting contained in this protocol and specifies how data for all relevant parameters in Table 6.1 are collected and recorded.
    - No comment received from the WG

- The Reserve presented Table 8.1. Summary of Eligibility Criteria with the eligibility rules, the eligibility criteria and the frequency of rule application
    - No comment received from the WG

- The Reserve presented the Section A1 National Regulation from Appendix A.
  The Ministry of Environment and Sustainable Development (MAyDS) was defined as the government agency responsible for policy definition, technical assistance and co-financing of investments in the waste sector.
    - WG member stated that due to the last change of government the MAyDs no longer exists, and instead the Secretariat of Environment, Tourism and Sports is the appropriate government agency.
    - The main national laws affecting Landfills in Argentina were described:
        - The National Environmental Policy Act No. 25,675, also known as General Environmental Law.
        - Law 25.916 Household Waste Management (August 4, 2004)
        - Article 22 Federal Council of the Environment (COFEMA) in coordination with the Secretariat of Environment.
- The Reserve asked for the public agency, whether national, provincial or municipal, that issues environmental licenses

    - WG member stated that environmental licenses are issued by the provincial designated agencies, generally the Provincial Environmental Secretariats.
- The Reserve asked if there are any other relevant regulations to consider. Or if the National Law 20,284 on Atmospheric Pollution must be considered in relation to the second Environmental Safeguard.
    - WG member stated that said law has no reference to methane. Moreover, the law is quite old, and every Province has its own specific regulation.

- The Reserve presented the Section A2 Provincial Laws and Municipal Regulations from Appendix A, which summarizes the provinces and provincial waste policies and regulations applicable to municipal solid waste disposal systems. Relevant regulations in the appendix include:
    - In the Province of Buenos Aires, Resolution 1143/02 (August 13, 2022),
    - In the Province of Córdoba, under the Ministry of Environment and Circular Economy, Resolution No. 372/01
    - Article 40 of Law 13055 in the Province of Santa Fe
    - Law 7,076 on the Final Disposal Regime of Urban Solid Waste (October 23, 2000)
- The Reserve asked the WG if there are any other relevant provincial and/or municipal law or regulations to consider and add to the Protocol.
    - No comments received from the WG

- The Reserve presented the Appendix B Development of the Performance Standard Threshold and encouraged the WG to review the section in detail and send comments and/or documentation for its finalization. The Section was divided into:
    - Waste management Practices in Argentina
    - Participation in the Carbon Market
    - Recommendation for Performance Standard
- The Reserve requested more information about the landfills functioning in the country and any capture and destruction systems functioning, installed, or in development. Besides, requested confirmation that the capture and destruction of landfill gas is not common practice
    - No comments received from the WG

- The Reserve presented the Appendix C Emissions Factors and commented that after reviewing the 2019 National GHG inventory, it seems that mobile combustion EFs are IPCC values and uses national data from National Energetic Balance (BEN) 2015 study.
    - WG Member provided a link with the 2023 National GHG Inventory for the Reserve to check the EF and net calorific values https://unfccc.int/documents/637427

- The Reserve highlighted the Appendix D Data Substitution Guidelines that provides guidance for calculating emission reductions when data integrity is compromised by missing point data. No substitution of data is permissible for equipment, such as thermocouples that monitor the proper functioning of destruction devices. Therefore, the methodologies presented in this section should be used only for methane concentration and flow measurement parameters.
    - No comments received from the WG

4. **Next steps**

- The Reserve reviewed the next steps. The team will compile notes summary on the third WG Meeting discussion. Then, the recording, notes, and presentation will be posted to the webpage. In addition, the team will work to finalize the Protocol Draft for Public Comment
    - WG should send their comments on the items discussed at the third WG meeting in writing by March 21, 2025.
    - WG should send their comments on the Draft Protocol by March 17, 2025

Pending Questions for the Workgroup:

- Please provide further information on the mitigation credits functioning in the Landfill sector in Argentina (beyond IRECs).
- Please send comments, documentation, or related studies that could support the fact that the methane fraction does not vary daily, or in few days, or even weekly. Please consider the systems performance and the potential suction of other gases.
- Please provide further information about the potential third-party technician for the field check for calibration accuracy. Location of the instrumental labs, ownership (private/public), services and/or expertise, accreditation and/or approval form the manufacturer, other.
- Please send comments, documentation or references to the national or provincial regulations that relevant for a Landfill Project.
- Please provide inventories or databases that track the operation of each landfill and data on landfill gas collection and control systems at any scale.
- Please provide studies and/or data to confirm that the installation of landfill gas collection and control systems not common practice at landfills in Argentina.
- Please provide further information on the passive destruction systems usually installed and the monitoring equipment used, if any.
- Please provide examples of commonly used equipment for:
    - Continuous flow meters
    - Continuous methane concentration analyzers
    - Portable instruments to acquire methane data (i.e., handheld methane analyzer)
    - Portable instruments to conduct field checks for calibration accuracy of monitoring equipment
    - Devices that can automatically self-calibrate
    - Pressure transmitters for alternative flow monitoring
    - Meters installed on the wellhead to improve biogas collection efficiency
    - Thermocouples to confirm operational status of flares
- Please confirm feasibility of the suggested arrangement for the landfill gas flow meters and methane concentration metering equipment in Figure 6.1 from the WG Draft Protocol.