Chile a Landfill Protocol
Workgroup Meeting Notes and Takeaways

Workgroup Meeting #1 Notes – 8/06/2025 | 11:00am – 1:00pm (Santiago time)
Reserve Attendees: Amy Kessler, Claudia Jurado, Celeste Melendez, Miguel López Delgado
Link to review recording

Workgroup Members in attendance:

Organization (alphabetically)	Name	Present (P) or Absent (A)
Energylab	Cristian Mosella	P
ImplementaSur	Gerardo Canales	P
Grupo de Residuos Solidos Pontifica Universidad Católica de Valparaíso Chile	Marcel Szanto Nerea	A
KDM Empresas	José Santiago Zuñiga Irazabal	P
Mexico2	David Colín	P
Núcleo Biotecnología Curauma Pontificia Universidad Católica de Valparaíso	Andres Morales	P
Superintendencia del Medio Ambiente Gobierno de Chile	Karin Salazar	P
Superintendencia del Medio Ambiente Gobierno de Chile	Christian Calderón Duarte	P
Sustentalia Consultores	Javiera Labbé	P
Unicarbon	Nuno Bardosa	P
Veolia	Laura Landeta	P
VOLTA SpA	Pedro Alarcón Retamal	P
Windfall Bio	McKenzie Wilson	A

Agenda:

- Introduction
- Process overview
- Protocol Considerations
    - Project Definition
    - Project Ownership
    - Eligibility Rules
    - Social and Environmental Safeguards
    - Parameters/Default Values
    - Open discussion
- Next steps

Main Points of Discussion and Decisions Made

1. Project Definition

- The Reserve reviewed the Project Definition
- The Reserve reviewed the proposed qualifying destruction devices and requested information from the Workgroup (WG), asking if the presented destruction devices are present in the Chile landfill sector.
    - The WG confirmed that the presented destruction devices appear to be appropriate, including the following: utility flares, enclosed flares, engines, turbines, microturbines, boilers, pipelines, leachate evaporators, furnaces, sludge dryers, burners, kilns or fuel cells.
    - The WG highlighted a specific case where landfill gas is used through private distribution networks, with its end use being destruction for heat or energy generation and asked whether such cases would be eligible.
    - In response, the Reserve explained that, for the purposes of the protocol, the direct use arrangements which entail the piping of landfill gas to be destroyed by an industrial end user at an off-site location are also an eligible approach to destruction of the landfill gas. For instances of direct use, agreements between the project developer and the end user of the landfill gas (i.e., an industrial client purchasing the landfill gas from the project developer), must include a legally binding agreement to ensure that the GHG reductions will not be claimed by more than one party.
    - The Reserve clarified that, for the purposes of this protocol, a GHG reduction project is defined as the capture of methane gas from one or more specified cells in an eligible landfill, and the destruction of said methane gas using one or more eligible destruction devices.

- The Reserve reviewed other requirements for eligible landfills:
    - Not subject to regulations or other legal requirements requiring destruction of methane gas.
    - Is not a bioreactor
    - Does not add any liquid other than leachate to the waste mass in a controlled manner

  - The WG raised questions regarding the treatment of biodigesters under the protocol.
  - The Reserve clarified that the protocol is specifically designed for landfills, defined as sites for the disposal of solid waste (not exclusively organic) with the objective of minimizing environmental impact. In contrast, biodigesters are systems that primarily use organic waste to generate biogas and therefore constitute a different type of project activity. Biodigesters may also fall under the Reserve's Livestock Protocol, which aims to reduce emissions from livestock waste using biodigesters.
  - The WG also inquired about how to address landfill regulations and how such regulations affect project eligibility.
  - The Reserve clarified that the definition of a project under the protocol refers to situations where regulations require a landfill to collect, control, and destroy all methane gas generated at the site.
  - Additionally, the WG asked whether the protocol includes any differentiation by project scale, as was the case under the Clean Development Mechanism (CDM), to facilitate implementation. This was based on the observation that, in Chile, many large-scale landfills already have carbon offset projects, while small-scale landfills often do not capture or destroy landfill gas, primarily due to economic feasibility constraints.
  - The Reserve confirmed that the protocol does not differentiate by project scale. However, it was noted that aggregate projects may be developed under the Reserve's Program, which can help reduce project development and verification costs associated with landfill gas offset projects.
  - The WG requested clarification on the definition of passive flares or burners.
  - The Reserve team explained that a passive flare, as defined under the protocol, is one that does not include a blower or vacuum system to actively draw or push landfill gas toward the flare. Instead, gas is conveyed naturally, without mechanical assistance. This contrasts with active destruction systems, which employ equipment such as blowers or fans to promote gas flow.
  - The WG also raised questions regarding anthropogenic emissions resulting from project activity.
  - The Reserve confirmed that the installation and operation of a landfill gas collection and destruction system may result in anthropogenic carbon dioxide and methane emissions associated with the consumption of electricity and fossil fuels. These emissions must be quantified, and depending on the specific circumstances of the project, they may increase or decrease the project's net GHG operational emissions. The Reserve will review in further detail the quantification portions of the protocol in a forthcoming WG meeting; see Section 5.2 of the base protocol for quantifying project emissions.
- The Reserve requested information on the required operating permits and the applicable rules/regulations at the national level and by province.

        - The WG noted that in Chile, administrative divisions include Regions and Provinces and emphasized that all landfills must possess an approved RCA (Environmental Qualification Resolution) as a condition for legal operation. This RCA functions as an auditable environmental permit, issued under national environmental legislation, and outlines the specific environmental obligations and mitigation measures the landfill must comply with. The WG highlighted the importance of considering the existence and scope of the RCA when assessing a landfill's regulatory status and eligibility under the protocol.
        - The WG referred to sanitary authorizations, including both the project authorization and the operating permit. Additionally, it was noted that it is important for the methodology to clearly define its scope, particularly in cases where there may be other activities not covered by the project that could involve non-compliance or regulatory violations.
- The Reserve reviewed other eligibility considerations
    - Captured landfill gas may be destroyed on-site, transported for off-site use (e.g., through transmission or distribution pipelines), or used as an energy source for vehicles.
    - Regardless of the project developers' use of the captured landfill gas, for the project to be eligible to register GHG reductions under this protocol, the final destination of the methane must be its destruction.
    - Passive flares do not qualify as destruction devices for this protocol.
    - In addition to reducing methane, the installation and operation of a landfill gas collection and destruction system can affect anthropogenic CO2 and methane emissions associated with the consumption of electricity and fossil fuels.
    - Landfill gas collection and destruction systems are generally comprised of extraction wells, collection pipes, vacuum pumps, and other technologies that enable and/or enhance the collection of landfill gas and convey it to destruction technology. In some landfills, the gas is destroyed only by means of a burner.
- The Reserve asked the WG to confirm if landfill gas collection and destruction systems in Chile meet the conditions outlined above.

2. Project Ownership

- The Reserve reviewed the ownership requirements as the following.
    - The project developer is an entity with an active account in the Reserve and is responsible for all monitoring and verification of the project.
    - Ownership of GHG reductions must be clear, through explicit title. The account holder must be able to sign the Attestation of Title.
    - If the owner of the landfill is not the project developer and/or account holder, then contracts must exist between the facility owner, the project developer, and other entities that may have ownership rights to the GHG emission reductions.
        - The WG expressed that there may be contracts between the facility owner, the project developer, and the financiers, given that the ownership and operational structure of landfills can vary significantly.
        - The Reserve requested more information on the special ownership conditions of landfills in Chile and on the documents that verifiers should review to confirm ownership.

- Several comments were received from the WG highlighting different ownership structures among the actors typically involved (landfill owner, landfill operator, waste provider, landfill gas collection and control system operator, etc.). The specific case of concessions was emphasized, which in most cases already include specific clauses regarding carbon credits. Additionally, it was noted that concessions are generally designed for the operation of landfills, not their closure. However, no special ownership conditions were identified as needing consideration.
- The Reserve clarified that in cases where multiple actors are involved, it will be necessary to establish contracts between the parties to clearly and verifiably define ownership rights over the emission reductions. It also reminded the group of the importance of complying with social safeguards, ensuring that all relevant stakeholders are informed and agree with the project implementation.
- Finally, the Reserve team invite the WG to review Section 3.5 “Regulatory Compliance” of the Protocol and to submit any comments or suggestions regarding this section.

3. Eligibility Rules

- The Reserve reviewed the main eligibility rules
  - Location – Chile
  - Project start date (please review section 3.2 for more details):
    - To be defined by the Project Developer but must be no more than 90 days after landfill gas is first destroyed in a project destruction device, regardless of whether sufficient monitoring data is available for reporting emissions reductions.
    - The start date is defined in relation to methane destruction, not by other activities that may be associated with project initiation or development. Projects are required to be submitted for announcement within 12 months of operation. Note that for new protocols (up to 12 months after the publication of the protocol), projects may list with a start date of up to 24 months prior to the date of the protocol publication.
  - Project crediting period
    - For the crediting period, it is defined as 10 years after the start date.
    - The project is eligible until a landfill gas control and destruction system is legally required.
    - Renewal of the crediting period may be requested within 6 months of the end of the last reporting period. The project must meet the requirements of the most current version of the protocol, including the legal requirements test.
      - The Reserve clarified that the request must be made within 6 months after the end of the final reporting period.
  - The Reserve asked whether it should include 2 or 3 10-year crediting periods, for a total of 20-30 years.
    - The WG asked about the review of the proposed common practice to extend the crediting period.
    - The Reserve clarified that this refers to a reassessment of the project’s additionality and an update of the baseline at the time the

project seeks to extend its crediting period. The purpose is to confirm that the project remains eligible under the most recent version of the protocol for an additional crediting period.

- The Reserve defined additionality, and the two additionality tests: the Performance Standard Test and Legal Requirements Test.
  - Performance Standard Test: For this protocol, the Reserve uses a practice change threshold that establishes an industry-wide baseline scenario and the changes implemented in the project scenario.
  - Legal Requirements Test: A project activity may not be required by any law, regulation, or legally binding mandate.
- The Reserve requested the following information:
  - Definitions of the different types of solid waste disposal methods in Chile.
  - If possible, inventories related to the operation of each landfill, including specific data on the current status of their existing venting systems (cells or pits) and/or passive or spontaneous burning systems.
  - Information/data about the Impact of the CDM and other international standards on common practices.
  - Confirmation that the installation of landfill gas capture and destruction systems is not common practice in Chile landfills.
- The Reserve reviewed the four scenarios that meet the Performance Standard Test and examples were requested to contrast the scenarios presented.
    - The WG asked about the possibility of having multiple projects within the same landfill.
    - The Reserve clarified that the installation of a new gas collection system in a physically distinct cell (or cells) is eligible, provided that the new collection system has its own meter that complies with the requirements of the Protocol. It was also confirmed that more than one project can exist within the same landfill.
    - The WG noted that it is important, particularly in the case of Chile, to consider CDM projects that were discontinued due to the decline of the mechanism and the loss of carbon market incentives, which led to the cessation of gas destruction. It also mentioned other projects that completed their 21-year crediting period (three 7-year periods under the CDM).
    - The Reserve clarified that the protocol accounts for such cases, and those projects may be eligible on a case-by-case assessment, provided they meet the protocol's requirements.
- Reserve reviewed the Regulatory or Regulatory Compliance:
  - Must attest that the project is in compliance with all laws applicable to the project activity.
  - Must disclose any and all instances of legal violations (material or otherwise) caused by the project or project activities.
- The Reserve requested information on specific laws/regulations applicable to landfills in Chile and what regulatory bodies/agencies oversee landfills.
    - The WG had no comments regarding laws or regulations beyond those presented by the Reserve team.
    - The WG confirmed that the agencies responsible for the oversight of landfills in Chile are the Superintendence of the Environment

(SMA) and the Regional Ministerial Secretariats (SEREMI) of Health, as applicable.

- The WG confirmed the completion of the public consultation process for Supreme Decree No. 189, which involved a modification of the relevant article. The WG suggested that the Reserve should follow up on this process and noted that the decree refers to the flaring of landfill gas for safety reasons, though it does not specify the percentage of gas that must be destroyed.
- The Reserve indicated that, in the context of Large Landfills, compliance with Article 16 of Supreme Decree No. 189 relates to the minimum flaring of methane required to ensure occupational safety. Based on prior research, a reference value of 5% of the gas has been proposed as a representative estimate of this requirement. This proposal was presented to the WG, and no comments were received. Therefore, the Reserve proposes to apply a discount of this percentage to the project's baseline, to ensure that the volume of gas flared to comply with legal safety requirements is not credited as an emission reduction. The WG is invited to submit any feedback or suggestions regarding this proposed percentage.
- The WG suggested reviewing the terminology used for "State rules and municipal regulations" to better align with the Chilean context. Additionally, it was noted that regional waste management plans are generally non-binding (rather advisory) and therefore may not need to be considered in this section.

4. Social and Environmental Safeguards

The issue of social and environmental safeguards will be reviewed at the next meeting

Next steps

- The Reserve reviewed the next steps
  - WG should send their comments on the items discussed at the first meeting in writing by August 15, 2025.
  - The next WG meeting is planned for August 27, 2025, at 11:00-13:00 Chile time. Or as second option September 3 11:00-13:00 Chile time, Please provide your comments if you need to change the date

Pending Questions for the Workgroup:

- Please provide examples of active Landfill Gas Collection and Control Systems and applicable destruction devices in use in the jurisdiction and confirm whether landfill gas collection and destruction systems in Chile comply with the conditions set out.

- Please provide further information on the national, regional, and/or provincial environmental permits and documents required to operate a landfill in accordance with current national and/or regional and/or provincial regulations.
- Please confirm whether there are any special ownership conditions for landfills in Chile that should be considered under this Protocol and what documents verifiers should review to confirm ownership of landfill facilities in Chile.
- Please review Section 3.2 “Project Start Date” and submit comments or suggestions.
- Please review Section 3.5 “Regulatory Compliance” of the Protocol and submit comments or suggestions.
- Please provide detail on the different types of solid waste disposal methods in Chile.
- Please confirm whether there are inventories related to the operation of each landfill that include specific data on landfill gas collection and destruction systems and, if so, please provide link to the documents.
- Please provide additional information on the impact of CDM or other international standards on common practice in the industry.
- Please provide examples of CDM projects that are eligible for transition to the Reserve Protocol.
- Please provide studies and/or data confirming that the installation of landfill gas capture and destruction systems is not common practice in Chilean landfills. Please specify the landfill gas destruction systems currently in use in Chile.
- Please provide more information on the specific laws/regulations applicable to landfills in Chile and details on which regulatory bodies oversee them.
- Regarding Supreme Decree No. 189/2005 (Regulation on Basic Health and Safety Conditions in Landfills), please propose/justify the deduction percentage to ensure that the volume of gas burned to comply with safety regulations is not credited as an emission reduction. Currently, 5% is proposed.