

The Landfill Methane Framework was presented, and these answers provided, as at [21 November 2025](#). The answers do not necessarily reflect the current positions taken by the Landfill Methane Framework, which may have been updated following further internal review. Please reach out to your usual Sylvera contact, or to frameworks@sylvera.io, if you would like to discuss further.

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Framework Review Committee: Landfill Methane Consultation

Registered Attendees: Cool Effect, Shell, Climate Impact Partners, Freepoint Commodities, Anew Climate, Respira, Natwest Markets.

Carbon

1. Why does Sylvera use its own recreated equations instead of relying solely on project-reported calculations?

- Projects often use default or ex-ante values (e.g., OX, DOCf, MCF, EF, destruction efficiency), which may not reflect actual, site-specific conditions. Our recreated equations establish an independent benchmark using peer-reviewed, region-appropriate data, where available. By comparing project claims against this benchmark, we assess whether the project's GHG quantification approach and its calculations are accurate and conservative. This prevents systematic overissuance and aligns all projects to a consistent standard.

2. How do you ensure fairness when projects use very different methodological approaches, technologies, or monitoring set-ups?

- Our framework is methodology-agnostic, so we don't privilege a specific technology or registry approach. Instead, we normalize all projects to the same independent benchmark. We use the project's own measured values where available, but substitute parameters such as electricity emission factors with peer-reviewed regional references. This means that a project



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using a sophisticated monitoring setup and one relying on simpler reporting can both be assessed on an equal footing. The outcome is a consistent, comparable Carbon Score that reflects reporting transparency, the accuracy of the GHG calculation approach and conservativeness of the claim, not the specific technology or methodology chosen.

3. How are you thinking about the oxidation factor with the new guidance from the supervisory body and Article 6.4?

- We're aligned with the latest Article 6.4 Supervisory Body guidance, which emphasizes the use of site-specific oxidation factors instead of default IPCC values whenever credible data exist. In our LFM framework, projects using generic or non-representative OX values face a higher risk of over-crediting, while those providing evidence of soil and landfill conditions are rewarded accordingly. The goal is to ensure OX reflects real landfill conditions, improving accuracy and consistency across all projects.

4. Will the framework apply to all LFM technologies, such as Advanced Collection Systems, or just LFGtE and Flaring techs?

- The LFM Ratings Framework is designed to be technology-agnostic across landfill methane projects. It covers flaring-only systems, landfill-gas-to-energy (power or heat), and more advanced collection and utilization setups, as long as the core function is the capture, destruction, or use of landfill methane. Technology-specific elements (e.g. flare efficiency checks, electricity emission factors) are applied where relevant, while other components (e.g. over-crediting risk, common practice, financial additionality, safeguarding) are applied consistently across all LFM configurations.

5. IPCC has a scientific consensus on oxidation factor that many methodologies use. How are you reconciling this literature with other scientific literature that has different values?

- While the IPCC does have a scientific consensus on the oxidation factor, it also notes that these values carry high uncertainties due to challenges in accurate measurement. Oxidation rates vary considerably depending on factors such as the thickness and type of cover material, climate conditions, and methane

flux. In addition, these studies that determine oxidation factors are conducted on uniform, homogenous soil layers, which don't reflect real soil/landfill conditions, and can introduce high uncertainties that may lead to over- or under-estimation of oxidation in landfills. The IPCC further advises that the oxidation factor should be included in the uncertainty analysis to account for the high variability of soil and cover conditions ([2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 3: Solid Waste Disposal](#)).

- Furthermore, according to this combined study ([Chanton et al., 2009](#)), other scientific research papers suggest high variability in the oxidation factor values depending on different soil types, as well as the average oxidation rate that should be slightly higher than the IPCC default value, further indicating the increased risk potential of over-crediting when relying on the IPCC value.

6. In the Over-crediting risk, how are the different criteria under Model Sources Representativeness, Model Choices, and Monitoring Approaches weighed? If a project uses is overly conservative in using a default factor for one criterion that would result in under-crediting, but then another factor is found to be potentially over-crediting, how would they net out? Say the first factor is under-crediting by 10% and the second potentially over-crediting by 8%, would the overall score be 2% conservative?

- Over-crediting risk in the LFM Ratings Framework is not a simple arithmetic netting of percentage over- and under-crediting across parameters. Instead, we use scenario-based scoring to assess whether the overall system is biased towards over- or under-crediting. Conservative assumptions can mitigate overall risk, but they do not fully “cancel out” aggressive ones: parameters with clear over-crediting potential cap the achievable score, while strong conservative choices can lift it within those caps. So rather than concluding “2% conservative” in your example, we would map the pattern of assumptions into a 1–10 risk band that reflects the dominant direction and magnitude of bias.



Additionality

7. How do you assess financial additionality for projects that also generate revenue from electricity sales?

- Revenue generation doesn't automatically undermine additionality. We evaluate financial viability using the Internal Rate of Return (IRR) with and without considering carbon revenues. If the project still falls below its hurdle rate without credits, or if secondary revenue streams are insufficient to justify the investment, then carbon finance may remain essential. What matters is whether carbon revenues materially impact the investment or operational decision, not whether the project earns income.

8. When assessing common practice. How are you calculating this market penetration rate? For example, do you include all landfills in the area, including ones that have passed a compliance threshold of emissions and therefore require a gas system, or are you just assessing landfills that are not required to have a system in place?

- Common practice assessment is built in two layers: (i) *Project Activities Common Practice*, which uses market, regulatory, and adoption data to assess how widely similar gas collection and destruction systems are deployed among eligible landfills; and (ii) *Proponent Common Practice*, which looks at the developer's own track record. For the penetration rate, we focus on landfills that are technically and legally able, but not already required, to implement active gas systems, so that we are measuring genuinely voluntary uptake rather than compliance-driven installations. Facilities above regulatory thresholds or subject to mandatory control requirements are accounted for separately through the Policy & Regulatory and baseline assessment, rather than being counted as "voluntary" adopters in the common practice denominator.

9. On slide 17, the definition of financial additionality does not define a timeframe for review. Is financial additionality assessed using financial documentation or information provided by the developer prior to project implementation? If assessed on an ongoing basis through a project's crediting period, how is Sylvera accounting for factors that the developer does not control and can materially impact weighting of

carbon revenue against NPV/IRR calculations? These uncontrollable factors include market price and gas volume yield from the landfill's waste mass.

- Financial additionality assessment is anchored in the investment decision: we test whether the project was likely to clear its hurdle rate without carbon revenues at the time the decision was made. Where contemporaneous proformas or board-level analyses exist, we use those; otherwise, we reconstruct reasonable ex-ante cases (using historic price signals, cost data, project configuration, etc.) and run IRR with- and without-credits. We do not continually re-rate additionality based purely on realised outcomes such as ex-post gas yields or spot carbon prices; instead, we use sensitivities to check whether plausible ex-ante uncertainties could reasonably have been resolved in favour of the project without credits.

10. In the United States, many LFM projects were developed in the mid-to-late 2000s and early 2010s with the impetus of a national cap-and-trade program (Waxman and Markey Bill). From 2005-2012, market prices for these credits were predicted to be more than 10 times higher than the actual market yield as this market never came to pass. Gas volume yields can be highly unpredictable prior to installation of a well field. These factors could have significantly impacted NPV/IRR. Where NPV and IRR are insufficient, this should not take away from the risk that developers took based on forecasted carbon revenue which was a material factor to implement their projects.

- The LFM Ratings Framework explicitly recognises that many early LFM projects were executed under significant policy and market uncertainty, including expectations of a forthcoming federal cap-and-trade system and much higher carbon prices than ultimately materialised. When assessing such projects, we look for evidence that these expectations were genuinely built into the investment case (e.g., contemporaneous price forecasts, early market participation, board or lender documentation referencing carbon revenue). Where the evidence shows that carbon revenue was a material driver of the decision, the framework can still assign a strong financial additionality score, even if realised prices or gas yields later fell short. However, we do not automatically infer high additionality simply because ex-post conditions



turned out less favourable; the score still hinges on whether the ex-ante case without credits would likely have met the project's hurdle rate.

- To ensure this assessment reflects reality rather than assumptions, Sylvera proactively engages with each project developer to understand the exact historical context, investment rationale, and market expectations at the time of the decision. This developer-level engagement helps validate (or challenge) what the evidence suggests and ensures that our additionality assessment is grounded in the specific circumstances of each project.

11. Additionally, as there is no differentiation in scenarios for analysis for Financial Additionality, can Sylvera clarify how they will conduct this analysis if a project no longer has their original proforma calculations or other Houston Salt Lake City San Francisco Calgary Budapest Madrid Munich evidence that shows carbon as a material revenue source? Many projects were not required to submit an NPV/IRR analysis to the registry as that registry implemented a performance standard that already accounted for financial additionality at that point in time. These projects could attest they absolutely implemented a project with carbon revenue as an impact on their decision but perhaps did not keep these records dating back over a decade. Has Sylvera considered alternative paths on demonstrating financial additionality like market pricing signaling during project implementation?

- When full historical financial models are missing, the LFM Ratings Framework relies on a combination of reconstructed cash flows and proxy evidence. We use available project data (CAPEX/OPEX, commissioning date, output, subsidy regimes) to rebuild an approximate IRR with and without carbon revenues.
- We complement this with contemporaneous market signals such as observed carbon prices, forward curves, published policy expectations, or any documentation indicating that carbon revenue was part of the investment rationale.
- We take qualitative input from developers into account, and we look for supporting documentation to confirm a project's eligibility for the highest additionality rating.



- Strong proxy evidence can still support a high financial additionality score, but in the absence of reliable documentation, we cap the maximum achievable score to reflect greater uncertainty.

12. In the assessment of common practice penetration rates, will Sylvera be removing landfills that are required to install an active gas system by law/regulation and only calculating penetration rates that are below a regulatory threshold (e.g. 34 MG/yr in the United States) in the same country/region? Calculating common practice rates from landfills that are not required to implement a gas collection system, as well as reviewing those that are generating carbon credits versus those that are not, will yield more representative common practice rates as the data set will be more indicative of “voluntary” landfills.

- The intent of the LFM Ratings Framework is to distinguish between compliance-driven and voluntary adoption. For the main common practice penetration metric used in Additionality, we focus on landfills that are not already legally required to install active gas systems and that are technically capable of doing so; mandatory systems are treated as part of the regulatory baseline rather than evidence of voluntary common practice. We may still analyse overall penetration (including mandated sites) for context, but only the voluntary segment feeds into the Project Activities Common Practice score and, via the capping logic, into the final Additionality score. This ensures that high uptake driven by regulation does not mechanically lower additionality for projects operating below those regulatory thresholds.

Safeguarding & Co-Benefits

13. LFM projects are industrial facilities. How can they realistically deliver community co-benefits?



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- Even if projects are not community-driven by design, they often produce tangible benefits: improved local air quality, reduction of odors, and safer waste-management conditions. We also evaluate whether they engage communities, share benefits, or create local employment. Lower scores do not always indicate harm, they can simply reflect limited community engagement. High-scoring projects demonstrate clear monitoring, SDG alignment, or benefit-sharing mechanisms.

