



California Climate Action Registry

Updates to the Landfill Project Protocols

The Landfill Project Reporting and Verification Protocols, adopted by the California Registry Board in November 2007, provide accurate, conservative, and consistent eligibility requirements, monitoring and reporting guidelines, and emissions reduction calculations for landfill gas destruction projects. When the Board adopted the protocol one year ago, it directed staff to continue to work with stakeholders to further evaluate technical issues and requested that such refinements and revisions be brought to the Board for further consideration.

As the protocols have begun to be put to use in real world landfill projects, the California Registry has received an abundance of constructive feedback regarding the usability, readability, and consistency of the methodologies. Additionally, the California Registry hired expert technical consultants to perform an auditability assessment to ensure that the projects could be properly verified against the protocol by accredited verifiers. And, as directed by the Board, we have continued to gain important insights into the protocol through our ongoing interactions with workgroup members and other stakeholders.

As a result of these inputs, the California Registry has drafted updated versions of the *Landfill Project Reporting Protocol* and the *Landfill Project Verification Protocol* to achieve the following goals:

- 1) Improve accuracy and conservativeness in the emissions reduction calculations;
- 2) Better distinguish between new projects, project expansions, and project upgrades;
- 3) Provide better guidance for project monitoring, reporting, and record keeping;
- 4) Address, where appropriate, the results of the auditability assessment carried out by our expert technical consultant, Future Perfect;
- 5) Increase consistency with the California Registry Livestock Project Protocols;
- 6) Correct minor inconsistencies in the calculation methodologies; and
- 7) Increase the overall readability and usability of the protocols.

The substantive changes we are recommending are summarized below.

Recommended Changes to the Reporting Protocol:

- **Tightening restrictions on start date eligibility through use of a rolling start date.** The updated version of the protocol uses a rolling start date beginning twelve months from protocol adoption. This will permit all historic projects dating back to 2001 to list until November, 2009. Following that date, projects must list within six months of becoming operational. This change will heighten standards and minimize the potential for non-additional projects.
- **Requiring the execution of an Attestation of Regulatory Compliance.** This change was made in response to the auditability assessment, which revealed that Project Verifiers were unclear about the scope of their responsibilities in verifying regulatory compliance. A new attestation form will require Project Developers to publicly attest to the regulatory additionality of their projects.

- **Allowing landfills with pre-existing, non-qualifying destruction devices to become eligible by installing a new, qualifying destruction device.** It was brought to our attention that many landfills have rudimentary flares on passive ventilation systems which have extremely poor collection and combustion efficiencies. These non-qualifying technologies would not meet the standards of this protocol and therefore are ineligible to register GHG reductions. The eligibility rules have been refined to allow the additional methane destroyed through the installation of a qualifying collection and destruction system to register under this protocol.
- **Tightening restrictions on landfills with qualifying pre-project destruction devices.** This change allows the protocol to better distinguish between expansions, upgrades, and truly new projects. Where a new destruction device is added to a site with a qualifying pre-project destruction device (e.g., flare, generator), only that methane destroyed beyond the rated capacity of the pre-project destruction device is considered additional.
- **Allowing the use of open flares as a qualifying destruction device.** Open flares will be permitted with a conservative destruction efficiency of 96%. Open flares have a lower cost than closed flares; the default destruction efficiency will yield a conservative estimate of emission reductions.
- **Clarifying the rules surrounding bioreactors and bioreactor technology.** The solid waste industry was concerned that the protocol did not permit projects at landfills that utilize technologies associated with bioreactor landfills. We have provided clarifying language that distinguishes between the use of certain technologies (e.g., leachate re-circulation) and those facilities which meet the EPA definition of a 'bioreactor'. Only those facilities which meet the EPA definition of a bioreactor landfill will be deemed ineligible.
- **Refining the non-methane organic carbon (NMOC) threshold for projects required to treat, but not necessarily combust, NMOC due to local regulation.** Due to industry concern over the original NMOC threshold of 600 pounds per month, we conducted a comprehensive analysis of flaring and carbon adsorption systems used in the treatment of NMOC. Through consultation with workgroup members, independent vendors and contractors, we were able to identify all relevant costs and refine our methodology significantly. Our final analysis revealed that the appropriate threshold is 620 pounds NMOC per month. Industry groups pushed for a much higher threshold of 3,000 pounds NMOC per month, but their analysis lacked the data necessary to substantiate that value.
- **Requiring a monitoring plan to be in place prior to reporting emission reductions.** This requirement will help project developers establish good monitoring practices and ensure that all necessary data are available, reliable, and verifiable when reporting commences.
- **Modifying the methane destruction equations.** The equations used to calculate the amount of methane destroyed have been modified to more accurately incorporate temporal variations in flow, methane concentration, temperature, and pressure. These changes will increase the accuracy of the calculations.
- **Modifying and re-naming the effective radius of influence (EROI) calculation.** In order to incorporate projects with pre-existing, non-qualifying destruction devices, the EROI calculation was slightly modified and re-named the Pre-Project Adjustment.

Recommended Changes to the Verification Protocol:

- **Adding guidance for site visits.** This change was made in response to the auditability assessment.
- **Adding guidance for determining materiality.** This change was made in response to the auditability assessment.
- **Adding guidance on determining regulatory additionality.** This change was made in response to repeated verifier concern and confusion about what is expected in a regulatory review. This change will clarify the verifier role and provide greater consistency between project verifications.

All of the proposed changes in the draft protocol have been reviewed by members of the original landfill working group, and have gone through a month-long public comment period. Public comments have been incorporated into the updated Landfill Project Reporting and Verification Protocols where appropriate. A summary of the comments received and their incorporation into the final protocol is included in this Board package.