

Application of the Oeko-Institut/WWF-US/ EDF methodology for assessing the quality of carbon credits

This document presents results from the application of version 3.0 of a methodology, developed by Oeko-Institut, World Wildlife Fund (WWF-US) and Environmental Defense Fund (EDF), for assessing the quality of carbon credits. The methodology is applied by Oeko-Institut with support by Carbon Limits, Greenhouse Gas Management Institute (GHGMI), INFRAS, Stockholm Environment Institute, and individual carbon market experts. This document evaluates one specific criterion or sub-criterion with respect to a specific carbon crediting program, project type, quantification methodology and/or host country, as specified in the below table. Please note that the CCQI website [Site terms and Privacy Policy](#) apply with respect to any use of the information provided in this document. Further information on the project and the methodology can be found here: www.carboncreditquality.org

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|---------------------------|---|
| Criterion: | 3.1 Significance of non-permanence risks |
| Project type | Landfill gas utilization |
| Date of final assessment: | 31 January 2023 |
| Score: | This project type does not involve a material non-permanence risk |

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Assessment

Criterion 3.1

Relevant scoring methodology provisions

The methodology evaluates the non-permanence risk of the project type. If the project type is deemed not to have a material non-permanence risk, then quality objective 3 is assigned a score of 5. If there is a material risk of non-permanence, the assessment depends on the outcome of criterion 3.2. The following table provides an overview for which types of mitigation activities non-permanence risks are considered material and for which not:

| Mitigation activity | Non-permanence risk | Example activities |
|--|---|---|
| Destruction of non-CO ₂ gases | No risk: No reservoir involved. The destruction cannot be physically reversed. | HFC-23 destruction from HCFC-22 production |
| Avoidance of formation of non-CO ₂ gases, without effecting the amount of carbon stored in reservoirs | No risk: No reservoir involved. The process cannot be physically reversed. | Reducing CH ₄ emissions from rice cultivation, ruminant livestock or organic waste diversion |
| Reducing demand for fossil fuels | No material risk within time horizon relevant for avoiding dangerous climate change (except for possible lock-in effects in the case of activities that lead to a long-term increase in energy or feedstock demand). ¹ | Adoption of renewable energy; energy efficiency measures |
| Reducing demand for non-renewable biomass (thereby reducing forest degradation) | Material risks: natural disturbance risks and anthropogenic factors. | Efficient cook stove projects |
| Enhancing, preserving, or slowing depletion of terrestrial carbon reservoirs | Material risks: The size of the risk depends on spatial scale, how underlying drivers are addressed, and stability of the reservoir(s) affected by the mitigation activity. | Afforestation/reforestation; improved forest management; avoided deforestation/conversion; soil carbon enhancements; peatland preservation or "rewetting"; etc. |
| Storing carbon in geologic reservoirs | Material risks: The size of the risks mainly depends on reservoir stability. | Carbon capture and storage (CCS BECCS, DACCS, or other) |
| Preventing or extinguishing accidental uncontrolled burning of fossil fuels | Material risks: The size of the risks mainly depends on reservoir stability. | Extinguishing or preventing ignition of fires at waste coal piles |

¹ An example of such a lock-in effect is a project that installs new natural gas infrastructure, with a technical lifetime of 30 years, to replace an existing oil-based heating system. In the absence of the project, the existing oil-based system would be replaced after 10 years by a new heating system that comes to the market and that operates on 100% renewable energy. In this case, the emission reductions that the natural gas system achieves in the first 10 years of its operation would be reversed in the subsequent 20 years if not replaced by less GHG intensive technology. The project is thus locking in a fossil fuel based solution for the 30 years while renewable energy solution become available.

| | | |
|--|---|--|
| Preventing or slowing exploitation of fossil fuel reserves | Material risks: If the protection measure is discontinued, the reservoir may be depleted. | Protecting an oil field from being extracted |
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Information sources considered

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Assessment outcome

The project type is considered not to involve a material non-permanence risk.

Justification of assessment

This assessment refers to the following project type:

“Capture and utilization of gas from an existing and closed solid waste disposal site. The collected gas is mainly used for energy purposes, such as for electricity and/or heat generation. A smaller fraction of the gas may be flared (e.g., during maintenance of an on-site electricity generation plant). The project type reduces emissions by destroying methane and displacing more greenhouse gas intensive energy generation.”

The avoidance of methane emissions from solid waste disposal sites is not associated with the preservation or enhancement of carbon reservoirs. In this case, there is no physical process by which the avoided formation of these emissions can be undone. Therefore, these emission reductions are permanent.

The displacement of fossil fuels under this project type is not considered to involve a material non-permanence risk within the time horizon relevant for avoiding dangerous climate change. The project type does not involve any lock-in effects which could lead to non-permanence risks as referred to in footnote 1 above.

Annex: Summary of changes from previous assessment sheet versions

The following table describes the main substantive changes implemented in comparison to the assessment from 31 May 2022.

| Topic | Rationale |
|---------------|--|
| Justification | The justification was updated to include a description of the project type. The rationale was also refined and amended to cover emission reductions from the displacement of fossil fuels under this project type. |