

## 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](http://www.carboncreditquality.org)

Criterion:	<a href="#">1.2 Vulnerability</a>
Project type:	<a href="#">Solar photovoltaic power</a>
Date of final assessment:	<a href="#">31 January 2023</a>
Score:	1

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## Assessment

### Relevant scoring methodology provisions

In market situations where the supply of carbon credits from already registered and implemented projects considerably exceeds the current and expected future demand for carbon credits, the purchase of carbon credits does not necessarily trigger further emission reductions. The methodology therefore evaluates for carbon credits in collapsed markets whether the projects would continue to reduce GHG emissions even without carbon credit revenues, or whether they are at risk of discontinuing GHG abatement without these revenues. In the latter case, they are classified as vulnerable projects. The methodology employs a stepwise approach for assessing the vulnerability of the respective project type or individual project:

- Step 1: Evaluate whether the relevant market of the carbon credit can be characterized as collapsed (see methodology for further details). Note that currently, this situation only applies to the CDM.
- Step 2: Identify potential continuation and discontinuation scenarios. If applied on the project type level a representative sample of projects can be assessed.
- Step 3: Evaluate how applicable legal requirements affect the feasibility of the scenarios identified in step 2. Apply this step to both continuation and discontinuation scenarios. Remove scenarios that could not be pursued due to applicable laws and regulations. This step may be applied at project or project type level in the context of a specific host country or at the level of the carbon crediting program (see methodology for further details).
- Step 4: Assess financial benefits and costs and rank the remaining scenarios in order of their financial attractiveness by performing a cost-benefit analysis of each scenario. The financial attractiveness of a project depends on whether its income exceeds the operational expenditure in the absence of carbon credits. Only OPEX and benefits are therefore considered in the analysis. Exclude costs and benefits that occur under all scenarios in a uniform manner.
- Step 5: Assess whether any of the scenarios faces non-financial barriers that exclude it from being the course of action. For conducting the barrier assessment, the same approach described in section 1.1.4 is applied using an expert judgement. Remove all scenarios that face non-financial barriers and are scored at 5 or 4 from further consideration.
- Step 6: Determine the most likely project scenario. The highest ranked remaining scenario is the likely course of action. If this is a continuation scenario, the project is deemed to have a low vulnerability to discontinue GHG abatement (score of 1). If the scenario is a discontinuation scenario, and it is either the only remaining scenario or any other scenarios are financially significantly less attractive, then the vulnerability is deemed to be high (score of 5). In other instances, e.g. where a continuation and discontinuation scenario may be equally plausible, no clear conclusion can be drawn on vulnerability (score of 3).

Degree of Vulnerability	Score
High Vulnerability	5
Vulnerability not conclusive	3
Low Vulnerability	1

### Information sources considered

- 1 CDM Database for PAs and PoAs, Data accessed on 15 December 2022. Downloadable as excel spreadsheet under <https://cdm.unfccc.int/Projects/projsearch.html>
- 2 Warnecke, C., Day, T., Klein, N. (2015): *Analyzing the status quo of CDM projects. Status and Prospects.*  
[https://newclimate.org/sites/default/files/2015/05/cdm\\_evaluation\\_mainreport\\_2015.pdf](https://newclimate.org/sites/default/files/2015/05/cdm_evaluation_mainreport_2015.pdf)
- 3 Warnecke, C.; Day, T.; Schneider, L.; Cames, M.; Healy, S.; Harthan, R.; Tewari, R.; Höhne, N. (2017): Vulnerability of CDM projects for Discontinuation of Mitigation Activities: Assessment of Project Vulnerability and Options to Support Continued Mitigation. NewClimate Institute; Oeko-Institut. DEHSt (ed.). Berlin, 2017. Online available at [https://www.dehst.de/SharedDocs/downloads/EN/project-mechanisms/vulnerability-of-CDM.pdf?\\_\\_blob=publicationFile&v=3](https://www.dehst.de/SharedDocs/downloads/EN/project-mechanisms/vulnerability-of-CDM.pdf?__blob=publicationFile&v=3), last accessed on 15 December 2022.
- 4 Schneider, L. / Cames, M.: Options for continuing GHG abatement from CDM and JI industrial gas projects. Öko-Institut, Berlin, May 2014. <http://www.oeko.de/oekodoc/2030/2014-614-en.pdf>

### Assessment outcome

The project type is assigned a score of 1.

### Justification of assessment

*Step 1:* Per the guidance in the scoring methodology, the CDM market is deemed to be collapsed. There are currently more than 600 registered solar photovoltaic projects under the CDM. All other markets relevant for this assessment (GS and VCS) are considered functioning.

*Step 2:* The following continuation or discontinuation scenarios have been identified:

- Scenario 1: The mitigation activity continues as originally designed and implemented, and at the same scale.
- Scenario 2: The mitigation activity discontinues, i.e. the project owners will dismantle the equipment necessary for the activity.

*Step 3:* Many countries are encouraging the scaling up of solar photovoltaic power capacity as part of the decarbonization of the energy sector. However, the operation of solar photovoltaic power plants, and in particular the continued operation of existing plants, is not commonly required by any laws or regulations.

*Step 4:* The assessment is conducted on a project type level. For solar photovoltaic plants, the OPEX is commonly significantly lower than the revenues from feeding electricity into the grid - at least for

the duration for which projects receive feed-in tariffs. This is confirmed through a cursory review of data from CDM projects.

This is also confirmed by relevant information from the literature. A study by NewClimate Institute and Ecofys (Source 2) assesses the status of individual CDM projects, as well as the barriers and means for supporting the continuation of these projects for a sample of 1.310 CDM projects, accounting for 22 host countries and 14 major project types. The study indicates high rates of continued operating status for renewable electricity generation projects like wind, hydro and solar. These project types are deemed likely to receive support from alternative sources, often in the form of national-level feed-in tariffs or favourable power purchase agreements. Non-CER contributions from further revenues or cost savings usually exceed operating expenditures, resulting in high incentives for projects to continue operation even with modest CER price levels or outside of the CDM without alternative support. 80% of the CDM wind power projects were in regular operation, despite very low CER prices. For solar photovoltaic projects, only 3% of the projects named sufficient CER revenues as a reason for continuing the operation.

Another study by NewClimate Institute and Oeko-Institute (Source 3) and an earlier study by Oeko-Institute (Source 4) also both concluded that the vulnerability of solar photovoltaic power projects is typically low.

*Step 5:* No significant non-financial barriers could be identified that would prevent any of the considered scenarios.

*Step 6:* The most likely scenario for the project type is a continuation scenario, as for most of the assessed projects the revenues from power generation exceed operational expenditures. Therefore, the project type is assigned a score of 3 under the CDM.