



**CDM: Form for submission of queries from DOEs to the
Methodologies Panel regarding the application of approved
methodologies (version 01)**

*(To be used by DOEs for presenting questions / proposals / amendments
related to the applicability of approved methodology)*

Name of the entity (DOE) submitting this form	TÜV NORD Cert GmbH
Reference number and title of the approved methodologies	ACM0002: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" – version 11
Title/Subject (give a short title or specify the subject of your submission, maximum 200 characters):	Applicability of ACM0002 to hydropower plants increasing power output through control and removal of the sedimentation accumulating in existing reservoirs
Attach CDM-PDD example of project activity where applicability raises problem:	<input type="checkbox"/> Yes, is attached.
Date and signature for the DOE	2010-05-06 <i>Saaltmann</i> (SAALTANN)

Submitted queries

Please use the space below to substantiate the queries relating to the application of approved methodologies. If the questions are related to a project activity under development or implementation, please describe the context in which they arose. If you are proposing amendments to existing methodologies, please specify the text you want to change or introduce. If necessary, attach files or refer to sources of relevant information.

If you have a question relating to the application of an approved methodology, please specify and provide reference to the exact project activity to which it applies.

Background on the intended project activity

The volume of sediment in any specific reservoir depends on the geology, slope, local climate, run off/water shed area, and patterns of human disturbance. No single parameter or simple combination of parameters explains the wide variation in global differences. Over two decades, the volume of the sedimentation in the reservoirs in Indonesia has increased substantially mainly due to the increased settlement at river banks including deforestation and agriculture; furthermore embankments increased the amount of sediments entering the storages. Lack of waste management in the upstream area has contributed to sedimentation in terms of water pollution by waste.

Control and removal of sedimentation in the reservoirs should be done on a regular basis. However in some cases, particularly in Indonesia, this activity has not been undertaken since the date of commissioning of the hydro power plant which could be in excess of 20 years.

The sediment transportation and deposition phenomenon will reduce the reservoirs useful life significantly and could reach a critical condition where the volume of the reservoir is reduced to a level very close to the dead storage capacity; and will reduce the amount of water discharge if sediments block the intake structures. This in turn will significantly reduce the power output of the generating plant. Besides, less retention volume due to sedimentation will increase the risk exposure through flooding. Further, due to their composition, sediments can cause serious damage to the mechanical equipment which leads to decreased efficiency and shortened lifetime of the turbines.

Sedimentation is usually removed by regular flushing or dredging. Although for long term solutions, the reservoir sedimentation management scheme should comprise the three sequences:

- a) Minimizing sediment entering the reservoir.
- b) Minimizing sediment deposited in the reservoir.
- c) Evacuating sediment from reservoir.

The type of solutions for removing sediment is dependent on the specific condition at each reservoir. The de-sedimentation measures such as flushing and dredging can be considered as a non maintenance activity when they are treated like a combined single CAPEX project due to substantial efforts required in terms of time and equipment to remove major sediments consisting of not only seasoned sands but also of domestic waste.

Main components of dredging works will be engineering, site access and installation, dredging measures, evacuation and storage of dredging material, safety measures during de-sedimentation works and contingency for unforeseen events (such as environmentally harmful domestic waste occurrence for instance). In case of a flushing solution, model scale testing for evaluating the effectiveness of the method might to be considered upfront.

Queries

One of the applicability conditions provided in the methodology is as follows (ACM0002 ver 11 Page 3 para 1):

The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;

Clarification 1. The definition of retrofit is as follows (ACM0002 Page 2 para 5):

Retrofit (or Rehabilitation or Refurbishment). A retrofit is an investment to repair or modify an existing power plant/unit, with the purpose to increase the efficiency, performance or power generation capacity of the plant, without adding new power plants or units, or to resume the operation of closed (mothballed) power plants. A retrofit restores the installed power generation capacity to or above its original level. Retrofits shall only include measures that involve capital investments and not regular maintenance or housekeeping measures.

Hence following clarification of applicability of ACM0002, ver 11 is kindly requested:

- 1) Are measures to control and removal of the sedimentation in existing hydro reservoirs (as per condition above) considered as refurbishment?
- 2) In such a case, is ACM0002 applicable for de-sedimentation projects?
- 3) If not, is a request for deviation from ACM0002, ver 11 required?
- 4) If not, is a request for revision of ACM0002 required?

Clarification 2. Identification of baseline scenario (ACM0002 Page 3 para 2) : *In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 10 to calculate the parameter EGPJ,y): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity;*

In the case of a de-sedimentation project is considered as refurbishment (as per clarification 1 above), kindly confirm that the calculation of the baseline scenario, as per ACM0002, for the existing plant, is applicable providing no de-sedimentation work has been undertaken between the start of the minimum historical reference period and the implementation of the newly proposed project activity.

Clarification 3. Calculation of $EG_{PJ,y}$ for retrofit or replacement of an existing renewable energy power plant (ACM0002 Page 8 para 4): If the project activity is the retrofit or replacement of an existing grid-connected renewable power plant, the baseline scenario is the continuation of the operation of the existing plant. The methodology uses historical electricity generation data to determine the electricity generation by the existing plant in the baseline scenario, assuming that the historical situation observed prior to the implementation of the project activity would continue.

In the case of a de-sedimentation project is considered as refurbishment (as per clarification 1 above), kindly confirm that the calculation of $EG_{PJ,y}$ (quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)) as per equation 8 ACM0002 Page 9 is applicable for de-sedimentation project.

If you propose an amendment to an approved methodology, please provide reasons.

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In case you propose the amendment to the approved methodologies, please provide your draft below, if not included in an annex:

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Date of submission of contribution:

Information to be completed by the secretariat

Date when the form was received at UNFCCC secretariat

Date of transmission to the Meth Panel and Executive Board