CDM: Recommendation Form for Small Scale Methodologies (version 01)

(To be used for presenting questions/proposals/amendments to the simplified methodologies for small-scale CDM project activity categories)

Date of SSC WG meeting:	11–14 January 2011, SSC WG 29
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Clarification regarding applicability of AMS-III.B to fuel switching at isolated grid connected electricity generation facilities
Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.	AMS-III.B "Switching fossil fuels"
Name of the authors of the query:	Johan Havinga Institution: SenterNovem (today NL Agency) Andrew.jakubowski@camcoglobal.com, Rachel.child@camcoglobal.com, johan.havinga@agentschapnl.nl

Summary of the query:

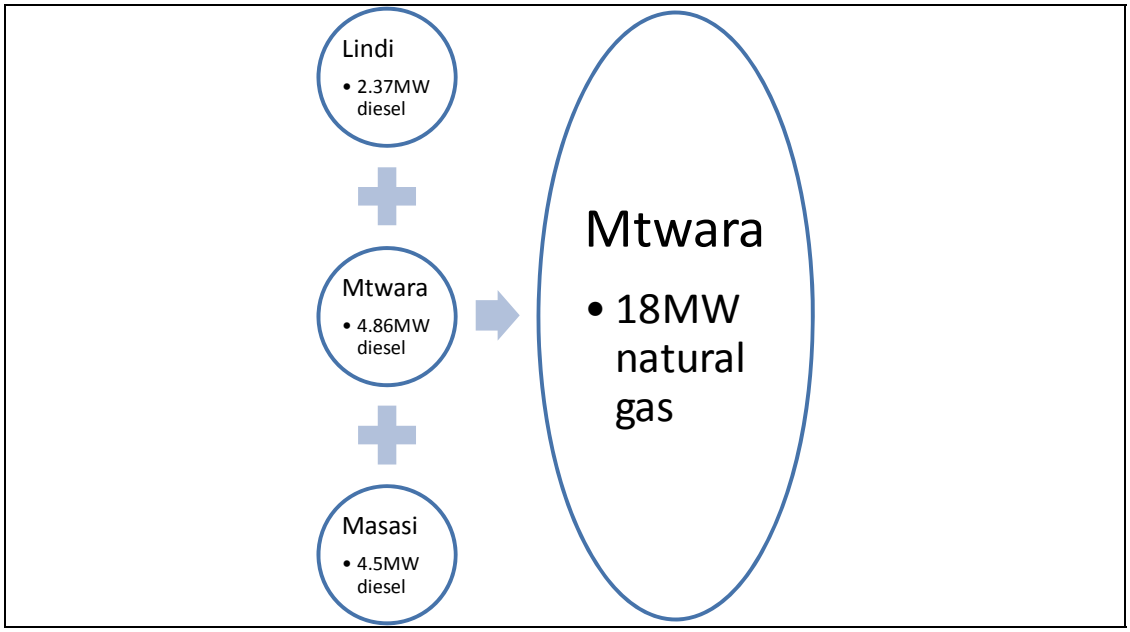
Please use the space below to summarize the query related to SSC methodologies/categories SSC Modalities and Procedures provide recommendation/analysis of the SSC WG.

Original text from PP:

This query relates to the application of AMSIIIB (version 14) to a fossil fuel switching project in Tanzania, a Least Developed Country which, to date, has only one registered CDM project located in the country. The project involves the replacement of diesel generators in three adjacent regions of Tanzania (Mtwara, Lindi and Masasi) with nine new natural gas gensets located centrally in Mtwara. Further details are given below:

Scenario existing prior to the implementation of the proposed CDM project: 11.73MW of diesel gen sets installed at 3 locations within one region: 4.86MW at Mtwara, 2.37MW at Lindi and 4.50MW at Masasi. Each power plant supplied power to an individual isolated grid in this remote area of south-eastern Tanzania.

Project activity scenario: replacement of the diesel gen sets and capacity increase through the installation of 9 x 2MW Caterpillar natural gas fired gen sets at one central location (Mtwara) and interconnection of the three previously isolated grids into one larger isolated grid.



This clarification is simply to ascertain whether the approved small scale methodology AMSIIIB v.14 is applicable to the project described above. Although the methodology does not state that it is not applicable to projects supplying electricity to a grid, we notice that there are no registered projects using AMSIIIB v.14 that involve similar types of project.

Version 13 of AMSIIIB was used for the GSP version of the PDD for this proposed project and the DOE validating the project was satisfied that the applicability criteria for this methodology were met by the proposed project. However, once version 13 of the methodology expired and version 14 had to be used, the applicability of the methodology for the proposed project was queried by the DOE. However, we note that the original intention of the SSWG in revising the methodology from v.13 to v.14 was to "broaden the applicability" of the methodology (see SSWG meeting report 20, para 6 and EB47 meeting report, para 62(c)). We infer from this that it was not the intention of the SSWG, by introducing version 14, to restrict the use of this methodology for projects that have previously met the applicability criteria of version 13.

Questions/ comments on specific parts of the methodology AMSIIIB are outlined below:

Para.	Text from methodology	Clarification requested/ project situation
4	Fuel switching may also result in energy efficiency improvements. If the project activity primarily aims at reducing emissions through fuel switching, it falls into this methodology. If fuel switching is part of a project activity focussed primarily on energy efficiency, the project activity falls under a Type II methodology.	The project will involve efficiency improvements as the new gas gen sets installed are more efficient than the existing diesel gen sets. However, no emission reductions are claimed for this element of the project.
7	The facility may involve grid connected elemental processes however this methodology does not cover emission reductions on account of shift from use of grid electricity.	The facility involves grid connected electricity generation. There is no shift from use of grid electricity
8	This category is applicable to project activities where it is possible to directly measure and record the energy use/output (e.g., heat and electricity) and consumption (e.g., fossil fuel) within the project boundary.	In the case of the proposed project it is possible to directly measure the energy output (i.e. power exported to the grid) and consumption (i.e. natural gas)
9	Heat or electricity produced under the project activity shall be for on-site captive	Electricity produced under the project activity shall be for export to the grid. A contract

		use and/or export to other facilities included in the project boundary. In case energy produced by the project activity is delivered to another facility, or facilities, within the project boundary, a contract between the supplier and consumer(s) of the energy will have to be entered into specifying that only the facility generating the energy can claim emission reductions from the energy displacement.	(PPA) between the project owner (the supplier) and the grid company operator (in this case TANESCO) will be entered into. This will include the requirement that only the facility generating the energy can claim emission reductions from the energy displacement. TANESCO will supply and sell the power to end consumers of the electricity.
	13	The project boundary is the physical, geographical site where the switching of energy source takes place. It includes all installations, processes or equipment affected by the switching. The boundary also extends to the industrial, commercial or residential facilities consuming energy generated by the system.	Note that in version 13 of the methodology, "the project boundary is the physical, geographical site where the fossil fuel switching takes place, and all installations affected by the switching". The project boundary for the proposed project is the physical, geographical site where the switching of energy source takes place. The project boundary for the proposed project would include all installations and equipment and affected by the switching. It would also include the connection to the commercial facility that will purchase all the power generated (in this case, the commercial entity is TANESCO, the grid electricity supply company). The boundary does not therefore include the industrial, residential and additional commercial facilities which are supplied with electricity by TANESCO.
	14	In case of existing facilities historical information (detailed records) on the use of fossil fuels and the plant output (e.g., heat or electricity) in the baseline captive energy generation plant from at least 3 years prior to project implementation shall be used in the baseline calculations, e.g., information on coal use and heat output by a district heating plant, liquid fuel oil use and electricity generated by a generating unit (records of fuel used and output can be used in lieu of actual collecting baseline validation data). For facilities that are less than 3 years old, all historical data shall be available (a minimum of one year data would be required).	Historical information on the use of fossil fuels (i.e. diesel) and the plant output (i.e. electricity) in the baseline plant from at least 3 years prior to project implementation will be used in the baseline calculations. The baseline plant is connected to an isolated local-grid.
	22	Monitoring shall include: (a) Monitoring of the fossil fuel use (FC_y) and output of element process i after the project activity has been implemented ($Q_{PJ,y}$) - e.g., gas use and heat output by a district heating plant, gas use and electricity generated by a generating unit; (b) For electricity/thermal energy exported to other facilities, monitoring of the use of electricity and thermal energy	In the case of the proposed project, it is suggested that monitoring shall include: (a) Monitoring of natural gas consumption and power generated by the power plant by the project owner; (b) Monitoring of electricity energy exported and purchased by the single commercial facility (in the case of the proposed project, this will be TANESCO as the grid electricity distribution company) and

	shall be undertaken in the recipient end.	not at each individual residential, commercial and industrial facility connected to the grid.

Additional questions sent to PPs:

With a view of obtaining a better understanding of your project activity and in order to facilitate the consideration of your submission you are requested to provide information on how it would be determined/demonstrated that the baseline for the incremental capacity is the operation of DG sets and not the mix of energy sources (e.g. FO/HSD/NG/DG plants) connected to the isolated grid.

Response obtained from PPs:

As stated in the original submission, the scenario existing prior to the implementation of the proposed CDM project is 11.73MW of diesel gensets installed at three locations within one region: 4.86MW at Mtwara, 2.37MW at Lindi and 4.50MW at Masasi. Each of the three power plants supplied electricity to three individual mini isolated grid in this remote area of South-eastern Tanzania.

The project activity scenario is the replacement of the diesel gensets with a capacity increase through the installation of 9 x 2MW Caterpillar natural gas-fired gensets at one central location (Mtwara) and interconnection of the three previously mini isolated grids into one small isolated grid.

According to AMS-III.B (version 14), "project activities involving capacity additions compared to the baseline scenario are only eligible if they comply with the related and relevant requirements in the General Guidance for SSC methodologies".

The General Guidelines to SSC CDM methodologies (version 15), states that Type II and III project activities involving capacity increase "may use a Type II and Type III SSC methodology provided that they can demonstrate that the most plausible baseline scenario for the additional (incremental) capacity is the baseline provided in the respective Type II and III small-scale methodology. The demonstration should include the assessment of the alternatives of the project activity using the steps described in paragraph 19 above."

The determination of the baseline scenario for the proposed project consists therefore of two parts:

(i) The fuel switch activity for the original 11.73MW of diesel gensets

(ii) The fuel switch activity for the incremental increase in capacity of 6.27MW (i.e. 18MW minus 11.73MW)

For (i), the baseline is the original 11.73MW of diesel gensets installed, as confirmed by paragraph 14 of AMS-III.B (version 14): "historical information (detailed records) on the use of fossil fuels and the plant output (e.g. heat or electricity) in the baseline captive energy generation plant from at least 3 years prior to project implementation shall be used in the baseline calculations".

For (ii), according to paragraph 19 of the General Guidelines to SSC CDM methodologies (version 15), the most plausible baseline for the capacity increase shall be determined using four step assessment of alternatives. It is beyond the scope of this response to the clarification to give a full baseline scenario determination analysis, but a full in depth analysis is provided in the PDD for the proposed project and will be fully validated by the DOE according to the requirements of the UNFCCC, their internal procedures and the latest version of the Validation and Verification Manual (VVM).

However, an initial outline of the form of the baseline determination analysis that will be developed for the proposed project is given below, according to the steps outlined in paragraph 19 of the General Guidance to SSC CDM methodologies (version 15):

"Step 1: Identify the various alternatives available to the project proponent that deliver comparable level of service including the proposed project activity undertaken without being registered as a CDM project activity."

This could include, for example,

i) Installation of 6.27MW of natural gas-fired gensets (this is the project activity not implemented as a CDM project)

ii) Installation of 6.27MW of natural gas-fired power generation equipment using a different technology to that being used in the proposed project (e.g. open cycle or closed cycle gas-fired power generation)

iii) Installation of 6.27MW of power generation equipment using a different fuel from that used in the proposed project including, for example, diesel/fuel oil-fired generation

iv) Installation of 6.27MW of renewable power generation, for example wind, hydro or biomass.

v) Interconnection of the isolated grids with the main Tanzania power grid and import of the equivalent amount of electricity.

"Step 2: List the alternatives identified per Step 1 in compliance with the local regulations (if any of the identified baseline is not in compliance with the local regulations, then exclude the same from further consideration)."

Any potential alternatives to be listed in the PDD under Step 1 that are not in compliance with local or national regulations shall be eliminated.

"Step 3: Eliminate and rank the alternatives identified in Step 2 taking into account barrier tests specified in attachment A to Appendix B of the simplified modalities and procedures of SSC CDM."

Attachment A to Appendix B lists the following barriers:

- Investment barrier
- Technological barrier
- Barrier due to prevailing practice
- Other barriers

A barrier analysis shall be performed on all the baseline alternatives remaining after Step 2.

Potential barriers that could be applicable to the baseline alternatives include:

- Investment barriers: lack of accessing to financing capital
- Technological barriers: the remoteness of the proposed project location and lack of access to alternative fuels
- Barriers due to prevailing practice: lack of experience in the implementation, operation and maintenance of alternative technologies and other fuel types than diesel in the host country
- Other barriers: high cost of main grid interconnection due to remoteness of proposed project site

It is only one alternative that will likely remain at the end of this step which is continuation of diesel generation.

"Step 4: If only one alternative remains that is:

- Not the proposed project activity undertaken without being registered as a CDM project activity; and
- It corresponds to one of the baseline scenarios provided in the methodology; then the project activity is eligible under the methodology.

If more than one alternatives remain that correspond to the baseline scenarios provided in the methodology, choose the alternative with the least emissions as the baseline."

According to paragraph 16 of AMS-III.B, "The net energy output in the project activity (QPJ,y) is limited to the installed capacity in the baseline situation, unless it has been demonstrated in accordance with paragraph 4 that the new installation (Greenfield project) or the added capacity has the same baseline scenario".

equipment" is the only alternative remaining, which is the case in this project activity, then this will become the baseline scenario for the capacity increase.

If by chance once validation by the DOE is completed and this baseline alternative is not identified as the baseline scenario then the capacity increase will not be considered in the emission reduction calculations for the project, meaning the net energy output in the project activity (QPJ,y) will be limited to the installed capacity in the baseline situation (i.e. 11.73MW).

In summary, the determination of the baseline scenario for the proposed project will be carried out in two parts (the fuel switch activity for the original 11.73MW of diesel gensets and the fuel switch activity for the incremental increase in capacity of 6.27MW).

For the capacity increase element, the baseline scenario will be identified according to the requirements of the methodology AMS-III.B (version 14) and the latest version of the General Guidelines to SSC CDM methodologies. This analysis will be fully validated by the DOE according to the requirements of the latest version of the VVM.

From current work and both project design and evaluation the baseline scenario identified for the capacity increase will be the installation of 6.27MW diesel-fired power generation equipment (i.e. the capacity increase will have the same baseline scenario as the 11.73MW existing installed capacity).

However, as the validation of the project has not been completed, in the event that a different alternative is identified as the baseline scenario, then in accordance with paragraph 16 of AMS-III.B (version 14) in the calculation emission reductions "the net energy output in the project activity (QPJ,y) is limited to the installed capacity in the baseline situation" which will be 11.73MW without the incremental capacity.

Recommendation by the SSC WG:

Please use the space below to provide amendments/change (in your expert view, if necessary).

Please refer to paragraph 35 of the meeting report of the SSC WG 28 <http://cdm.unfccc.int/Panels/ssc_wg>.

Answer to authors of query by the SSC WG:

Please use the space below to provide answer to the authors of the above query.

The small-scale working group of the CDM Executive Board would like to thank the author for the submission.

The SSC WG, agreed to clarify that AMS-III.B is applicable to the underlying project activity. The group agreed to propose a revision of AMS-III.B, as contained in annex 9 of the SSC WG 29 report, to further clarify issues related to the installation of new energy generating facility (low carbon intensive) to displace an existing energy generating facility (carbon intensive) connected to an isolated grid (s) system.

Signed by the Chair, Mr. Peer Stiansen
Date: 14/01/2011

Signed by the Vice-Chair, Mr. Hugh Sealy
Date: 14/01/2011

Information to be completed by the secretariat	
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