CDM: Recommendation form for Small Scale Methodologies (Version 01.1)

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

Date of SSC WG meeting:	20−23 August 2012, SSC WG 38
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Clarification on applicability, project boundary, baseline calculation for project involving complex industrial process under AMS-II.D
Indicative methodology to which your submission relates *(refer the items of Appendix B of the Simplified Modalities and Procedures)*, **if applicable:**	AMS-II.D "Energy efficiency and fuel switching measures for industrial facilities"
Name of the authors of the query:	Kyle Martin Institution: SGS United Kingdom Limited Kyle.Martin@sgs.com

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 DOE: This is regarding to the project activity described below seeking a clarification regarding historic, baseline and project scenario. The PDD submitted with the request for registration is attached as Annex 1.

Background:

Essar Steel Limited (ESL) is a fully integrated flat carbon steel manufacturer from iron ore to ready-to-market products. ESL has the iron ore beneficiation plant at Bailadilla, Chattisgarh, India. This plant mixes the beneficiated iron ore with water to make slurry (water + iron ore) which is pumped through a 267 km pipeline to the pellet plant at Vizag, India.

At Vizag, the iron ore slurry is received in a common storage facility. The iron ore is separated from the water in 07 nos. of vacuum disc filter units (VDF) and the moist iron ore cake generated therein is conveyed by belt conveyer for further pelletisation process. This plant having capacity of 500TPH has supply of power from the grid.

ESL planned the expansion of the plant to setup another line of production of same capacity of 500TPH and a captive power plant of 25MW capacity to cater for the power demand of the plant partially.

Baseline Scenario:

During expansion plan of ESL, a separate new line of 500TPH was planned in parallel to existing line with the same VDF Filtration Technology along with the captive power plant of 25MW capacity.

Project Activity:

During expansion plan and putting a new line, ESL had put up a new technology i.e. Ceramic filtration technology for filtration of the iron ore slurry. This filtration technology is only covered under project boundary as required by para 6 of AMS.II.D methodology because the output of both filtration technology is the same and there is no further process or equipment affected in upstream or downstream to the project activity.

>> Applicability of Methodology and project boundary:

Referring to clarification request SSC-341 and therein the reference made to paragraph 58 of the EB 47 meeting report, the energy efficiency improvement project activity is not in a stand-alone facility but in a

complex industrial process and a sub-system of a large facility, SSC WG is requested to clarify whether

- the methodology AMS.II.D can be applied to this project activity
- the boundary for the underlying project activity can be restricted to the iron slurry filtration equipment/process

>> Selection of energy baseline:

With reference to para 7 of AMS IID ver 12, which states "*In the case of replacement, modification or retrofit measures, the baseline consists of the energy baseline of the existing facility or sub-system that is replaced, modified or retrofitted.*" Thus considering historical energy consumption data of the existing facility towards determination of energy baseline is more reasonable to justify signal to noise ratio in the project cases where replacement, modification or retrofit measures of existing facility is involved.

However, in case of a capacity addition project which falls under the requirement of paragraph 8 of AMS IID version 12. As per para 8, which states "*For new facilities and project activities involving capacity additions* ***the energy baseline consists of the facility that would otherwise be built;*** *the most plausible baseline scenario for the project activity shall be evaluated based on the related and relevant requirements in the General Guidance for SSC methodologies.*" Thus in case of a capacity addition project concept where in the baseline unit operation and the new project unit operation will cater the same process purpose and they will operate in parallel mode inside the large industrial facility with comparable input and output and with different specific energy consumption level. In addition to this, if the quality of input raw material to the unit operation varies with batch then as the result a wide variation can be observed in the specific energy consumption for the identified unit operations.

In regard to the static (ex ante) versus the dynamic (ex post) methods for determining the baseline emissions, in case of new facilities and project activities involving capacity additions with varying specific energy consumption of the continued baseline equipment, SSC WG is requested to clarify whether the methodology restrict the selection of energy baseline to be static or dynamic.

In the given context, SSC WG is requested to provide guidance whether consideration of historical energy consumption data of existing baseline system to determine the fixed energy baseline for the new project activity will be appropriate and can address the issue of signal to noise ratio of para 4 of AMS-II.D version 12; or else a dynamic baseline approach for determination of energy baseline for the project unit operation will be more conservative and appropriate.

>> Baseline Mix-emission factor:

The historic scenario of source of power was grid but project activity was supposed to draw power from mix of grid and captive power plant. SSC WG is requested to clarify what emission factor is most appropriate to consider in case of this project

- emission factor of grid
- weightage emission factor of grid and captive power plant

Recommendation by the SSC WG:

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

Please refer to paragraph 18 of the meeting report of the SSC WG 38 <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 as follows:

1. On the applicability of AMS-II D version 12 to the project activity described in the submission

AMS-II.D is applicable to the project activity if the following considerations are taken into account for the determination of emission reductions:

- Per paragraph 3 of AMS-II.D, the campaign shall include direct measurements and recording of the energy use within the project boundary. In addition, per paragraph 4 of AMS-II.D, the baseline measurement campaign shall provide sufficient information such that the impact of the measures implemented by the project activity can be clearly distinguished from changes in energy use due to other variables not influenced by the project activity (signal to noise ratio);
- Thus, the project proponent should demonstrate that there are no potential external factors (upstream or downstream) associated with the baseline or project activity that may influence the energy savings from the project activity. If a DOE can positively validate such a demonstration, then the project boundary can be restricted to the iron slurry filtration system(s);
- If there are such external factors, then the project boundary should be extended to cover all such processes that influence the energy savings from project activity. Examples of possible external factors are upstream pumping requirements for the slurry (due to increased or decreased back pressure caused by the different filtering systems) and increased or decreased drying requirements of the slurry downstream from the filtration systems.

2. On the selection of energy efficiency baseline

The energy efficiency baseline for the project (which is a capacity expansion) described in the submission should be determined using the most conservative of the following two approaches described below:

(a) **Approach 1:** from the performance data obtained from a manufacturer for the baseline equipment (scenario) that would have been implemented in the absence of the CDM project activity. Please note that the existing filtration system/equipment may or may not be the option that would have been implemented in the absence of the project activity and if it had been the option implemented it would have likely performed more efficiently than the older, existing system. Characteristics reflecting the performance of new equipment at the time of commissioning of the project activity should be obtained from the manufacturer, under conditions found in the subject facility;

(b) **Approach 2**: from a baseline measurement campaign carried out (before or after project implementation) on the existing equipment/system (assuming it is demonstrated to be the baseline scenario), to establish the performance characteristics of the baseline scenario over all identified parameters (independent variables) that will have an effect on the performance of the equipment.

The “baseline measurement campaign” shall include direct measurements and recording of the energy use within the project boundary. In addition, per paragraph 4 of AMS-II.D, the baseline measurement campaign shall provide sufficient information such that the impact of the measures implemented by the project activity can be clearly distinguished from changes in energy use due to other variables not influenced by the project activity (signal to noise ratio). Such a demonstration shall be validated by the DOE.

Thus:

- The project boundary shall be defined to include downstream and upstream systems, if there is any reasonable possibility that their energy use and/or emissions will be impacted by the project activity (thus requiring measurement of energy use of impacted downstream and upstream systems);
- Independent variables that determine energy use, such as slurry flow rates, feedstock/material characteristics and final product characteristics shall also be monitored during both the baseline

measurement campaign for the baseline scenario equipment/system and during the crediting period for the project equipment/system;

- The baseline measurement campaign is conducted for a period of time sufficient to capture the range of independent variables expected to be, or actually, encountered during the crediting period;
- The baseline measurement campaign energy use (and/or emissions) data and the independent variable data are used to define a relationship between baseline energy use/emissions and the independent variables. During the crediting period, the same independent variables are monitored and used for calculating the baseline energy use/emissions for the values of the independent variables experienced during the crediting period. If, during the crediting period, conditions are such that the value(s) of the independent variables fall outside of the range of value(s) encountered during the baseline campaign, then either: (a) additional analysis is required to conservatively demonstrate that the relationship between baseline energy use/emissions and the independent variables (as defined using data collected during the baseline campaign) is still valid; or (b) a new baseline measurement campaign must be conducted; or (c) emissions reductions cannot be claimed during periods of time when the value(s) of the independent variables fall outside of the range of value(s) encountered during the baseline campaign.

A third approach as an alternative for Approach 1 and Approach 2 above, for determining the energy baseline from the average of historical data of the pre-project equipment would only be applicable if at least most recent three years of such data prior to the project start date exists, if it can be shown that the baseline scenario is the operation of the pre-project equipment, that any affected upstream and downstream systems energy use are included, and that it can conservatively demonstrated that the operating conditions (slurry flow rates and pre- and post-filtering characteristics) are essentially the same in the baseline and project scenarios.

3. On baseline emission factor

According to the submission of the project proponent, prior to the project implementation, electricity was supplied by the grid and after project implementation electricity was supplied by a combination of the grid and a captive power plant. Given this situation, the intended simplicity and conservativeness of small-scale methodologies, and the uncertainties in the determination of what is the electricity supply baseline for this project, it is the recommendation of the SSC WG that the project proponent follow the approach defined in AMS-I.F (paragraph 15) which indicates that for new facilities, the most conservative of the emission factor for the two power sources should be used, i.e. the minimum of the emissions factor for the grid or the new captive power plant.

Signature of SSC WG Chair: Mr. Peer Stiansen

Date: 23/08/2012

Signature of SSC WG Vice-Chair: Ms. Fatou Gaye

Date: 23/08/2012

SECTION TO BE FILLED IN BY THE UNFCCC SECRETARIAT	
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History of the document

Version	Date	Nature of revision(s)
01.1	12 April 2012	Editorial changes to include new logo and other improvements.
01.0	2005	Initial publication.
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