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:	21–24 September 2009, SSC WG 22
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Eligibility of improved recovery in the flotation process through the use of inert grinding media in the IsaMill (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, version 11
Name of the authors of the query:	Ben Cirulis Institution: Sigma Global ben@sigmaglobalcompany.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 PP:

Comminution of ore is one of the most energy intensive steps of metal production. Worldwide, comminution has been reported to consume up to 4% of the total amount of electricity generated. Xstrata Technology have developed the IsaMill, a new generation grinding mill that significantly improves the energy efficiency of mineral processing. The IsaMill is a radical departure from conventional tumbling mills. Originally developed for ultra-fine grinding (product 80% passing size of less than 7 microns), its success led to further development for use in coarser grinding applications. The special features of the IsaMill include multiple grinding discs arranged along a horizontal shaft, an internal centrifugal classifier and use of fine inert grinding media.

There are three main attributes of the IsaMill technology that lead to significantly improved energy efficiency of comminution and beneficiation plants.

The first is the high energy efficiency of the IsaMill itself is due to its ability to use very fine media (typically 1-5mm diameter, compared to around 20mm diameter in a conventional ball mill). The large surface area of the media combined with high speed stirring of the mill creates many grinding events in a small space and high kinetic energy transfer.

The second is due to improved grinding circuit design. The use of fine media is enabled by the patented internal centrifugal classifier which retains the fine media and coarse particles in the mill. This, coupled with the design of the mill which ensures that the feed material passes through a series of grinding chambers that prevents short circuiting, enables the IsaMill to produce a sharp product size distribution in an open circuit which, in turn, leads to a simpler grinding circuit without the additional energy consumption associated with hydrocylcones, additional pumping requirements and high recirculating loads.

The third is due to improved beneficiation plant performance. Compared to conventional steel media, the

IsaMill's inert grinding media also greatly reduces the generation of ferric ions. Ferric ions can contaminate the surface of the mineral particle and inhibit the performance of downstream flotation circuits. Reducing the surface contamination leads to improved mineral recovery, and lower energy consumption per unit of mineral product.

Accreditation under the Clean Development Mechanism is being considered for a project activity that involves the replacement of an existing ball mill grinding circuit with the IsaMill technology. This project activity is aimed primarily at energy efficiency and will be implemented at a single mineral production facility. The project boundary is considered to include the whole comminution and beneficiation plant that will be affected by the project activity.

Prior to preparation of the Project Design Document, comments are being sought from the SSC WG on the proposed baseline and emissions reduction calculation prepared according to AMS-II.D. Energy efficiency and fuel switching measures for industrial facilities --- Version 11.

Prior to the project, the energy consumed by the mineral processing facility is calculated as follows:

ECbaseline = EUbaseline/Tbaseline

Where:

ECbaseline = Electricity consumption rate in the baseline in GWhr/t concentrate

EUbaseline= Metered electricity use for the mineral processing plant within the project boundary over the baseline period, in GWhr.

Tbaseline = Amount of concentrate produced during the 3 year period prior to the project, in tonnes.

The baseline emissions are calculated as:

BEy = ECbaseline * Ty * EF

Where:

BEy = Baseline Emissions in the year y in tonnes CO2e

EF = Emission factor for the electricity displaced calculated in accordance with provisions in AMS-I.D.

Under the project scenario, the project emissions will be calculated ex-post as follows:

PEy=EU¬project,y * EF

Where:

PEy= Project Emissions in the year y, in tonnes CO2e

EU¬project,y = Metered electricity use for the mineral processing plant within the project boundary in year y, in GWhr.

The emission reduction is then calculated as follows:

ERy= BEy -PEy

Where:

ERy= Emission reduction in the year y, in tonnes CO2e

Recommendation by the SSC WG:

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

Please refer to paragraph 44 of the meeting report of the SSC WG 22 (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 currently written AMS-II.D is not applicable to the underlying project activity. The SSC WG agreed to highlight the following issues:

- It needs to be confirmed that the proposed project boundary that includes comminution and beneficiation plant covers the whole mineral processing plant and is not a sub-system of a large complex industrial facility where there could be other potential external factors integrated to comminution and beneficiation process that may influence the estimation of electricity savings per tons of concentrate produced. In other words, the author of the submission shall explain how the energy savings due to 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). In this regard, the submission author may wish to note that if an energy efficiency improvement project activity is not in a stand-alone facility but in a complex industrial process and/or a sub-system of a large facility, it may be difficult to fit under the SSC methodology as there may be considerable uncertainties in estimating baseline and project emission using the framework of a simplified small-scale methodology (see also paragraph 58 of the EB 47 meeting report which states):

  "The Board considered the new small-scale methodology "AMS-II.K Industrial process optimization for energy efficiency and electricity generation" recommended by the SSC WG and agreed not to approve the methodology. The proposed methodology does not adequately capture baseline and project emissions associated with the complex industrial process to which the methodology is applicable. The Board was of the opinion that a simplified small scale methodology may not provide the right framework for the kind of technology/measure being addressed by the methodology."

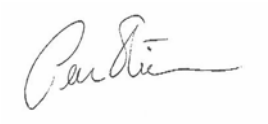
- It shall be ensured that there would not be any alternation in the quality of the input ore and concentrate (as compared to the baseline) that may influence the energy saving calculation.

- It is not clear from the submission how energy consumption and the concentrate in the baseline and project are monitored. A more detailed procedure to monitor energy consumption and product output using IsaMill versus baseline technology types is required to ensure head-to-head comparison.

Signature of SSC WG Chair ……..

(Hugh Sealy)

Date: 24/09/2009



Signature of SSC WG Vice-Chair ……..

(Peer Stiansen)

Date: 24/09/2009

Information to be completed by the secretariat	
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