



**Approved baseline and monitoring methodology/  
methodological tool clarification response form  
(Version 02.0)**

**INFORMATION TO BE COMPLETED BY THE SECRETARIAT OR PANEL/WG**

<b>Date and number of Panel/WG meeting:</b>	26–29 August 2013, SSC WG 41
<b>Title/Subject of the request for clarification:</b>	Clarification on baseline and monitoring for variable load devices using AMS-II.C
<b>Reference number of the request for clarification:</b>	SSC_689
<b>Exact reference (number, title and version) of the methodology or methodological tool to which the request for clarification applies:</b>	AMS-II.C – version 14.0 “Demand-side energy efficiency activities for specific technologies”
<b>Fast track or Regular track:</b>	<input type="checkbox"/> Fast track <input checked="" type="checkbox"/> Regular track

**Summary of the request for clarification**

Original text from DOE:

**Background Information:** In Telecom sector in India, the Telecom operators share the common facility i.e. Mobile Towers for providing the Mobile services (for transmitting and receiving the network services). The same is governed by the Telecom Regulatory Authority of India (TRAI).

Base Station electronics or Base Transceiver Stations (BTS) facilitate wireless communication between user equipments like mobile phones and a network (GSM/CDMA etc) by transmitting and receiving radio signals, within a specific frequency band. This BTS equipment consumes the majority of the energy in the operation. For uninterrupted and quality power supply such facilities mainly rely upon Grid.

In a proposed project activity PP is replacing highly energy consuming BTS equipments (Make A) with energy efficient BTS equipments (Make B).

Depending upon the load of service in the region the BTS A is having power requirements in the range of 2000 to 2500 Watts (i.e. from Zero Load to Peak Load) where as BTS B is having power requirements in the range of 1200 to 1400 Watts (i.e. from Zero Load to Peak Load).

Since, in one particular mobile tower facility, two to three Telecom operators are having their setup for providing mobile services in the region, the energy consumption of all the equipments is monitored by only one energy meter which is beyond PP's or any other telecom operator's control. However, PP indirectly monitors (continuously) the energy consumption of its BTS equipments along with several other parameters through Base Station Controller which are connected to Mobile Switching Centre.

**Project Scenario:** The PP wishes to replace the baseline equipments of Make A with Project energy efficient equipment of Make B.

The project activity meets the applicability conditions of AMS-II.C version 14. Since, in this case the project activity involves electricity savings. Also, the equipments are variable load in nature (depending upon the load in the region) and hence, Option 2 should be followed by PP to estimate the baseline emissions.

**Clarification Request:**

**1. Baseline emissions determination:**

As per AMS II.C/ Version 14 there are 3 options available to PP for determining baseline emissions where the energy displaced is electricity.

Option 2 – Variable load device(s), regression approach is limited to retrofit of the existing equipments. The project activity replaces the baseline equipments with project case equipments. Please note that in both, baseline and project, cases the equipments are having variable load characteristics.

Clarification is requested on how to determine the baseline emissions for the project activities which are

replacing the baseline equipments.

## 2. Measurement of energy consumption of Project equipments:

Considering, practical scenario where PP has no control over the metering system nor PP can implement a separate meter for direct measurement of energy specific only to its own equipments, following clarifications requested.

Since, BTS equipments can operate in a pre-defined range and hence, Can PP monitor the energy consumption for project by sampling the voltage measurement and monitoring the Operating hours?

If, the voltage measurement and operating hours cannot be used, can PP use the Mobile switching centre data, recorded through Base station controller to monitor the energy consumption?

### Clarification by the secretariat or Panel/WG

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

Regarding the first question, the author does not appear to be asking for a clarification of the methodology, but for guidance on how to develop a reliable and conservative monitoring and analyses strategy for its proposed project ("Clarification is requested on how to determine the baseline emissions for the project activities which are replacing the baseline equipment"). The SSC WG is not in a position to provide such advise other than to indicate that the proposed strategy, as indicated in subsequent communication from the query author, of determining the baseline emissions based upon the average of "power" recorded on zero and peak telecommunications load would appear to be equivalent to using option 1 of AMS-II.C. Option 1 is only applicable if, as indicated in paragraph 11 of AMS.II-C (version 14) that "Data is considered to demonstrate a constant rate of energy consumption if 90% of the energy consumption values are within  $\pm 10\%$  of the annual mean".

The second query addresses the issue on whether the project proponent can use voltage measurement, operating hours or data from their switching centre data. Unfortunately it is beyond the scope of the SSC WG to assess and determine the adequacy of specific monitoring strategies for particular projects. This is best assessed by the project proponent and its experts as well as the DOE assigned to the project. The SSC WG does note though that voltage can be a proxy for power consumption if current flow and power factor are constant.

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### Document information

Version	Date	Description
02.0	18 July 2013	Revised to remove the row "Date and signature of the chair and vice chair of Panel/WG".
01.0	4 July 2013	Initial publication. This document supersedes and replaces the following documents: <ul style="list-style-type: none"> <li>Recommendation Form for Small Scale Methodologies (F-CDM-SSCwg) (Version 01.1);</li> <li>Recommendation Form for Small Scale A/R Methodologies and Procedures (F-CDM-SSC-AR) (Version 01.1).</li> </ul>
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