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# **VALIDATION OPINION FOR REVISION OF REGISTERED MONITORING PLAN**

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**Shivalik Power & Steel (P) Ltd**

**8.5MW Biomass based Power  
Project**

**UNFCCC Ref. No. 0369**

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**SGS Climate Change Programme**

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<b>Organisation:</b>		<b>Client:</b>	
SGS United Kingdom Limited		Shivalik Power & Steel (P) Ltd.	
<b>Subject:</b>			
Validation Opinion for Revision of Registered Monitoring Plan:			
[X]	Proposed revision includes revisions proposed by the PP/DOE		<b>Distribution/Document Control</b>
	Proposed revision only includes the request by the CDM EB		
	Proposed revision includes not only request by the CDM EB but also additional revisions proposed by the PP/DOE		
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## Abbreviations

CDM	Clean Developed Mechanism
CAR	Corrective Action Request
CER	Certified Emission Reduction
GEF	Grid Emission Factor
SPSL	Shivalik Power and Steel Limited
CL	Clarification Request
PDD	Project Design Document
BE	Baseline Emissions
ER	Emission Reduction
MP	Monitoring Plan
MW	Mega Watt
MWh	Mega Watt hour
PE	Project Emissions
PP	Project Participant
UNFCCC	United Nations Framework Convention on Climate Change
SPSL	Shivalik Power & Steel (P) Ltd.
CSEB	Chhattisgarh State Electricity Board
RMP	Revised Monitoring Plan

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## 1. Validation Opinion

Paragraph 57 of the modalities and procedures for the CDM allows project participants to revise monitoring plans in order to improve accuracy and/or completeness of information, subject to the revision being validated by a Designated Operational Entity.

SGS United Kingdom Ltd has been contracted by Shivalik Power & Steel (P) Ltd. To perform such a validation of the revision of monitoring plan according to the procedure detailed in Annex 28 to EB 49 meeting report; the original monitoring plan is part of the PDD of registered CDM project: 8.5 MW Biomass based Power Project, UNFCCC No. 0369. The purpose of a validation is to have an independent third party assessment of the revision of monitoring plan. In particular, the level of accuracy and/or completeness in the proposed revision of the monitoring plan, and the conformity with approved monitoring methodology applicable to the project activity.

By applying the proposed revision of monitoring plan, monitoring of the power supply to the end user and auxiliary power consumption can be done more precisely. As per the registered PDD (available on <http://cdm.unfccc.int/Projects/DB/SGS-UKL1145003272.54/view>), page 3, Section A.2 line no. 1 to line no. 4, *"M/s. Shivalik Power & Steel (P) Ltd. (SPSL) is a new company incorporated on 29<sup>th</sup> April 2004 and proposes to invest in power plants as well as energy intensive businesses of steel castings. The company is planning to setup a new power plant using biomass (mainly rice-husk) available in the region. The power generated in the plant will be used by own steel plant (expected to start operations in 2007) using direct transmission line"* with surplus to be exported to the grid as mentioned in line no. 7 and 8. The power generated in the 8.5 MW biomass based power plant is now being used in the steel plant (commissioned on 27<sup>th</sup> December 2007 as checked during verification on 07.10.2008 with surplus being exported to the regional grid via Chhattisgarh State Electricity Board (CSEB). As stated in the registered PDD, the project activity was proposed by PP to set up the biomass based power plant to generate power for use in their own steel plant. Hence, the baseline evaluation as mentioned in the registered PDD applied to the steel plant as well.

Therefore, the revision in the monitoring plan is proposed to facilitate a monitoring system that helps in estimation of emission reductions in a transparent manner. The project proponent has installed a number of energy meters at the plant site for the effecting monitoring of the electricity supplied to the end user. Complying with the requirements of the approved methodology AMS ID version 07 and the registered PDD, few more parameters have been incorporated in the revised monitoring plan which has been discussed in detail in section 4.6.

This revision improves the accuracy of information provided and consistency in the registered PDD and the monitoring plan.

Furthermore, we confirm that:

- (a) the proposed revision points have been described, and an assessment has been provided to substantiate the reasons for each of the proposed revision points of the registered monitoring plan, using objective evidence;
- (b) the proposed revision of the monitoring plan ensures that the level of accuracy or completeness in the monitoring and verification process is not reduced as a result of the revisions;
- (c) the proposed revision of the monitoring plan is in accordance with the approved monitoring methodology applicable to the project activity whilst ensuring the conservativeness of the emission reductions calculation.
- (d) there are no findings from previous verification reports to take into account.

**Signed on Behalf of the Validation Body by Authorized Signatory**

Signature:



Name: Siddharth Yadav

Date: 10.12.2009

## **2. Introduction**

### **2.1 Objective**

Paragraph 57 of the modalities and procedures for the CDM allows project participants to revise monitoring plans in order to improve accuracy and/or completeness of information, subject to the revision being validated by a Designated Operational Entity.

SGS United Kingdom Ltd has been contracted by Shivalik Power and Steel (P) Ltd. to perform such a validation of the revision of monitoring plan according to the procedure detailed in Annex 28 to EB 49 meeting report; the registered monitoring plan is part of the PDD of registered CDM project: 8.5 MW Biomass based Power Project; UNFCCC ref. no. 0369. The purpose of a validation is to have an independent third party assessment of the revision of monitoring plan. In particular, the level of accuracy or completeness in the proposed revision of the monitoring plan, and the conformity with the approved monitoring methodology applicable to the project activity.

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism (CDM) and the host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

SGS reviewed the project design documentation (revised monitoring plan), using a risk based approach and conducted follow-up interviews.

### **2.2 Scope**

The scope of the validation is defined as an independent and objective review of revision of monitoring plan. The information in these documents is reviewed against the Kyoto Protocol requirements, the UNFCCC rules and associated interpretations.

The validation is not meant to provide any consulting towards the Client/the project. However, SGS may issue requests for clarifications and/or corrective actions which may provide input for improvement of the project design.

### **2.3 GHG Project Description**

As per <http://cdm.unfccc.int/Projects/DB/SGS-UKL1145003272.54/view> web page there is no change in the project activity description. The project was registered on 05/06/2006 under UNFCCC ref. no. 0369.

### 3. Methodology

#### 3.1 Review of CDM-PDD and Additional Documentation

The validation is performed primarily as a document review of the publicly available project documents. The assessment is performed by trained assessors using a validation protocol.

#### 3.2 Use of the Validation Protocol

The validation protocol used for the assessment is partly based on the templates of the CDM Validation and Verification Manual version 1 (EB44 Annex.3):

- it organises, details and clarifies the requirements the project is expected to meet; and
- it documents both how a particular requirement has been validated and the result of the validation.

The validation protocol consists of several tables. The different columns in these tables are described below.

Checklist Question	Ref ID	Means of Verification (MoV)	Comment	Draft and/or Final Conclusion
The various requirements are linked to checklist questions the project should meet.	Lists any references and sources used in the validation process. Full details are provided in the table at the bottom of the checklist.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (Y/OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). A Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

The validation protocol is attached with the report as Annex 1.

#### 3.3 Findings

As an outcome of the validation process, the team can raise different types of findings

In general, where insufficient or inaccurate information is available and clarification or new information is required the Assessor shall raise a **Clarification Request (CL)** specifying what additional information is required.

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR)**. A CAR is issued, where:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

A Forward Action Request (FAR) is raised during verification for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

The validation process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a CL/FAR may result in a CAR. Information or clarifications provided as a result of a CL/FAR may also lead to a CAR.

Corrective Action Requests, Clarification Requests and Forward Action Requests are raised in the draft validation protocol and detailed in a separate form (Findings Overview). In this form, the Project Developer is given the opportunity to address and "close" outstanding CARs and respond to CLs and FARs. The detailed Finding Overview is attached with this document as Annex 2.

### **3.4 Internal Quality Control**

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.



## 4. Validation Findings

### 4.1 Application of Monitoring Methodology and Monitoring Plan

The revision of monitoring plan is a result of

- A recommendation by the PP as mentioned in section D and section E of the approved revised monitoring plan.

#### History:

The revision in monitoring plan was earlier requested on 30/07/2008 to CDM EB which was rejected on 02/12/2009 stating:

*Please be informed that your request for revision of monitoring plan for the project activity "8.5 MW Biomass based Power Project" was considered by the Chair of the EB and the Meth Panel in accordance with the procedure for revising monitoring plan. We regret to inform you that the Chairs decided not to approve your request for revision of the monitoring plan as the proposed revision is not purely a revision of the monitoring plan and may have an impact on the original baseline scenario described in the PDD, which did not justify the baseline for the portion of electricity supply to the steel unit.*

An unsolicited letter was submitted regarding the above rejection to CDM EB dated 04/04/2009; which the CDM EB responded in EB47 dated 10th June 2009 Ref: DV/AM/NA/nmw, which states:

*The DOE may submit a new request for revision of the monitoring plan with justification/clarification to address the issues that form the basis of rejection of the previous request. The secretariat will expeditiously process the new request in accordance with the procedure for revision of the monitoring plan in Annex 34 of EB36.*

*In response to the same, the revised monitoring plan was submitted by project proponent. The revised monitoring plan and revised validation opinion are now re-submitted to CDM EB with more clarification to address the concern of CDM EB.*

**The proposed revision of the monitoring plan ensures that the level of accuracy and completeness in the monitoring and verification process is not reduced as a result of the revisions (details below).**

The revision in the monitoring plan is proposed due to connection of electrical loads at the site of Steel plant in Dec 2007 as envisaged in the registered PDD. Power from the project activity is being supplied to the Steel Foundry (Foundry Furnace and Foundry Accessories), part of the Steel Plant of the project proponent in the same premises in addition to the export to the regional grid as was the case with respect to the approved monitoring plan available on <http://cdm.unfccc.int/Projects/DB/SGS-UKL1145003272.54/view>. Referring registered PDD section D.3 ID 1.1, EBy (Total Power wheeled to the users) already represents the total power wheeled to the grid which is the summation of power wheeled using grid and direct transmission line (please refer comment section in the same table). But to keep the same more transparent, the revision in monitoring plan was requested.

It has been verified from the registered PDD which states that a steel plant will come up at the same site in year 2007 and a part of electricity from the biomass based power plant will be supplied to the Steel Foundry (Foundry Furnace and Foundry Accessories). Complying with the requirement of the registered PDD, a part of the electricity generated from the power plant is supplied to the Steel Foundry and excess is being supplied to the CSEB grid. The factory license (serial no 006 dated 11/04/2008) and a combined layout dated 10/08/07 has been submitted by the proponent which clearly specify the inclusion of the steel plant within the company premises.

The revision in the monitoring plan is proposed to facilitate a monitoring system that helps in estimation of emission reductions in a transparent manner. Project proponent has installed a number of energy meters at site for the purpose which are being included as part of the monitoring plan. This was also checked during site visit and found to be correct. The following parameters have been added to the monitoring plan:

#### 1. Gross power generated by the power plant

The gross power generated from the power plant will be directly measured by a high accuracy energy meter. The gross electricity generated will be continuously metered by an energy meter, but the data will be recorded manually by plant personnel on a monthly basis. The energy meter will be under regular maintenance and will be calibrated annually to ensure the accuracy of the data monitored.

## **2. Auxiliary power consumption in the power plant**

Auxiliary power consumption in the power plant will be calculated by applying the equation mentioned below:  
Auxiliary power consumption of the power plant= [Gross power supplied by the power plant + Power import from grid + Power supplied by DG – Power supplied to foundry furnace – Power to foundry accessories – Power export to grid]

The data for the auxiliary consumption in the power plant will be calculated and reported on monthly basis from the metered data of all the parameters included in the given equation.

## **3. Power export to the grid**

The power exported to the grid will be directly measured by an authorised high accuracy energy meter. The Export-Import energy meter is under the custody of Chhattisgarh State Electricity Board (CSEB). Joint Meter Reading (JMR) from the Export-Import energy meter is recorded every month in the presence of CSEB officials and plant personnel. The data is recorded on a JMR sheet, which is duly signed by the CSEB officials and plant personnel. The same JMR sheet is used by the CSEB for monthly billing purpose. The energy meter will be calibrated annually by CSEB officials.

## **4. Power import from the grid**

The power imported from the grid will be directly measured by an authorised high accuracy energy meter. The Export-Import energy meter is under the custody of Chhattisgarh State Electricity Board (CSEB). Joint Meter Reading (JMR) from the Export-Import energy meter is recorded every month in the presence of CSEB officials and plant personnel. The data is recorded on a JMR sheet, which is duly signed by the CSEB officials and plant personnel. The same JMR sheet is used by the CSEB for monthly billing purpose. The energy meter will be calibrated annually by CSEB officials.

## **5. Power supply to the Foundry Furnace**

The power supply to the Foundry Furnace (Captive consumption) from the power plant will be directly measured by a high accuracy energy meter. The power supply to the Foundry Furnace will be continuously metered by an energy meter, but the data will be recorded manually by plant personnel on daily basis. The energy meter will be under regular maintenance and will be calibrated annually to ensure the accuracy of the monitored data.

## **6. Power supply to the Foundry Accessories area**

The Power supply to the Foundry Accessories area (Captive consumption) from the power plant will be directly measured by a high accuracy energy meter. Power supply to the Foundry Accessories area will be continuously metered by an energy meter, but the data will be recorded manually by plant personnel on daily basis. The energy meter will be under regular maintenance and will be calibrated annually to ensure the accuracy of the monitored data.

## **7. Power from DG set**

The power from DG set will be directly measured by a high accuracy energy meter. Power from DG set will be continuously metered by an energy meter, but the data will be recorded manually by plant personnel on daily basis. The energy meter will be under regular maintenance and will be calibrated annually to ensure the accuracy of the monitored data.

## **8. Diesel consumption**

The diesel consumption in the DG set will be estimated based on the purchased quantity and stock inventory. The purchased quantity of diesel can be verified against the purchase receipts & invoices and stock inventory can be verified from the stock inventory record available at the plant site.

## **9. Biomass consumption**

The biomass consumption will be estimated based on the purchased quantity and stock inventory. Biomass available in the store and biomass quantity issued for production is available at the plant site for verification. Biomass consumption is also determined from the Tare Weight method as specified in the revised monitoring plan (Annex 2) which has been checked and found to be correct.

## **10. Coal consumption**

The coal consumption will be estimated based on the purchased quantity and stock inventory. All purchase records, invoices, coal available in the store and coal quantity issued for production is available at the plant site. Coal consumption is also determined from the Tare weight method as specified in the revised monitoring plan (Annex 2) which has been checked and found to be correct.

## **11. Coal net calorific value**

The net calorific value of coal will be estimated by using the Bomb Calorimeter. Periodic sample testing has been made part of normal purchasing activity and daily reporting of the data will be done.

The quality assurance and quality control measures have been considered and planned for the monitoring of above mentioned parameters and data collection, data corroboration and data management. Monthly CDM report is also prepared which is being checked by the CDM Manager and the plant Vice-President. Periodic sampling is being done for calorific value calculation. Quantity of fuel used can be cross-checked with supplier's data, purchase data and invoices.

**The proposed revision of the monitoring plan is in accordance with the approved monitoring methodology applicable to the project activity (details below).**

The proposed revision of the monitoring plan is in accordance with the approved monitoring methodology applicable to the project activity. It has been further assured that there will be no effect by revision in monitoring plan on the original chosen baseline mentioned in the registered PDD and it will remain the same. This is demonstrated as mentioned below:

AMS ID, version 07 is applicable to renewable energy units "that supply electricity to and/ or displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit".

As stated in the registered PDD, the project activity was proposed by PP to set up the biomass based power plant to generate power for use in their own steel plant. Hence, the baseline evaluation as mentioned in the registered PDD applied to the steel plant as well. As per the registered PDD (page 9 of section B.3), various alternatives evaluated to generate power for the steel plant. Levelized cost of electricity production (Rs/ kWh) for biomass based project (Rs. 2.58/kWh) was estimated to be much higher than a similar coal based power project (Rs. 1.96/kWh). Also, as mentioned in the registered PDD page 9; the results of this evaluation are tabulated as below:

Alternative	Fuel Choice	Cost of Power
Alt-1	Coal	Rs. 1.96 /kWh
Alt-2	Fuel Oil	Rs. 4.30 /kWh
Alt-3	Biomass	Rs. 2.58/kWh

The best possible option for PP was to use coal for power generation (as per Section B.3 of registered PDD. As clarified above, the following can be concluded:

- The project activity was planned to meet the captive demand of its upcoming steel plant and to export the surplus to the grid as referred from registered PDD
- The alternative to the project activity to meet the power demand of steel plant were checked during validation as referred the additionality section of the registration and validation report form (page 6) <http://cdm.unfccc.int/UserManagement/FileStorage/4U9ZRMNXFUGT53A4NZAVT5H8U0EMPU>;
- Although the coal based alternative was the most likely scenario due to minimum cost of power generation, the grid emission factor was taken the baseline emission factor due to conservativeness

As per meth AMS ID, version 07, there are two baseline emission factors as per paragraph 6 & 7. The project activity falls under Para. 7 and hence emission factor based on OM/ BM applies to it. This has been verified that the same is the part of the registered PDD.

Possible impacts on emission reduction calculations due to change in monitoring plan:

As per paragraph 7 of the approved methodology AMS ID version 07, baseline is the kWh produced by the renewable generating unit multiplied by an emission coefficient. It has been demonstrated above that the baseline of the project activity would still remain the same. Hence there will be no change in emission reduction calculation due to change in monitoring plan.

Rest of the monitoring plan remains the same as mentioned in the registered PDD available at UNFCCC website <http://cdm.unfccc.int/Projects/DB/SGS-UKL1145003272.54/view> and revised monitoring plan is attached with the revised validation opinion.

There is no other change in the registration request form by SGS, dated 12/04/2006 available on UNFCCC webpage <http://cdm.unfccc.int/Projects/DB/SGS-UKL1145003272.54/view>.

This revision improves the accuracy of information provided and consistency in registered PDD and the monitoring plan.

## 4.2 Findings of Previous Verification Reports

No pending issue from previous verification reports, the revision was requested by project participant because project activity started to supply electricity to in-house steel unit now.

## 5. List of Persons Interviewed

Date of site visit	Name	Position	Short description of subject discussed
07/10/2008	Vishal Sharma	Joint MD, SPSL	Assessment of Project Boundary
	G.B.Bandopadhyay	V.P. (PP), SPSL	Plant Operations
	Vinay Agrawal	Technical Director, SPSL	
	G.B.Bandopadhyay	V.P. (PP), SPSL	Monitoring and measuring system
	Vinay Agrawal	Technical Director, SPSL	<ul style="list-style-type: none"> <li>➤ Collection of measurements</li> <li>➤ Observations of established practices</li> <li>➤ Data Verification of monitoring parameters</li> </ul>
	G.B.Bandopadhyay	V.P. (PP), SPSL	CDM monitoring & reporting documentation
	Neha Rao	Consultant, Emergent Ventures India Pvt. Ltd.	
	Sunil Sharma	Sr. Consultant, Emergent Ventures India Pvt. Ltd.	
	Vishal Sharma	Joint MD, SPSL	Quality Assurance – Management and operating system
	Vinay Agrawal	Technical Director, SPSL	

## 6. Document References

Category 1 Documents (documents provided by the Client that relate directly to the GHG components of the project, (i.e. the CDM Project Design Document, confirmation by the host Party on contribution to sustainable development and written approval of voluntary participation from the designated national authority):

- /1/ Registered PDD version 1.2 dated 15<sup>th</sup> February 2006
- /2/ Revised Monitoring Plan dated 05<sup>th</sup> December 2007 (approved on 31/01/2008)
- /3/ Validation report, dated 03<sup>rd</sup> November 2005
- /4/ Methodology AMD ID version 07 dated 28<sup>th</sup> November 2005

Category 2 Documents (background documents used to check project assumptions and confirm the validity of information given in the Category 1 documents and in validation interviews):

- /5/ The factory license (serial no 006 dated 11/04/2008) and a combined layout dated 10/08/07.
- /6/ Meter No's and Calibration certificates of meter for Power supply to the Foundry Furnace (meter no. 07882890, calibration certificate no: VEPL/T&CF/EM/024/Rev:0 dated 02/01/2009) and Power supply to the Foundry Accessories (meter no 07885954, calibration certificate no: VEPL/T&CF/EM/024/Rev:0 dated 29/12/2008)
- /7/ Unsolicited letter submitted by SGS to the CDM EB dated 04/04/2009
- /8/ Response letter received from the CDM EB having reference no. DV/AN/NA/nmw dated 10/06/2009
- /9/ Revised monitoring plan 10<sup>th</sup> October 2009
- /10/ Revised monitoring plan 10<sup>th</sup> October 2009 (revised format)

## Annex 1: Validation Protocols

Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
<b>A.1. General Requirements</b> <i>(Note that the sections A.1.1- A.1.4 may be completed after the other sections are completed)</i>				
A.1.1. Is the revision in the monitoring plan based on a decision by the CDM EB	EB49, Annex 29	DR	No, the revision in monitoring plan is not based on a decision by the CDM EB.	Y
A.1.2. Is the revision based on a decision by CDM EB but also additional revisions are proposed by the PP/DOE	EB49, Annex 29	DR	No, the revision in monitoring plan is not based on a decision by the CDM EB	Y
A.1.3. Is the need for revision in monitoring plan spotted during the first monitoring period?	EB49, Annex 29 Project page on UNFCCC website	DR	No, there was no need to seek revision in monitoring plan during first monitoring period by the proponent as the actual monitoring system was in compliance with the registered monitoring plan. However, the proponent has sought a revision in monitoring plan during second monitoring period which was got approved by the CDM EB on 31/01/2008.	Y
A.1.4. Is the revised monitoring plan complete and does the revised monitoring plan follow the registered PDD template?	Registered PDD	DR	Yes, the revised monitoring plan is complete and the revised monitoring plan follows the registered PDD template.	Y
A.1.5. Has the revised monitoring plan submitted in track change mode for each of the revision point (issue)?	Revised monitoring plan	DR	The revised monitoring plan has been submitted by the proponent in track change mode for each of the revision point (issue).	Y
A.1.6. is there an objective evidence for each of the proposed revision point (issue)?			The factory license (serial no 006 dated 11/04/2008) and a combined layout dated 10/08/07 has been submitted by the proponent which clearly specify the inclusion of the steel plant within the company premises. Also, the calibration certificates of the meters for Gross power, Power supply to the Foundry Furnace, Power supply to the Foundry Accessories area and Power from DG set have been checked and found to be correct	Y



Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
A.1.7. Does the revised monitoring plan also include the Annex 4?	Registered PDD	DR	Yes, the revised monitoring plan includes the Annex 4 as appendix 2.	Y
A.1.8. Does the revised monitoring plan lead/associate to any kind of change in the project registered design?	Registered PDD & EB48 Annex 66-67	DR	No, the revised monitoring plan does not lead/associate to any kind of change in the project registered design	Y
<b>A.2. Data and Parameters Monitored</b>				
A.2.1. Does the revised monitoring plan in the PDD comply with the approved methodology provided for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period?	VVM Para. 91a/91d/121 Revised MP Section B.7 EB49, annex 2, para 9	DR	<p>The revision in the monitoring plan is proposed to facilitate a monitoring system that helps in estimation of emission reductions in a transparent manner. Project proponent has installed a number of energy meters at site for the purpose which are being included as part of the monitoring plan. This was also checked during site visit and found to be correct. The proposed revision of the monitoring plan is in accordance with the approved monitoring methodology applicable to the project activity. It has been further assured that there will be no effect by revision in monitoring plan on the original chosen baseline mentioned in the registered PDD and it will remain same.</p> <p>AMS ID, version 07 is applicable to renewable energy units “that supply electricity to and/ or displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit”. The following parameters have been added to the monitoring plan:</p> <ol style="list-style-type: none"> <li>1. Gross power generated by the power plant</li> <li>2. Auxiliary power consumption in the power plant</li> <li>3. Power export to the grid</li> <li>4. Power import from the grid</li> <li>5. Power supply to the Foundry Furnace</li> <li>6. Power supply to the Foundry Accessories area</li> <li>7. Power from DG set</li> <li>8. Diesel consumption</li> <li>9. Biomass consumption</li> <li>10. Coal consumption</li> </ol>	<p><del>CAR-01</del></p> <p>Closed out</p>

Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
			<p>11. Coal net calorific value</p> <p>The quality assurance and quality control measures have been considered and planned for the monitoring of above mentioned parameters and data collection, data corroboration and data management. Monthly CDM report is also prepared which is being checked by the CDM Manager and the plant Vice-President. Periodic sampling is being done for calorific value calculation. Quantity of fuel used can be cross-checked with supplier's data, purchase data and invoices.</p> <p>However, please clarify the following points:</p> <ul style="list-style-type: none"> <li>➤ The statement given on page 6 (last paragraph), "in the changed scenario" is not clear. Please clarify which scenario is being referred to.</li> <li>➤ Please provide any supportive document for commissioning/commercial operation start date of steel foundry and details of the meters used for power supply to steel foundry furnace and foundry accessories as mentioned in the revised monitoring plan page 07.</li> <li>➤ Please provide CDM manual/standard procedure (along with roles and responsibilities) will be followed for the monitoring of parameters as given in revision in monitoring plan to be applied for.</li> <li>➤ What is the purpose of DG set in the project activity? Is it a stand by unit in case of emergency or will be used for start up of the Boiler?</li> <li>➤ Please clarify that the net calorific value of biomass will be monitored or not since it is mentioned under remarks section of the parameter "coal net calorific value" that biomass calorific value is estimated by using in-house equipped Bomb Calorimeter.</li> </ul>	



Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
A.2.2. Are the changes in the monitoring plan inline to the applied methodology and tool?	Applicable methodology including version	DR	Yes, the changes in the monitoring plan are inline to the applied methodology and tool.	Y
A.2.3. Are the changes affecting the ER calculation (directly/indirectly)?	Revised MP	DR	<p>Possible impacts on emission reduction calculations due to change in monitoring plan: As per paragraph 7 of the approved methodology AMS ID version 07, baseline is the kWh produced by the renewable generating unit multiplied by an emission coefficient. It has been demonstrated above that the baseline of the project activity would still remain the same. Hence there will be no change in emission reduction calculation due to change in monitoring plan.</p> <p>Rest of the monitoring plan remains the same as mentioned in the registered PDD available at UNFCCC website <a href="http://cdm.unfccc.int/Projects/DB/SGS-UKL1145003272.54/view">http://cdm.unfccc.int/Projects/DB/SGS-UKL1145003272.54/view</a> and revised monitoring plan is attached with the revised validation opinion.</p> <p>However, please clarify that why baseline emissions, BE<sub>y</sub> have been estimated by using gross power generation under section 6.3.2 since as per the registered PDD, it should be estimated by using "Total power wheeled to the users". Also, as per the revised monitoring plan, page 06 clearly says "The CER estimation is based only on the net power export to the users from the project activity".</p>	CL-02 Closed out
A.2.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	RMP Section B.7	DR	Yes, the information given for each monitoring variable by the presented table is sufficient to ensure the verification of a proper implementation of the monitoring plan	Y
A.2.5. Has there been an issuance with the original monitoring plan of the registered PDD in the past?  A.2.6. if so how did the identified gaps effect the ER calculations for the	Project page on UNFCCC website	DR	Yes, there been an issuance with the original monitoring plan of the registered PDD in the past but there were no issues related to the revision in monitoring plan because at that time the steel plant was not installed and no change was envisaged as compared to the registered monitoring plant. 2nd monitoring period was issued considering the approved revised monitoring plan. However, during 3rd monitoring period, the steel plant was installed and the electricity exported to the steel plant had not been taken into	Y

Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
monitoring periods in the past?			account and only power export to the grid has been considered in the ER calculation. Therefore, there was no effect on the ER calculations for the monitoring periods in the past.	
A.2.7. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	RMP Section – B.7	DR	Yes, the information is given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records	Y
A.2.8. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	RMP Section-B.7	DR	Yes, the monitoring approach is in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy	Y
A.2.9. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.	Revised MP Section -B.7	DR	All formulae used to determine project emission are clearly indicated and in compliance with the monitoring methodology.	Y
<b>A.3. Quality Control (QC) and Quality Assurance (QA) Procedures</b>				
A.3.1. Is the selection of data undergoing quality control and quality assurance procedures complete?	VVM Para. 121	DR	Yes, the selection of data is undergoing quality control and quality assurance procedures complete	Y

Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs

Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
A.3.2. in case, a revision is proposed, the impact of the revision should be assessed and it not result in reduced level of accuracy and completeness in the monitoring and verification process	EB49, annex 2, para 9		The impact of the revision has been assessed and it has not resulted in reduced level of accuracy and completeness in the monitoring and verification process	Y
A.3.3. Are quality control procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?	VVM Para 121	DR	The quality control procedures and quality assurance procedures are sufficiently described to ensure the delivery of high quality data	Y
A.3.4. Is it ensured that data will be bound to national or internal reference standards?	VVM Para. 86d	DR	Yes, it is ensured that data will be bound to national or internal reference standards	Y
<b>A.4. Operational and Management Structure</b>				
A.4.1. Is the authority and responsibility of project management clearly described?	PDD Section B.7.2 /Annex 4	DR	Yes, the authority and responsibility of project management clearly described. Monthly CDM report is prepared is checked the plant Vice-President.	
A.4.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD Section B.7.2/Annex 4	DR	On monthly basis, these reports are forwarded to the management level. Technical Director: Overall responsibility of CDM registration and compliance with the CDM monitoring plan. Plant Head: Responsibility for completeness of data, reliability of data (calibration of meters), and monthly report generation Shift In-charge: Responsibility of daily report generation	Y
<b>A.5. Monitoring Plan (Annex 4)</b>				
A.5.1. Does the monitoring plan completely describe all	VVM Para. 122b	DR	Yes, the monitoring plan completely described in the section D.3 and extra information on Coal and biomass consumption: Tare Weight Method has been mentioned under Appendix 2 (Annex 4). However, the measures to be implemented for ensuring data	Y

Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
measures to be implemented for monitoring all parameter required, including measures to be implemented for ensuring data quality?			quality have been mentioned in section D.4 of the revised Monitoring Plan.	
A.5.2. Does the monitoring plan provide information on monitoring equipment and respective positioning in order to safeguard a proper installation?	VVM Para. 122b	DR	Yes, the monitoring plan provides information on monitoring equipment and respective positioning in order to safeguard a proper installation	Y
A.5.3. Is there any change proposed in the specifications of the monitoring equipment or their positioning or installation then the impact of the change due to revision should be assessed and it not result in reduced level of accuracy and completeness in the monitoring and verification process	EB49, annex 2, para 9		No, there are no changes proposed in the specifications of the monitoring equipment or their positioning or installation	Y
A.5.4. Are procedures identified for calibration of monitoring equipment?	VVM Para. 122a-c	DR	Procedures are identified for calibration of monitoring equipment.	Y
A.5.5. Is there any change proposed in the calibration procedures, if yes then the impact of the change due to revision should not result in reduced level of accuracy and completeness in the monitoring and verification process	EB49, annex 2, para 9		No, there are no changes proposed in the calibration procedures. However, the transparency has been maintained while mentioning the monitoring of Coal and biomass consumption: Tare Weight Method which has been mentioned in the revised monitoring plan very clearly.	Y

Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
A.5.6. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	VVM Para. 122a-c	DR	Yes, the procedures are identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	Y
A.5.7. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	VVM Para. 122a-c	DR	Yes, the procedures are identified for project performance reviews before data is submitted for verification, internally or externally?	Y

## Annex 2: Overview of Findings

### Findings Overview Summary

	CARs	CLs	FARs
Total Number raised	01	01	0

Date:	05/08/2009		Raised by:	Kunal Sharma		
Type:	CAR	Number:	01		Reference:	A.2.1
<b>Lead Assessor Comment:</b>						
<div><div>➤</div>The statement given on page 6 (last paragraph), “in the changed scenario” is not clear. Please clarify which scenario is being referred to.</div> <div><div>➤</div>Please provide any supportive document for commissioning/commercial operation start date of steel foundry and details of the meters used for power supply to steel foundry furnace and foundry accessories as mentioned in the revised monitoring plan page 07.</div> <div><div>➤</div>Please provide CDM manual/standard procedure (along with roles and responsibilities) will be followed for the monitoring of parameters as given in revision in monitoring plan to be applied for.</div> <div><div>➤</div>What is the purpose of DG set in the project activity? Is it a stand by unit in case of emergency or will be used for start up of the Boiler?</div> <div><div>➤</div>Please clarify that the net calorific value of biomass will be monitored or not since it is mentioned under remarks section of the parameter “coal net calorific value” that biomass calorific value is estimated by using in-house equipped Bomb Calorimeter.</div>						
<b>Project Participant Response:</b>				<b>Date:</b> 12/08/2009		
<div><div>➤</div>The statement given on page 6 refers to the revision in monitoring plan at site. This is the reason PP is proposing this change in monitoring plan. This is described in earlier sections of the revised monitoring plan.</div> <div><div>➤</div>Proof of Start of commercial operation of foundry is enclosed /DIC cert.jpg/. The details of the meters installed for measuring power supply to steel foundry furnaces and foundry accessories are also enclosed /Energy Meter Details.jpg/.</div> <div><div>➤</div>CDM manual /CDM Manual.pdf/ is enclosed covering the appended points as per the revised monitoring plan.</div> <div><div>➤</div>DG set is a stand by unit however may also be used for start up of the plant along with the power from the grid.</div> <div><div>➤</div>NCV of biomass will not be monitored. Plan is accordingly amended.</div>						
<b>Documentation Provided by Project Participant:</b>						
Details of the meters installed for measuring power supply to steel foundry furnaces and foundry accessories. CDM manual /CDM Manual.pdf/ is enclosed Factory license is enclosed Plant lay out is enclosed Revised revision in monitoring plan						
<b>Information Verified by Lead Assessor:</b>						
Documents as provided by the proponent						
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 20/08/2009		
The documents and clarification provided by the proponent have been verified and found to be appropriate. Hence, closed out						
Acceptance and Close out by Lead Assessor:				Date: 20/08/2009		

Date:	05/08/2009		Raised by:	Kunal Sharma		
Type:	CL	Number:	02		Reference:	A.2.3
Lead Assessor Comment:						

Please clarify that why baseline emissions, BE <sub>y</sub> have been estimated by using gross power generation under section 6.3.2 since as per the registered PDD, it should be estimated by using "Total power wheeled to the users". Also, as per the revised monitoring plan, page 06 clearly says "The CER estimation is based only on the net power export to the users from the project activity".	
<b>Project Participant Response:</b>	<b>Date:</b> 12/08/2009
The emission reductions are still based on the net power wheeled to the users. Due to the power supply from the DG set into the system, PP has revised the revised monitoring plan which entails monitoring of electricity from all sources and to all users. Please see Eq 1 and Eq 1.1 for details.	
<b>Documentation Provided by Project Participant:</b>	
PP's response	
Revised revision in Monitoring plan	
<b>Information Verified by Lead Assessor:</b>	
Response provided by the PP	
Revised revision in Monitoring plan	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 20/08/2009
The clarification provided by the proponent has been verified and found to be appropriate. Hence, closed out	
Acceptance and Close out by Lead Assessor:	Date: 20/08/2009