



VERIFICATION REPORT

– 1ST PERIODIC –

SHYAM DRI POWER LTD.

SHYAM DRI WHR CPP

UNFCCC REF. No. : 1642

Monitoring Period: 2009-03-25 to 2010-03-31
(incl. both days)

Report No: 8106837192 – 10/232

Date: 2012-04-17

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Verification Report:	Report No.	Rev. No.	Date of 1st issue:	Date of this rev.			
	8106837192 – 10/232	0.1	2012-03-14	2012-04-17			
Project:	Title:	Registration date:	UNFCCC-No.:				
	SHYAM DRI WHR CPP	2009-03-25	1642				
	Host Country:	Verification No.					
	India	1 st Periodic Verification					
	Crediting period:	From:	To:				
	<input type="checkbox"/> Renewable (7y) <input checked="" type="checkbox"/> Fixed (10y)	2009-03-25	2019-03-24				
	Project Scale:						
	<input checked="" type="checkbox"/> Large Scale <input type="checkbox"/> Small Scale						
Project Participant(s):	Host party:	Other involved parties:					
	India	NA					
	Client:	Project Owner:					
	SHYAM DRI Power Ltd.	SHYAM DRI Power Ltd.					
Applied methodology/ies:	Title:	No.:	Scope(s) / TA(s)				
	Consolidated methodology for waste gas and/or heat for power generation	ACM0004 ver. 2	01 & 04 /1.1 & 4.5				
Monitoring:	Monitoring period (MP):	No. of days:	MP No.				
	2009-03-25 to 2010-03-31 - both days included	372	1				
Monitoring report:	Title:	Draft version:	Final version:				
	SHYAM DRI WHR CPP	2010-09-20	2012-02-14				
Verification team / Technical Review and Final Approval	Verification Team:	Technical review:	Final approval:				
	Pankaj Mohan – TL, Ashwin A.S. - TMVineet Kumar – TM, Kiran Nayak - T	Stefan Winter Rainer Winter	Rainer Winter				
Emission reductions: [t CO_{2e}]	Verified amount	As per draft MR:	As per PDD:				
	96,339 t	96,507 t	94,303 t /a				
Summary of Verification Opinion:	<p>SHYAM DRI Power Ltd. has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 1st periodic verification of the project: "SHYAM DRI WHR CPP", with regard to the relevant requirements for CDM project activities.</p> <p>As a result of this verification, the verifier confirms that:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> all operations of the project are implemented and installed as planned and described in the validated project design document, <input checked="" type="checkbox"/> the monitoring plan is in accordance with the applied approved CDM methodology, <input checked="" type="checkbox"/> the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately, <input checked="" type="checkbox"/> the monitoring system is in place and functional. The project has generated GHG emission reductions, and <input checked="" type="checkbox"/> the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. <p>TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as follows:</p> <table border="1" style="width: 100%;"> <tr> <td>Emission reductions:</td> <td>96339</td> <td>t CO_{2e}</td> </tr> </table>				Emission reductions:	96339	t CO _{2e}
Emission reductions:	96339	t CO _{2e}					
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	2012-04-17 Shyam DRI FVR_final.doc			98			

Abbreviations:

ABC	After Burning Chamber
AFBC	Atmospheric Fluidized Bed Combustion
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CO₂	Carbon dioxide
CO_{2eq}	Carbon dioxide equivalent
CPP	Captive Power Plant
DG set	Diesel Generator set
DRI Kiln	Direct Reduced Iron Kiln
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
ITFC	Indus Technical & Financial Consultants
MP	Monitoring Plan
MR	Monitoring Report
PA	Project Activity
PDD	Project Design Document
PP	Project Participant
QA/QC	Quality Assurance / Quality Control
STG	Steam Turbo Generator
SV	Site Visit
UNFCCC	United Nations Framework Convention on Climate Change
WHRB	Waste Heat Recovery Boiler
XLS	Emission Reduction Calculation Spread Sheet

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1. INTRODUCTION

SHYAM DRI Power Ltd. has commissioned the TÜV NORD JI/CDM Certification Program (CP) to carry out the 1st periodic verification of the project

“SHYAM DRI WHR CPP”

with regard to the relevant requirements for CDM project activities. The verifiers have reviewed the implementation of the monitoring plan (MP) in the registered CDM project.

GHG data for the monitoring period was verified in detailed manner applying the set of requirements, audit practices and principles as required under the Validation and Verification Manual ^{/VVM/} of the UNFCCC.

This report summarizes the findings and conclusions of this 1st periodic verification of the above mentioned UNFCCC registered project activity.

1.1. Objective

The objective of the verification is the review and ex-post determination by an independent entity of the GHG emission reductions. It includes the verification of the:

- implementation and operation of the project activity as given in the PDD,
- compliance with applied approved methodology and the provisions of the monitoring plan,
- data given in the monitoring report by checking the monitoring records, the emissions reduction calculation and supporting evidence,
- accuracy of the monitoring equipment,
- quality of evidence,
- significance of reporting risks and risks of material misstatements.

1.2. Scope

The verification of this registered project is based on the validated project design document ^{/PDD/}, the monitoring report ^{/MR/}, emission reduction calculation spread sheet ^{/XLS/}, supporting documents made available to the verifier and information collected through performing interviews and during the on-site assessment. Furthermore publicly available information was considered as far as available and required.

The verification is carried out on the basis of the following requirements, applicable for this project activity:

- Article 12 of the Kyoto Protocol ^{/KP/},
- guidelines for the implementation of Article 12 of the Kyoto Protocol as presented in the Marrakech Accords under decision 3/CMP.1 ^{/MA/}, and subsequent decisions made by the Executive Board and COP/MOP,



- other relevant rules, including the host country legislation,
- CDM Validation and Verification Manual ^{/VVM/},
- monitoring plan as given in the registered PDD ^{/PDD/},
- Approved CDM Methodology.

2. GHG PROJECT DESCRIPTION

2.1. Technical Project Description

The key parameters for the project are given in table 2-1:

Table 2-1: Technical data of the plant

Waste Heat Recovery Boiler #1

Parameter	Unit	Value
Steam Generation Capacity	tph	38
Steam Temp.	°C	490±5
Steam Pressure	kg/cm ²	66

Waste Heat Recovery Boiler #2

Parameter	Unit	Value
Steam Generation Capacity	tph	38
Steam Temp.	°C	490±5
Steam Pressure	kg/cm ²	66

Coal based AFBC

Parameter	Unit	Value
Steam Generation Capacity	tph	54
Steam Temp.	°C	490±5
Steam Pressure	kg/cm ²	67

STG

Parameter	Unit	Value
Power Generation Capacity	MW	30
Inlet steam flow	tph	117
Steam Temp.	°C	485±5
Steam Pressure	kg/cm ²	63.7

2.2. Project Verification History

Essential events since the registration of the project are presented in the following Table 2-2.

Table 2-2: Project verification history

#	Item	Time	Status
1	Date of registration	2009-03-25	Registered
2	Start of crediting period	2009-03-25	-

#	Item	Time	Status
3	1 st Monitoring period	2009-03-25 to 2010-03-31	Ongoing

2.3. Involved Parties and Project Participants

The following parties to the Kyoto Protocol and project participants are involved in this project activity (Table 2-3).

Table 2-3: Project Parties and project participants

Characteristic	Party	Project Participant
Host party	India	SHYAM DRI Power Ltd.
Other involved party/ies	NA	NA

2.4. Project Location

The details of the project location are given in table 2-4:

Table 2-4: Project Location

No.	Project Location
Host Country	India
Region:	Orissa
Project location address:	Village: Pandloi & Nishanbanga P.O. Lapanga / Rengali, District – Sambalpur, State – Orissa, India
Latitude:	21 °40'50" N
Longitude:	84 °2'35" E

3. METHODOLOGY AND VERIFICATION SEQUENCE

3.1. Verification Steps

The verification consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the monitoring report
- A desk review of the Monitoring Report^{/MR/} submitted by the client and additional supporting documents with the use of customised verification protocol^{/CPM/} according to the Validation and Verification Manual^{/VVM/},
- Verification planning,
- On-Site assessment,
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,
- Draft verification reporting
- Resolution of corrective actions (if any)
- Final verification reporting
- Technical review
- Final approval of the verification.

The sequence of the verification is given in the table 3-1 below:

Table 3-1: Verification sequence

Topic	Time
Assignment of verification	2010-04-12
Uploading of Monitoring Report	2010-09-24
On-site visit	2011-01-28 – 2011-01-29
Draft reporting finalised	2011-03-18
Final reporting finalised	2012-04-17
Technical review finalised	2012-04-17

3.2. Contract review

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the verification can be provided,

- Impartiality issues are clear and in line with the CDM accreditation requirements

a contract review was carried out before the contract was signed.

3.3. Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a verification team, consisting of one team leader and 2 additional team members, was appointed.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table 3-2 below.

Table 3-2: Involved Personnel

	Name	Company	Function ¹⁾	Qualification Status ²⁾	Scheme competence ³⁾	Technical competence ⁴⁾	Verification competence ⁵⁾	Host country Competence	On-site visit
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Pankaj Mohan	TUV India Pvt. Ltd.	TL	SA	<input checked="" type="checkbox"/>	1.1 & 4.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ashwin A.S.	TUV India Pvt. Ltd.	TM ^{A)}	A	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Vineet Kumar	TUV India Pvt. Ltd.	TM ^{A)}	A	<input type="checkbox"/>	-	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Kiran Nayak	TUV India Pvt. Ltd.	OT ^{B)}	T	<input type="checkbox"/>	-	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Stefan Winter	TUV Nord Cert GmbH	TR ^{B)}	SA	<input checked="" type="checkbox"/>	1.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	-
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Rainer Winter	TUV Nord Cert GmbH	TR/FA ^{B)}	SA	<input checked="" type="checkbox"/>	1.1 & 4.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	-

¹⁾ TL: Team Leader; TM: Team Member, TR: Technical review; OT: Observer-Team, OR: Observer-TR; FA: Final approval

²⁾ GHG Auditor Status: A: Assessor; LA: Lead Assessor; SA: Senior Assessor; T: Trainee; TE: Technical Expert

³⁾ GHG auditor status (at least Assessor)

⁴⁾ As per S01-MU03 or S01-VA070-A2 (such as 1.1, 1.2,...)

⁵⁾ In case of verification projects

A) Team Member: GHG auditor (at least Assessor status), Technical Expert (incl. Host Country Expert or Verification Expert), not ETE

B) No team member

All team members contributed to the review of documents, the assessment of the project activity and to the preparation of this report under the leadership of the team leader.

Technical Experts contributed to the assessment of special aspects of the project activity, e.g. technical or host country aspects.

In order to qualify further personnel the project team was accompanied by Observers and/or Trainees as indicated in the table above. They are usually not considered as team members.

Statements of competence for the above mentioned team members are enclosed in annex 6 of this report.

3.4. Publication of the Monitoring Report

In accordance with the CDM M&P (§ 62) the draft monitoring report, as received from the project participants, has been made publicly available on the dedicated UNFCCC CDM website prior to the verification activity commenced. Comments received are taken into account in the course of the verification, if applicable.

3.5. Verification Planning

In order to ensure a complete, transparent and timely execution of the verification task the team leader has planned the complete sequence of events necessary to arrive at a substantiated final verification opinion.

Various tools have been established in order to ensure an effective verification planning.

Risk analysis and detailed audit testing planning

For the identification of potential reporting risks and the necessary detailed audit testing procedures for residual risk areas table A-1 is used. The structure and content of this table is given in table 3-2 below.

Table 3-3: Table A-1; Identification of verification risk areas

Table A-1: GHG calculation procedures and management control testing / Detailed audit testing of residual risk areas and random testing				
Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvement (including Forward Action Requests)

Table A-1: GHG calculation procedures and management control testing / Detailed audit testing of residual risk areas and random testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvement (including Forward Action Requests)
<i>The following potential risks were identified and divided and structured according to the possible areas of occurrence.</i>	<i>The potential risks of raw data generation have been identified in the course of the monitoring system implementation. The following measures were taken in order to minimize the corresponding risks. The following measures are implemented:</i>	<i>Despite the measures implemented in order to reduce the occurrence probability the following residual risks remain and have to be addressed in the course of every verification.</i>	<i>The additional verification testing performed is described. Testing may include:</i> <ul style="list-style-type: none"> - Sample cross checking of manual transfers of data - Recalculation - Spreadsheet 'walk throughs' to check links and equations - Inspection of calibration and maintenance records for key equipment - Check sampling analysis results <i>Discussions with process engineers who have detailed knowledge of process uncertainty/error bands.</i>	<i>Having investigated the residual risks, the conclusions should be noted here. Errors and uncertainties are highlighted.</i>

The completed table A-1 is enclosed in the annex 1 (table A-1) to this report.

Project specific periodic verification checklist

In order to ensure transparency and consideration of all relevant assessment criteria, a project specific verification protocol has been developed. The protocol shows, in a transparent manner, criteria and requirements, means and results of the verification. The verification protocol serves the following purposes:

- It organises, details and clarifies the requirements a CDM project is expected to meet for verification
- It ensures a transparent verification process where the verifying DOE documents how a particular requirement has been proved and the result of the verification.

The basic structure of this project specific verification protocol for the periodic verification is described in table 3-3.

Table 3-4: Structure of the project specific periodic verification checklist

Table A-2: Periodic verification checklist				
Checklist Item	Reference	Verification Team Comments	Draft Conclusion	Final Conclusion
<i>The checklist items in Table A-2 are linked to the various requirements the monitoring of the project should meet. The checklist is organised in various sections as per the requirements of the topic and the individual project activity. It further includes guidance for the verification team.</i>	<i>Gives reference to the information source on which the assessment is based on.</i>	<i>The section is used to elaborate and discuss the checklist item in detail. It includes the assessment of the verification team and how the assessment was carried out. The reporting requirements of the VVM shall be covered in this section.</i>	<i>Assessment based on evidence provided if the criterion is fulfilled (OK), or a CAR, CL or FAR (see below) is raised. The assessment refers to the draft verification stage.</i>	<i>In case of a corrective action or a clarification the final assessment at the final verification stage is given.</i>

The periodic verification checklist (verification protocol) is the backbone of the complete verification starting from the desk review until final assessment. Detailed assessments and findings are discussed within this checklist and not necessarily repeated in the main text of this report.

The completed verification protocol is enclosed in the annex (table A-2) to this report.

3.6. Desk review

During the desk review all documents initially provided by the client and publicly available documents relevant for the verification were reviewed. The main documents are listed below:

- the last revision of the PDD including the monitoring plan^{/PDD/},
- the last revision of the validation report^{/VAL/},
- documentation of previous verifications^{/VER/},
- the monitoring report, including the claimed emission reductions for the project^{/MR/},
- the emission reduction calculation spreadsheet^{/XLS/}.

Other supporting documents, such as publicly available information on the UNFCCC website and background information were also reviewed.

3.7. On-site assessment

As most essential part of the verification exercise it is indispensable to carry out an inspection on site in order to verify that the project is implemented in accordance with

the applicable criteria. Furthermore the on-site assessment is necessary to check the monitoring data with respect to accuracy to ensure the calculation of emission reductions. The main tasks covered during the site visit include, but are not limited to:

- The on-site assessment included an investigation of whether all relevant equipment is installed and works as anticipated.
- The operating staff was interviewed and observed in order to check the risks of inappropriate operation and data collection procedures.
- Information processes for generating, aggregating and reporting the selected monitored parameters were reviewed.
- The duly calibration of all metering equipment was checked.
- The monitoring processes, routines and documentations were audited to check their proper application.
- The monitoring data were checked completely.
- The data aggregation trails were checked via spot sample down to the level of the meter recordings.

Before and during the on-site visit the verification team performed interviews with the project participants to confirm selected information and to resolve issues identified in the document review.

Representatives of SHYAM DRI Power Ltd. and Indus Technical and Financial Consultants Ltd. (project consultant) including the operational staff of the plant were interviewed. The main topics of the interviews are summarised in Table 3-4.

Table 3-5: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
1. Projects & Operations Personnel, SHYAM DRI Power Ltd. ^{/IM01/} 2. Consultant, Indus Technical and Financial Consultants Ltd. ^{/IM02/}	<ul style="list-style-type: none"> - General aspects of the project - Technical equipment and operation - Changes since validation - Monitoring and measurement equipment - Remaining issues from validation - Calibration procedures - Quality management system - Involved personnel and responsibilities - Training and practice of the operational personnel - Implementation of the monitoring plan - Monitoring data management - Data uncertainty and residual risks - GHG emission reduction calculation - Procedural aspects of the verification - Maintenance - Environmental aspects

3.8. Draft verification reporting

On the basis of the desk review, the on-site visit, follow-up interviews and further background investigation the verification protocol is completed. This protocol together with a general project and procedural description of the verification and a detailed list of the verification findings from the draft verification report. This report is sent to the client for resolution of raised CARs, CLs and FARs.

3.9. Resolution of CARs, CLs and FARs

Nonconformities raised during the verification can either be seen as a non-fulfilment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

Corrective Action Requests (CARs) are issued, if:

- 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 or previous verifications requiring actions by the project participants to be verified during verification have not been resolved.

The verification team uses the term Clarification Request (CL), which is issued if:

- information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

Forward Action Requests (FAR) indicate essential risks for further periodic verifications. Forward Action Requests are issued, if:

- the monitoring and reporting require attention and / or adjustment for the next verification period.

For a detailed list of all CARs, CLs and FARs raised in the course of the verification pl. refer to chapter 4.

3.10. Final reporting

Upon successful closure of all raised CARs and CLs the final verification report including a positive verification opinion can be issued. In case not all essential issues could finally be resolved, a final report including a negative verification opinion is issued.

The final report summarizes the final assessments w.r.t. all applicable criteria.

3.11. Technical review

Before submission of the final verification report a technical review of the whole verification procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the verification opinion and the topic specific assessments as prepared by the verification team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

3.12. Final approval

After successful technical review an overall (esp. procedural) assessment of the complete verification will be carried out by a senior assessor located in the accredited premises of TÜV NORD.

After this step the request for issuance can be started.

4. VERIFICATION FINDINGS

In the following paragraphs the findings from the desk review of the monitoring report^{/MR1//MR/}, the calculation spreadsheet^{/XLS/}, PDD^{/PDD/}, the Validation Report^{/VAL/} and other supporting documents, as well as from the on-site assessment and the interviews are summarised.

The summary of CAR, CL and FAR issued are shown in Table 4-1:

Table 4-1: Summary of CAR, CL and FAR

Verification topic	No. of CAR	No. of CL	No. of FAR
A – General description of the project activity	2	0	0
B – Implementation of the project activity		2	1
C – Description of the monitoring system	1	1	0
D – Data and parameters monitored	2	5	0
E - Emission Reductions Calculation	2	0	0
SUM	7	8	1

The following tables include all raised CARs, CLs and FARs and the assessments of the same by the verification team. For an in depth evaluation of all verification items it should be referred to the verification protocols (see Annex).

Finding:	A1		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR

Finding:	A1
Description of finding	<p>With the reference to the MR, the following consolidated CAR has been raised on editorial issues:</p> <ol style="list-style-type: none"> 1. All the abbreviations have to be clearly expanded on first use of instance in the MR. 2. The MR still has references to the Project activity as 'proposed'. Since the PA is implemented & registered, Please justify. 3. Please provide table and figure numbers in the MR. 4. The specification column for STG in page no. 2 of the MR version 1 has date in it and not the specification. Correction required. 5. A clear and transparent description of all the critical information's i.e. calibration details, implementation status, QA/QC in the monitoring etc. should be added in the monitoring report.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<ol style="list-style-type: none"> 1. All the abbreviation have been expanded, on the first instance of use, in the revised MR. 2. Although the project activity is implemented but the meaning of the word "proposed" here is for sake of referring to the project activity for which request for issuance has been requested. This does not refer to the time tense as a Future activity rather the term used here is for the submitted documents or submitted project. Hence the sense of the proposed word may kindly be accepted in this sense only and not as a Future time sense. In rest of the document this is removed. 3. Table and figure numbers are provided in the revised MR. 4. The specification column for STG in page no. 2 has been revised in the revised MR. 5. Clear and transparent description of all the critical information's i.e. calibration details, implementation status, QA/QC in the monitoring is provided in revised monitoring report.
DOE Assessment #1	<ol style="list-style-type: none"> 1. All the abbreviations have been expanded, on the first instance of use, in the revised MR. The same was checked in the revised MR and found appropriate. CAR point is closed. 2. The justification provided by the PP for the usage of the term "proposed" is acceptable. Also revised MR checked and found to be satisfactory. CAR point is closed. 3. Table and figure numbers are provided in the revised MR, as checked by the verification team. CAR point is closed. 4. The specification column for the STG in section A.1 on page 2 has been corrected in the revised MR, hence accepted by the verification team. CAR point is closed. 5. All the requisite critical information is provided in the revised MR. The calibration details, implementation status, QA/QC procedures were found to be in line with the verified documents and interviews conducted on site. Hence accepted by the verification team and the CAR point closed. <p>Hence, CAR A1 is closed.</p>

Finding:	A1
Conclusion	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	A2
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding	During the project site visit it was observed that the name of the PP has been changed from "SHYAM DRI" to "Shyam Metalics and Energy Limited (SMEL)" w.e.f. 05/01/2010. However this is not mentioned in the MR. Relevant evidence from the authority regarding the name change also has to be submitted to the DOE.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The copy of the Certificate for Change in the name of the company issued by Registrar of Companies is enclosed as evidence which proves that only the name of company has been amended which is allowed in rules and regulation of the Host Country.
DOE Assessment #1	<p>The verification team confirms the same after verifying the "Certificate for Change in Name" issued by the "Government of India - Ministry of Corporate Affairs, Registrar of companies, West Bengal" submitted by the PP. But as the project was registered on the name of 'Shyam DRI Power Ltd.', the same is being kept in the revised MR as well now.</p> <p>Hence the CAR A2 is now closed.</p>
Conclusion	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	B1
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding	<p>The PP is required to submit the below listed documents</p> <ol style="list-style-type: none"> Organizational hierarchy/chart Commissioning certificate Auxiliary consumption data Technical specifications Gross Electricity generation data Breakdown / Shutdown records
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Documentary evidence has been forwarded to the DOE for reference



Finding:	B1
DOE Assessment #1	The PP has submitted the requisite documents. All the documents have been verified with the originals during the site visit and also obtained the scanned copies of the same. Hence the CL B1 is now closed.
Conclusion	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	B2
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding	During the project site visit it was observed that DG sets have been added to act as a back up during exigencies. The PDD or the MR does not have the information regarding the DG sets. Please clarify how the electricity generated if any is monitored from this and if the same is deducted from the gross generation.



Finding:	B2
<p>Corrective Action #1</p> <p><i>This section shall be filled b the PP. It shall address the corrective action taken in details</i></p>	<p>The DG sets installed at the site are basically installed for the purpose of providing emergency power mainly to the sponge iron plants and steel plants and partially for emergency backup to the cooling circuit of boiler of power plant. It may be noted that the emergency power requirement will be arising in the power plant only when none of the source of power are available to the unit i.e. neither coal based power nor power from WHRB nor the power from the grid is available, which is a rare event. It is also an established fact that WHRB power plant has to be run so long as the sponge iron plant is in operation and AFBC power plant can be operated according to the requirement of the power. Since the Project Activity will be in synchronization to the grid thus such emergency situation are very rare.</p> <p>Thus it is not likely to have any emergency power requirement due to these reasons. Over and above this the Orissa State is not having shortage of power and the unit is connected with the grid with EST power supply circuit for import and export of power, therefore, in case of shutdown of both these power sources grid will act as backup power.</p> <p>It is a very remote possibility that when an operating power plant generation has failed and even the grid support is not available during this period only the Emergency auxiliary system for cooling down the boiler tubes will require power. The emergency power requirement in the power plant will not be more than 10% of the connected load for the entire auxiliary system of CPP. In view of this in a worse cum worse situation the annual power generation for backup power support during any year may not even be point 1 % of the entire power generation.</p> <p>The available data for the emergency backup power generation and utilization during the current monitoring period reveals that it is about 0.0183% of total generation and if compared with Auxiliary power consumed for CPP it comes to 0.1758%. Hence this may be ignored as per guideline.</p> <p>The available data for the emergency backup power generation and utilization during the current monitoring period reveals that it is insignificant quantity as compared of total generation. Hence this may be ignored as per guideline. Therefore there is no deviation in the Monitoring Plan.</p>



Finding:	B2
DOE Assessment #1	<p>During the site visit it was observed by the verification team that the DG set is not used regularly but the fact is that it will only be used during the complete blackout i.e. when the PP is not having the power from WHRB, AFBC and back up grid. This is the rarest thing which can happen in the industry so the DG set was not included in the monitoring plan by the PP. The verification team checked the LOG books and found that there is hardly any generation from the DG. Also the generated power can only be used in the Auxiliary consumption which is already deducted from the gross generation, hence this is found to be conservative and no Deviation from registered monitoring plan was envisaged.</p> <p>Also as per VVM §77 the project emission from the DG set is less than 1% so this was not included in the monitoring plan by the validated DOE as checked during onsite assessment interview of PP by the verification team.</p> <p>As the Auxiliary consumption is monitored and deducted from the gross generation as checked by the verification team from the logbooks and also checked the single line diagram ^{/SLD/}. The physical verification of the site carried out by verification team also proves that the PP has adopted the conservative approach and this is already monitored through auxiliary consumption.</p> <p>The justification provided by the PP with regards to the use of the DG set as an emergency backup is acceptable as per above justification of DOE. Furthermore, it was verified by the verification team that the energy generated through the DG is minimal. Also, the conservative approach utilized by the PP has been verified. Hence the CL B2 is closed.</p>
Conclusion	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input checked="" type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> Project documentation was corrected correspondingly</p> <p><input type="checkbox"/> Additional action should be taken</p> <p><input checked="" type="checkbox"/> The project complies with the requirements</p>

Finding:	B3
Classification	<input type="checkbox"/> CAR <input type="checkbox"/> CL <input checked="" type="checkbox"/> FAR
Description of finding	FAR B3 is raised for the DG set. If the Emission because of DG set increases by 1% of annual average emission reductions then the Revision in monitoring plan will be done in that monitoring period.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Revision in monitoring plan will be taken in that monitoring period in which the emission because of emergency DG set will increase by 1% of annual emission reductions.
DOE Assessment #1	This will be checked during next verifications as well



Conclusion	<input checked="" type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Appropriate action was taken <input type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements
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Finding:	C1		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding	Evidences to the internal audit were not furnished. Furthermore, the PP is requested to submit standard operating procedures (SOP) for internal QA/QC for project activity monitoring parameters, along with internal audit report.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Internal Audit report and the requested SOP for QA/QC have been submitted to the DOE.		
DOE Assessment #1	The PP has submitted the requisite documents. The Internal Audit report and the SOP have been verified by the verification team and found to be satisfactory. Hence the CL C1 is now closed.		
Conclusion	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements		

Finding:	C2		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding	Roles and responsibility chart is missing. The PP also needs to provide the reporting procedure along with the daily and monthly reports.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Roles and Responsibilities chart has been provided along with reporting procedure for daily and monthly report in revised MR.		
DOE Assessment #1	The verification team confirms that the roles and responsibilities as well as the reporting procedure mentioned in the revised MR are in line with that observed during the site visit. The same can also be authenticated by the onsite interviews conducted by the verification team. Hence, the CAR C2 is now closed.		

Finding:	C2
Conclusion	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	D1
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding	During the onsite review of the log sheets it was observed that the entry for 31/03/2009 for auxiliary is missing. Justification required on how the required parameters were monitored on this date.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The monitoring for auxiliary consumption is being done on a regular basis by the calibrated metering instruments. However, on the very day of the audit, some records were in the Head office and were not available on site. Hence the same could not be provided to the verification team.</p> <p>Pl. find enclosed the records (log sheets) for auxiliary power consumptions.</p>
DOE Assessment #1	The verification team has verified the log sheet records provided by the PP. Furthermore, the monitoring process was checked during the site visit and during the interviews conducted on site. The calibrations of the metering equipments were also checked and found to be satisfactory. The CAR D1 is now closed.
Conclusion	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	D2
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding	During site visit it was observed that the energy being recorded in the auxiliary consumption log sheets is in 'MWh'. However, the daily internal reports being generated have the unit for the same as MW/h. The registered PDD mentions the unit as 'MWh'. Clarification is required on the correctness of the unit being used.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The values being recorded are in MWh. However, the unit was mentioned as "MW/h" by mistake. Furthermore, it was clarified during the site visit that the parameter recorded by the meter is in MWh only.</p> <p>However in future the term MWh shall be used.</p>

Finding:	D2
DOE Assessment #1	The justification provided by the PP with regards to the units being used to record the reading of the energy parameter in the auxiliary consumption log sheets is acceptable to the verification team. The same has been verified by the team during the site visit and by the onsite interviews conducted by the verification team. Hence CL D2 is now closed.
Conclusion	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	D3
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding	The PP needs to provide the calibration data related to steam Flow at outlet of WHRB-1, WHRB-2, AFBC and TG input i.e. F1, F2, F3 and F4 respectively.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Calibration data related to steam flow at outlet of WHRB-1, WHRB-2 and AFBC and TG input i.e. F1, F2 F3 and F4 are provided in revised MR.
DOE Assessment #1	The verification team has verified the revised MR for the inclusion of the calibration data relevant to the Steam flow. Furthermore, this data was checked during the site visit, cross checked with the calibration certificates and found to be accurate. Hence, CL D3 is now closed.
Conclusion	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	D4
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding	It is observed that the steam temperature and pressure meters / gauges are internally calibrated which is inconsistent with the registered PDD. Clarify why §3 of Annex 60 EB 52 is not applied throughout the monitoring period for the recorded data of above mentioned parameters.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The Para-3 of EB-52 Annex-60 does not specify any specific agency for calibrating the meters. The steam temperature and pressure measuring instruments are calibrated through third party laboratory; the copies of all the calibration certificates are enclosed herewith.



Finding:	D4
DOE Assessment #1	It is verified from the calibration certificates that the calibration is in accordance with the requirements of the registered PDD. The same has been mentioned in the revised MR as well. Hence, CAR D4 is closed.
Conclusion	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	D5
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding	The PP needs to provide the calibration data related to steam temperatures at outlet of WHRB-1, WHRB-2 and AFBC i.e. T1, T2 and T3 respectively.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Calibration data related to steam temperatures at outlet of WHRB-1, WHRB-2 and AFBC i.e. T1, T2 and T3 are provided in revised MR.
DOE Assessment #1	The verification team has verified the revised MR for the inclusion of the calibration data relevant to the Steam temperature. Furthermore, this data was checked during the site visit, cross checked with the calibration certificates and found to be accurate. Hence, CL D5 is now closed.
Conclusion	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	D6
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding	The PP needs to provide the calibration data related to steam pressure at WHRB-1, WHRB-2 and AFBC i.e. P1, P2 and P3 respectively.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Calibration data related to steam pressure at WHRB-1, WHRB-2 and AFBC i.e. P1, P2 and P3 are provided in revised MR
DOE Assessment #1	The verification team has verified the revised MR for the inclusion of the calibration data relevant to the Steam Pressure. Furthermore, this data was checked during the site visit, cross checked with the calibration certificates and found to be accurate. Hence, CL D6 is now closed.



Finding:	D6
Conclusion	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	D7
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding	The PP needs to provide the data related to Electricity Import and Export which is done during the first monitoring period.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The MR has been revised to include the data related to Electricity Import and Export during the monitoring period.
DOE Assessment #1	<p>The verification team has cross checked the revised MR for inclusion of data related to the said parameters i.e. Electricity Import and Export. The same was verified during the site visit.</p> <p>Hence CL D7 is now closed.</p>
Conclusion	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	E1
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding	The PP has not submitted a traceable ER spreadsheet.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	ER calculation spread sheet is provided with all the relevant parameters mentioned.
DOE Assessment #1	<p>The PP has submitted a traceable and appropriately linked ER calculation spreadsheet. The same mention all the parameters involved and is consistent with the MR and the registered PDD. Furthermore, the applied formulae for the calculations are in line with the applied methodology. The calculations are complete and in accordance with the monitoring plan of the registered PDD. The same has been verified by the verification team with the log book records and the meter readings and found to be accurate. The CAR E1 is therefore closed.</p>



Finding:	E1
Conclusion	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Finding:	E2
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding	Comparison between the estimated and actual emission reduction has not been done in the Monitoring Report.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Comparison between estimated and actual emission reduction is provided in revised monitoring report.
DOE Assessment #1	The MR has been revised to include a comparison between the estimated and actual emission reduction achieved during the current monitoring period in Section E.5. The values have been cross checked with the ER spreadsheet and the registered PDD and found to be accurate. Hence, the CAR E2 is closed.
Conclusion	<input type="checkbox"/> To be checked during the next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

5. SUMMARY OF VERIFICATION ASSESSMENTS

The following paragraphs include the summary of the final verification assessments after all CARs and CLs are closed out. For details of the assessments pl. refer to the discussion of the verification findings in chapter 4 and the verification protocol (Annex 1).

5.1. Implementation of the project

During the verification a site visit was carried out. On the basis of this site visit, physical verification and the reviewed project documentation it can be confirmed that w.r.t. the realized technology, the project equipments, as well as the monitoring and metering equipment, the CPP of the project activity has been implemented and operated as described in the registered PDD.

5.2. Project history

During the course of the validation no FAR was raised for the project activity. Furthermore, there have been no requests for deviation or revision in monitoring plan for the same.

The project activity entails the use of waste heat contained in waste flue gases released from ABCs of 2 DRI kilns to generate electricity. The heat contained in waste gases will be transferred to water, which in turn will convert water into steam in 2 WHRBs generating steam to generate power. The steam produced will be fed into an STG to generate a total of 15 MW electricity. The power so generated shall mainly be used to meet the captive power requirement of the SHYAM DRI Plant itself.

The monitoring plan as described in Section B.7.1, B.7.2. and Annex 4 of the registered PDD is being followed.

Furthermore as this is the 1st periodic verification no issues from former verifications are to be considered.

5.3. Special events

No special events with effect on the monitoring of the project / applicability of the methodology have been observed during the monitoring period. Also, no exchange or replacement of major equipments has been witnessed during the monitoring period.

However operational shut downs were observed for the equipment involved in the project activity and the same has been mentioned in section B.1. of the MR^{MR1/}.

5.4. Compliance with the monitoring plan

The monitoring system and all applied procedures are completely in compliance with the registered monitoring plan. All the parameters to be monitored are mentioned in the MR^{MR1/} and are in accordance with the registered PDD as well as the applied methodology ACM0004 Version 2. Furthermore, during the site visit, DG sets were observed to be installed in case of exigencies. The total diesel consumption for the entire monitoring period is 19,393 litres leading to a total power generation of 31.89 MWh. The same has been verified from the DG set logbooks on site. As it was verified that the DG sets are not used regularly and do not contribute to more than 1% of the project emissions (0.04%), a deviation or revision in MP for the inclusion of the DG sets has not been sought for the project activity. A CAR B2 has been raised and closed successfully. FAR B3 is also raised for the same and this will also be checked during next verifications as well.

The parameters are monitored as specified in Section D of the MR. The same will be checked during subsequent verifications. QA/QC procedures are also adequately mentioned in the MR. All the monitored data will be archived for a period of 2 years after the crediting period.

5.5. Compliance with the monitoring methodology

The monitoring system is in compliance with the applied monitoring methodology, ACM0004 Version 2 as well as the Clarification F-CDM-AM-Clar_Resp_ver 01.1 - AM_CLA_0067. All applicable monitoring parameters are mentioned in the monitoring plan of the MR^{MR1/}. Furthermore, during the site visit and the interviews conducted it was verified by the verification team that the monitoring system is in compliance with the applied methodology.

5.6. Monitoring parameters

During the verification all relevant monitoring parameters mentioned in the MR^{MR1/} (as also listed in chapter B.7.1, B.7.2 and Annex 4 of the registered PDD) have been verified with regard to the appropriateness of the applied measurement / determination method, the correctness of the values applied for ER calculation, the accuracy and applied QA/QC measures.

It can be confirmed that all monitoring parameters have been measured / determined without material misstatements and in line with all applicable standards and relevant requirements. Please refer Section D. Of Annex 1 for the details of the parameters monitored.

5.7. Monitoring report

A draft monitoring report was submitted to the verification team by the project participants. The same is in accordance with EB 54 Annex 34 "Guideline for completing the monitoring report form". This report was made publicly available on

the UNFCCC website prior to the start of the verification activities. No comments were received on the same.

During the verification, mistakes and needs for clarification were identified. A CAR A1 has been raised for the editorial aspects of the MR and the same has been closed successfully. The PP has carried out the requested corrections so that it can be confirmed that the revised Monitoring report^{MR1/} is complete and transparent and in accordance with the registered PDD and other relevant requirements.

5.8. ER Calculation

During the verification mistakes in the ER calculations were identified and corresponding CARs were raised. Please refer Section E of Annex 1 for details of the same. A revised ER calculation was prepared by the PP and presented to the verification team. The raised CAR E1 was successfully closed. The MR^{MR1/} was revised accordingly to incorporate the requisite changes. The CERs have been reduced from the proposed 96,507 tCO₂ to 96,339 tCO₂.

5.9. Quality Management

Quality Management procedures for measurements, collection and compilation of data, data storage and archiving, calibration, maintenance and training of personnel in the framework of this CDM project activity have been defined. The procedures defined can be assessed as appropriate for the purpose.

It is evident from the monitoring data that the monitoring systems ensure for continuous operations with the exceptions of a few breakdowns. All the measured data are subjected to QA/QC measures.

The PP has provided the CDM Manual and has proper procedures for data handling, accuracy and protections in place. The same have been verified by the verification team. No significant deviations thereof have been observed during the verification.

All monitored data are archived both electronically and on paper. The same will be archived for the entire crediting period and additional 2 years as specified in the MR as well as the registered PDD.

5.10. Comparison with ex-ante estimated emission reductions

The revised MR^{MR1/} includes a comparison of the calculated actual emission reductions with the ex-ante values mentioned in the registered PDD.

As per registered PDD, for a monitoring period of 372 days the estimated emission reductions are 100,230.617¹ tCO₂. However, the actual value reached during monitoring period is 96,339 tCO₂. Thus the effective emission reduction is less than the estimated in the registered PDD.

¹ Calculated based on 350 working days considered as per reg PDD page 22: $94,303/350 \times 372 = 100,230.617$

5.11. Overall Aspects of the Verification

All necessary and requested documentation was provided by the project participants so that a complete verification of all relevant issues could be carried out.

Access was granted to all installations of the plant which are relevant for the project performance and the monitoring activities.

No issues have been identified indicating that the implementation of the project activity and the steps to claim emission reductions are not compliant with the UNFCCC criteria and relevant guidance provided by the COP/CMP and the CDM EB (clarifications and / or guidance).

5.12. Hints for next periodic Verification

FAR B3 has been raised during the course of the 1st periodic verification due to observation of diesel consumption of emergency gensets.



6. VERIFICATION OPINION

SHYAM DRI Power Ltd. has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 1st periodic verification of the project: “SHYAM DRI WHR CPP”, with regard to the relevant requirements for CDM project activities. The project reduces GHG emissions due to generation of electricity from waste heat contained in waste flue gases released from After Burning Chambers (ABCs) of DRI Kilns. This verification covers the period from 2009-03-25 to 2010-03-31 (including both days).

In the course of the verification 7 Corrective Action Requests (CAR) and 8 Clarification Requests (CL) were raised and successfully closed. Furthermore 1 FAR is raised to improve the monitoring system in the future. The verification is based on the draft monitoring report, revised monitoring report, the monitoring plan as set out in the registered PDD, the validation report, emission reduction calculation spreadsheet and supporting documents made available to the TÜV NORD JI/CDM CP by the project participant.

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated project design document.
- the monitoring plan is in accordance with the applied approved CDM methodology.
- the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- the monitoring system is in place and functional. The project has generated GHG emission reductions.

As the result of the 1st periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. TÜV NORD JI/CDM CP herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as follows:

Emission reductions: **96,339** t CO_{2e}

New Delhi, 2012-04-17

Essen, 2012-04-17

A handwritten signature in blue ink, appearing to read 'Pankaj Mohan'.

A handwritten signature in black ink, appearing to read 'Rainer Winter'.

Pankaj Mohan

Rainer Winter

TÜV NORD JI/CDM Certification
Program

TÜV NORD JI/CDM Certification
Program

Verification Team Leader

Final Approval

7. REFERENCES

Table 7-1: Documents provided by the project participant(s)

Reference	Document
/BR/	Breakdown/shutdown/outages records for the 1 st monitoring period (from 2009-03-25 to 2010-03-31 (first and last days included)).
/CAL/	<p>Calibration reports of all meters used in the monitoring procedure;</p> <ol style="list-style-type: none"> 1. Generation Meter (TG) – Serial No. 06607878 – dated 26/12/2008 and 26/03/2010, valid up to 25/03/2011 2. Auxiliary Meter (Aux1) – Serial No. 98001/2-2406 – dated 14/12/2008 and 25/11/2009, valid up to 24/11/2010 3. Auxiliary Meter (Aux2) – Serial No. 98001/3-2406 – dated 14/12/2008 and 25/11/2009, valid up to 24/11/2010 4. Temp Transmitter WHRB 1 – Serial No. 231360 – dated 07/01/2009 and 27/12/2009, valid up to 26/12/2010 5. Temp Transmitter WHRB 2 – Serial No. 231361 – dated 07/01/2009 and 27/12/2009, valid up to 26/12/2010 6. Temp Transmitter AFBC – Serial No. 00250462 – dated 06/01/2009 and 27/12/2009, valid up to 26/12/2010 7. Pressure Transmitter WHRB 1 – Serial No. 231388 – dated 09/01/2009 and 28/12/2009, valid up to 27/12/2010 8. Pressure Transmitter WHRB 2 – Serial No. 231391 – dated 09/01/2009 and 28/12/2009, valid up to 27/12/2010 9. Pressure Transmitter AFBC – Serial No. 0250454 – dated 10/01/2009 and 28/12/2009, valid up to 27/12/2010 10. Flow Transmitter WHRB 1 – Serial No. 231407 – dated 08/01/2009 and 29/12/2009, valid up to 28/12/2010 11. Flow Transmitter WHRB 2 – Serial No. 231408 – dated 08/01/2009 and 29/12/2009, valid up to 28/12/2010 12. Flow Transmitter AFBC – Serial No. 0250457 – dated 09/01/2009

Reference	Document
	<p>and 29/12/2009, valid up to 28/12/2010</p> <p>13. Flow Transmitter TG – Serial No. 0292898 – dated 07/01/2009 and 29/12/2009, valid up to 28/12/2010</p> <p>The calibrations cover the monitoring period from 2009-03-25 to 2010-03-31.</p>
/CC/	<p>Commissioning certificates of WHR Boilers and Turbine generator dated 2011-07-27.</p> <ol style="list-style-type: none"> 1. Commissioning date of WHRB 1 – 2007-06-02 2. Commissioning date of WHRB 2 – 2007-06-20 3. Commissioning certificate of AFBC – 2007-05-01 4. Commissioning certificate of STG – 2007-05-01
/CM/	CDM Manual
/CON/	The signed contract between TÜV NORD Cert GmbH and Project Proponent (SHYAM DRI Power Ltd) for carrying out verification of the 1 st monitoring period (from 2009-03-25 to 2010-03-31) dated 2010-04-12.
/DCS/	Screen shots of the DCS display of the plant.
/JMR/	JMR readings to calculate net energy from/to grid for the monitoring period from 2009-03-25 to 2010-03-31.
/LOG/	Daily and Monthly report containing the performance parameters of the power plant and record of any history with details, maintained at site with a copy being sent to the nit head of the SHYAM DRI Power Ltd. The data for the monitoring period from 2009-03-25 to 2010-03-31.
/LOG_DG/	Logbook records for the DG sets for the monitoring period i.e. 2009-03-25 to 2010-03-31.
/MR/	Draft Monitoring Report of the registered project “SHYAM DRI WHR CPP” for the period from 2009-03-25 to 2010-03-31, which is webhosted as input for verification process.
/MR1/	Final Monitoring Report of the registered project “SHYAM DRI WHR CPP” for the period from 2009-03-25 to 2010-03-31 dated: 2012-02-14, which formed the basis for verification opinion.
/O&M/	O&M Procedure, preventive maintenance schedule and record
/QP/	QMS procedure for data management and storage.

Reference	Document
/SC/	<ol style="list-style-type: none"> 1. Boiler inspection certificate for all the boilers included in the project activity. 2. STG inspection certificate for all the STGs included in the project activity.
/SLD/	Single Line Diagram
/TD/	<ol style="list-style-type: none"> 1. Technical specification of boilers 2. Technical specifications of steam turbogenerators 3. DG Set Specifications
/TRG/	Training records of various training programmes organized on operation & maintenance of equipments and calibration procedure for measurement meters for the verification period 2009-03-25 to 2010-03-31.
/XLS/	Excel – ER calculation spreadsheets provided by the project participant (related to draft monitoring report).
/XLS1/	Excel – ER calculation spreadsheets provided by the project participant (related to Final monitoring report).

Table 7-2: Background investigation and assessment documents

Reference	Document
/ACM4/	Approved CDM Methodology “Consolidated baseline methodology for waste gas and/or heat and/or pressure for power generation, ACM0004/ Version 02, Sectoral scope: 01, 3rd March 2006.
/CLA/	Clarification (F-CDM-AM-Clar_Resp_ver 01.1 - AM_CLA_0067) on meth panel meeting dated 2008-04-07 to 2008-04-11.
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/IPCC/	<ol style="list-style-type: none"> 1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book 2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book
/KP/	Kyoto Protocol (1997)
/MA/	Decision 3/CMP. 1 (Marrakesh – Accords)

Reference	Document
/PDD/	Project Design Document for CDM project titled “SHYAM DRI WHR CPP” version 03, dated 2008-04-09
/VAL/	Validation Report for CDM project “SHYAM DRI WHR CPP” Report No. INDIA-VAL/127.49/2008, dated 2009-02-07 by BUREAU VERITAS CERTIFICATION
/VVM/	UNFCCC Validation and Verification Manual (Version 01.2, EB 55 Annex 1)

Table 7-3: Websites used

Reference	Link	Organisation
/cea/	http://www.cea.nic.in/	Central Electricity Authority
/dna/	http://cdmindia.nic.in/	Indian DNA (National CDM Authority, MoEF, India)
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications
/moef/	http://moef.nic.in/	Ministry of Environment and Forest, Government of India
/mos/	http://steel.nic.in/	Ministry of steel, Government of India
/nesco/	http://www.nescoorissa.com/	North Eastern Electricity Supply Company of Orissa Limited
/oerc/	www.orierc.org	Orissa Electricity Regulatory Commission
/ospcb/	http://www.ospcboard.org/	Orissa State Pollution Control Board
/sdri/	http://www.shyamgroup.com/shyam_dri.html	SHYAM DRI Power Ltd.
/unfccc/	http://cdm.unfccc.int	UNFCCC

Table 7-4: List of interviewed persons

Reference	Mol ¹		Name	Organisation / Function
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Reference	Mol ¹		Name	Organisation / Function
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	D.K. Tiwari Director	SHYAM DRI Power Ltd.
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	L.B. Chaurasia	Sr. GM Corporate planning, SHYAM DRI Power Ltd.
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	U.K. Mishra	Deputy G.M.(Operation and Maintenance), SHYAM DRI Power Ltd.
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	R.K. Srivastava	Manager, SHYAM DRI Power Ltd.
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	J.B. Sethi	Asst. Engineer, SHYAM DRI Power Ltd.
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Ritesh Dube	Jr. Engineer, SHYAM DRI Power Ltd.
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Chinmay Parieh	Jr. Engineer, SHYAM DRI Power Ltd.
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Neeraj Kumar Sharma	Asst. Engineer (E&I), SHYAM DRI Power Ltd.
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	S.U. Mohanty	Sr. Manager (E&I), SHYAM DRI Power Ltd.
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	D.B. Jha	Manager (Electrical), SHYAM DRI Power Ltd.
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Lambodar Bej	Engineer (E&I), SHYAM DRI Power Ltd.
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	D.N. Mishra	Coordinator, SHYAM DRI Power Ltd.
/IM02/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Lalit Kumar Singhania	Chief Consultant, ITFC Ltd.
/IM02/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Gopal Bordia	Vice President, ITFC Ltd.
/IM02/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Vikas Thakur	Admin. Officer, ITFC Ltd.



Reference	Mol ¹		Name	Organisation / Function
/IM02/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ghanshyam Singh	ITFC Ltd.

¹⁾ Means of Interview: (Telephone, E-Mail, Visit)

ANNEX

- A1:** Verification Protocol
- A2:** Appointment / Authorisation statements

ANNEX 1: VERIFICATION PROTOCOL

Table A-1: GHG calculation procedures and management control testing / detailed audit testing of residual risk areas and random testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
Raw data generation				
<ul style="list-style-type: none"> • Installation of measuring equipment • Dysfunction of installed equipment • Maloperation by operational personnel • Downtimes of equipment • Exchange of equipment • Change of measurement equipment characteristic • Insufficient accuracy • Change of 	<ul style="list-style-type: none"> • Installation of modern and state of the art equipment • Process control automation • Internal data review • Regular visual inspections of installed equipment • Only skilled and trained personnel operates the relevant equipment • Daily raw data checks • Immediate exchange of dysfunctional equipment 	<ul style="list-style-type: none"> • Inadequate installation / operation of the monitoring equipment • Inadequate exchange of equipment • Change of personnel • Undetected measurement errors • Inappropriateness of Management system procedures w.r.t. monitoring plan requirements (e.g. substitute value strategies) • Non-application of management system procedures 	<ul style="list-style-type: none"> • Site – visit • Check of equipment • Check of technical data sheets • Check of suppliers information / guarantees • Check of calibration records, if applicable • Check of maintenance records • Counter-check of raw data and commercial data • Check of CDM management system • Check of CDM related 	<ul style="list-style-type: none"> • See Table A-2

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
<ul style="list-style-type: none"> technology Accuracy of values supplied by Third Parties 	<ul style="list-style-type: none"> Stand-by duty is organized Training Internal audit procedures Internal check of QA/QC measures of involved Third Parties 	<ul style="list-style-type: none"> Insufficient accuracy Inappropriate QA/QC measures of Third Parties 	<ul style="list-style-type: none"> procedures Application of CDM management system procedures Check of trainings Check of responsibilities Check of QA/QC documentation / evidences of involved Third Parties 	
Raw data collection and data aggregation				
<ul style="list-style-type: none"> Wrong data transfer from raw data to daily and monthly aggregated reporting forms IT Systems Spread sheet programming Manual data transmission Data protection 	<ul style="list-style-type: none"> Cross-check of data Plausibility checks of various parameters. Appropriate archiving system Clear allocation of responsibilities Application of CDM Management system procedures 	<ul style="list-style-type: none"> Unintended usage of old data that has been revised Incomplete documentation Ex-post corrections of records Ambiguous sources of information Non-application of management system procedures 	<ul style="list-style-type: none"> Check of data aggregation steps Counter-calculation Data integrity checks by means of graphical data analysis and calculation of specific performance figures Check of management system certification Check of data archiving 	<ul style="list-style-type: none"> See Table A-2

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
<ul style="list-style-type: none"> Responsibilities 	<ul style="list-style-type: none"> Usage of standard software solutions (Spreadsheets) Limited access to IT systems Data protection procedures 	<ul style="list-style-type: none"> Manual data transfer mistakes Unintended change of spread sheet programming or data base entries Problems caused by updating/upgrading or change of applied software 	<ul style="list-style-type: none"> system Check of application of Management system procedures 	
Other calculation parameters				
<ul style="list-style-type: none"> Emission factors, oxidation factors, coefficients 	<ul style="list-style-type: none"> The values and data sources applied are defined in the PDD and monitoring plan 	<ul style="list-style-type: none"> Unintended or intended Modification of calculation parameters Wrong application of values Misinterpretations of the applied methodology and/or the PDD Missing update of applicable regulatory framework (e.g. IPCC values) 	<ul style="list-style-type: none"> Update-check of regulatory framework Countercheck of the applied MP in the MR against the methodology and the PDD 	<ul style="list-style-type: none"> See Table A-2
Calculation Methods				

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks	Additional verification testing	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
<ul style="list-style-type: none"> Applied formulae Miscalculation Mistakes in spread-sheet calculation 	<ul style="list-style-type: none"> Advanced calculation and reporting tools A CDM coordinator is in charge of the CDM related calculations Usage of tested / counterchecked Excel spreadsheets Involvement of external consultants 	<ul style="list-style-type: none"> The danger of miscalculation can only be minimized. 	<ul style="list-style-type: none"> Countercheck on the basis of own calculation. Spread sheet walk-through. Plausibility checks Check of plots 	<ul style="list-style-type: none"> See Table A-2
Monitoring reporting				
<ul style="list-style-type: none"> Data transfer to the author of the monitoring report Data transfer to the monitoring report Unintended use of outdated versions 	<ul style="list-style-type: none"> An experienced CDM consultant is responsible for monitoring reporting. CDM QMS procedures are defined 	<ul style="list-style-type: none"> The danger of data transfer mistakes can only be minimized Inappropriate application of QMS procedures 	<ul style="list-style-type: none"> Counter check with evidences provided. Audit of procedure application 	<ul style="list-style-type: none"> See Table A-2

Table A-2: (Project specific) Periodic Verification Checklist

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
A. General Description of the project activity				
A.1. Brief description of the project activity (EB 54 Annex 34, A.1) <i>Check if section A.1 of the MR includes the following:</i> <ul style="list-style-type: none"> - Purpose of the PA and the measures taken to reduce GHG emissions - Brief description of the installed technology and equipments - Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods etc. - Total emission reductions achieved in this monitoring period 	/MR/	<p>The verification team has checked section A.1 of the MR and confirms that the information provided is complete and correct with regards to the following:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Purpose of the PA and the measures taken to reduce GHG emissions <input checked="" type="checkbox"/> Brief description of the installed technology and equipments <input checked="" type="checkbox"/> Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods etc) <input checked="" type="checkbox"/> Total emission reductions achieved in this monitoring period <p>However with the reference to the MR, the following consolidated CAR A1 has been raised on editorial issues:</p> <ol style="list-style-type: none"> 1. All the abbreviations have to be clearly expanded on first use of instance in the MR. 2. The MR still has references to the Project activity as 'proposed'. Since the PA is implemented & registered, Please justify. 3. Please provide table and figure numbers in the MR. 4. The specification column for STG in page no. 2 of the MR version 1 has date in it and not the specification. 	CAR A1 CAR A2	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<p>Correction required.</p> <p>5. A clear and transparent description of all the critical information's i.e. calibration details, implementation status, QA/QC in the monitoring etc. should be added in the monitoring report.</p> <p>Furthermore, the following CAR A2 was also raised:</p> <p>During the project site visit it was observed that the name of the PP has been changed from SHYAM DRI to Shyam Metalics and Energy Limited (SMEL) w.e.f. 05/01/2010. However this is not mentioned in the MR. Relevant evidence from the authority regarding the name change also has to be submitted to the DOE.</p>		
A.2. Project Participants (EB 54 Annex 34, A.2) <i>Check if section A.2 of the MR includes the following:</i> <ul style="list-style-type: none"> - All PPs as displayed on the UNFCCC website 	/MR/ /unfccc/	<p>The verification team has checked section A.2 of the MR and confirms that the information provided is complete and correct with regards to the following:</p> <p><input checked="" type="checkbox"/> All PPs as displayed on the project related UNFCCC website are correctly listed</p> <p>In this context no findings have been identified.</p>	OK	OK
A.3. Location of the Project Activity (EB 54 Annex 34, A.3) <i>Check if section A.3 of the MR reflects correctly the following:</i> <ul style="list-style-type: none"> - Address of the project location 	/MR/ /PDD/ /MR/ /IM01/	<p>The verification team has checked section A.3 of the MR and confirms by means of comparison with the information given in the PDD and information gathered during the site visit that the information provided is complete and correct with regards to the following:</p> <p><input checked="" type="checkbox"/> The address has been correctly given in the MR</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
- <i>Latitude and Longitude</i>		<input checked="" type="checkbox"/> Latitude and Longitude are in line with the information given in the PDD and reflects the actual location of the PA. In this context no findings have been identified.		
A.4. Technical description of the project (EB 54 Annex 34, A.4) <i>Check if section A.4 of the MR correctly describes / includes the following:</i> <ul style="list-style-type: none"> - <i>Detailed description of the technology applied</i> - <i>Diagrams</i> 	/MR/ /PDD/ /IM01/	The verification team has checked section A.4 of the MR and confirms by means of comparison with the information given in the PDD and information gathered during the site visit that the information provided is complete and correct with regards to the following: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> The description of the technology applied is complete and appropriate <input checked="" type="checkbox"/> Appropriate diagrams have been included in the description In this context no findings have been identified.	OK	OK
A.5. Title, reference and version of the baseline and monitoring methodology applied to the project (EB 54 Annex 34, A.5) <i>Check if section A.5 of the MR correctly describes / includes the following:</i> <ul style="list-style-type: none"> - <i>Reference to the applicable version of the methodology</i> - <i>Reference to the applicable version(s) of relevant methodological tools</i> 	/MR/ /PDD/ /unfccc/ /ACM4/	The verification team has checked section A.5 of the MR and confirms by means of comparison with the information given in the PDD and displayed on the UNFCCC website that the information provided is complete and correct with regards to the following: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Name and version of the applicable CDM Methodology <input checked="" type="checkbox"/> Name and version of applicable CDM methodological tools <input checked="" type="checkbox"/> Relevant EB decisions In this context no findings have been identified.	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
- <i>Relevant EB decisions, if applicable</i>				
A.6. Registration date of the project activity (EB 54 Annex 34, A.6) <i>Check if section A.6 of the MR correctly includes the following:</i> <ul style="list-style-type: none"> - <i>Registration date</i> 	/MR/ /unfccc/	<p>The verification team has checked section A.6 of the MR and confirms by means of comparison with the information displayed on the UNFCCC website that the information provided is complete and correct with regards to the following:</p> <p><input checked="" type="checkbox"/> Registration date</p> <p>In this context no findings have been identified.</p>	OK	OK
A.7. Crediting period of the PA and related information (EB 54 Annex 34, A.7) <i>Check if section A.7 of the MR correctly includes the following:</i> <ul style="list-style-type: none"> - <i>Start date of the crediting period. In this context please check, if applicable, whether post registration changes to the start date have been accepted by the EB.</i> - <i>Length and type of the crediting period</i> 	/MR/ /unfccc/	<p>The verification team has checked section A.7 of the MR and confirms by means of comparison with the information displayed on the UNFCCC website that the information provided is complete and correct with regards to the following:</p> <p><input checked="" type="checkbox"/> Start date of the crediting period.</p> <p><input checked="" type="checkbox"/> Type and length of the crediting period</p> <p>In this context no findings have been identified.</p>	OK	OK
A.8. Name of the responsible person(s) / entity/(ies) (EB 54 Annex 34, A.8)	/MR/ /IMO1/	<p>The verification team has checked section A.8 of the MR and confirms by means of interviews with the PP that the information provided is complete and correct with regards to the following:</p> <p><input checked="" type="checkbox"/> Contact information of the person(s) / entity/ (ies)</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p>Check if section A.8 of the MR correctly includes the following:</p> <ul style="list-style-type: none"> Contact information of the person(s)/entity(ies) responsible for completing the MR. 		<p>responsible for completing the MR.</p> <p>In this context no findings have been identified.</p>		
B. Implementation of the project activity				
B.1. Implementation status of the project				
<p>B.1.1. Initial project implementation (EB 55 Annex 1, §§ 182, 195-201)</p> <p>Assess whether the project has been implemented and operated as per the registered PDD and are all physical features of the project in place?</p> <p>Further focus on the potential phase wise implementation and check the reporting on the corresponding status and starting dates accordingly.</p> <p>Also, discuss – if applicable – any approvals of the necessary request of notification or request for approval of changes from the project activity as described in the registered PDD (EB 48 Annex 66/67).</p>	<p>/IM01/ /PDD/ /CR/ /TD/</p>	<p><i>Description:</i></p> <p>The project proponent has commissioned 2 WHRBs (both of 38 TPH capacity, commissioned on 2007-06-02 and 2007-06-20 respectively) and 1 STG (with a generation capacity of 30 MW, commissioned on 2007-02-28). The heat combined in the waste gases is transferred to the water, which further converts the water into steam in the WHRBs. The steam produced is fed into the STG through a common header, to generate electricity from Recovered waste heat. The power thus generated is used to fulfil the captive power requirement of the SHYAM DRI Plant itself.</p> <p><i>Justification of evidences:</i></p> <p>The project is already implemented as per the registered PDD and all the physical features of the project are in place. The on - site visit observations and interviews with the project proponent and site in charge corroborate the details in the PDD^{PDD/} and</p>	CL-B+	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<p>MR^{/MR/}. However, the documentary evidences still to be reviewed.</p> <p><i>Conclusion:</i> However the following CL B1 has been raised: Documentary evidences of project activity i.e. commissioning certificate, technical specifications, auxiliary consumptions, electricity generation still to be provided.</p>		
<p>B.1.2. Technical equipment changes (EB 55 Annex 1, § 187)</p> <p><i>Check if relevant technical equipment of the project activity has been exchanged or modified during the monitoring period. Further ensure that consistent notations of key equipment (meters etc.) in PDD, MR and calculation spreadsheet are applied</i></p> <p><i>Consider e.g. interviews with operational personnel, QMS records, maintenance records, instrument specifications.</i></p> <p><i>In case of changes, check whether the project is still in line with the registered PDD and assure that these changes have been considered in the monitoring report and the emission reduction calculation.</i></p> <p><i>Also, discuss –if applicable- any approvals of the necessary request of notification or request for approval of changes from the project activity as described in the registered PDD (EB 48 Annex</i></p>	<p>/IM01/ /IM02/ /PDD/ /MR/ /LOG/ /TD/</p>	<p><i>Description:</i> As per the onsite observations, verification team has found that technical equipments of the project activity as mentioned in section A.1 of the MR have not been exchanged and/or modified during the entire monitoring period. Specifications of all the relevant technical equipments are as per the section A.2 and Annex 3 of the registered PDD^{/PDD/}.</p> <p><i>Justification of evidences:</i> Based on onsite observations and interviews/ Inspection of the technical equipments i.e. STG, WHRBs, AFBC etc. and instrument specifications.</p> <p><i>Conclusion:</i> From above observations and documentations, verification team has concluded that no relevant equipments were exchanged during the monitoring period.</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
66/67).				
<p>B.1.3. Operation of the project activity (EB 55 Annex 1, § 195)</p> <p><i>Check if relevant operation modes of the project activity have been exchanged or modified during the monitoring period.</i></p> <p><i>Consider e.g. interviews with operational personnel, operation log sheets, data management system records.</i></p> <p><i>In case of changes, check whether the project is still in line with the registered PDD and assure that these changes have been considered in the monitoring report and the emission reduction calculation.</i></p> <p><i>Also, discuss – if applicable – any approvals of the necessary request of notification or request for approval of changes from the project activity as described in the registered PDD (EB 48 Annex 66/67).</i></p>	<p>/IM01/ /IM02/ /MR/ /PDD/ /LOG/</p>	<p><i>Description:</i></p> <p>As per on site interviews^{/IM01//IM02/}, the CPP started its commercial power generation on 2007-07-12 by synchronizing with Grid. None of the technical equipments of the project activity i.e. STG, WHRBs and associated monitoring equipments have been exchanged or modified during the monitoring period.</p> <p>During the project site visit it was observed that 4 DG sets have been added to act as a back up during exigencies. The PDD or the MR does not have the information regarding the DG sets. The DG sets fuel consumption and electricity generation records will be checked during next verifications, hence FAR B3 is also raised for the same. <i>Justification of evidences:</i></p> <p>By means of interviews with the operational personnel^{/IM02/}, site visit observations and verification of various records^{/LOG/}, Breakdown / shutdown records^{/BR/} on site. However awaiting submission of all the relevant documents for further review. CL B2 is raised for DG set.</p> <p><i>Conclusion:</i></p> <p>From above observations and documentations, verification team has concluded that no relevant operation modes were exchanged within the monitoring period.</p> <p>However, the following CL B2 has been raised:</p> <p>During the project site visit it was observed that DG sets have been added to act as a back up during exigencies. The PDD or</p>	<p>CL B2</p> <p>FAR B3</p>	<p>FAR B3</p>

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		the MR does not have the information regarding the DG sets. Please clarify how the electricity generated if any is monitored from this and if the same is deducted from the gross generation. Subsequently to CL B2, FAR B3 has been raised. CL B2 has been closed successfully.		
B.1.4. Incidents (EB 55 Annex 1, § 187, 208a) <i>Identify if there have been any significant incidents, deviant operation modes and / or downtimes of the equipment?</i> <i>Consider e.g. interviews with operational personnel, operational log sheets, analysis of performance data.</i>	/IM01/ /IM02/ /MR/ /LOG/ /BR/	<i>Description:</i> During the site visit, the verification team found the appropriate maintenance procedures in place. However, the following CL B1 has been raised: Break down / shut down records with the exact details of time in hours yet to be submitted. <i>Justification of evidences:</i> Documentary evidence still to be reviewed. <i>Conclusion:</i> From the onsite visit the verification team can conclude that all the relevant incidences have been identified and enlisted in the MR. The details were verified by means of onsite assessment and verification of log sheets ^{/LOG/} , Breakdown / shutdown records ^{/BR/} and interviews with the operational personnel ^{/IM02/} . The raised CL B1 is closed successfully.	CL-B1	OK
B.1.5. Legislation Find out whether relevant legislation with effect on the project activity in the host country has been changed. Assess, in case of changes, whether consequences	/MR/ /PDD/ /cea/ /moef/	<i>Description:</i> There are no significant changes in the legislation and sectoral policy w.r.t. project activity. The actual implementation of the project activity is found to be in line with the registered PDD and national legislation of the host country. Though there were no	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
for the PA with regard to relevant CDM requirements have been accounted for. In case of changes data sources shall be referenced.	/mos/ /nesco/ /oerc/ /ospcb/	changes in the regulation which can affect the emission reduction of the project activity, the verification team would like to mention that, the EF has been revised by CEA several times since the registration of the project activity. However this has no impact on the emission reduction of the project activity as EF is fixed ex-ante. <i>Justification of evidences:</i> The national / sectoral regulations were verified from official websites of Ministry of Environment and Forest, Ministry of Steel, North Eastern Electricity Supply Company of Orissa Limited, Orissa Electricity Regulatory Commission, Orissa State Pollution Control Board and Central Electricity Authority. <i>Conclusion:</i> The verification team confirms that the change in legislation has no impact on the project activity.		
B.1.6. Open issues from validation (EB 55 Annex 1, §§ 181-183, 188c, 190c) <i>Check (esp. in case of 1st periodic verification) whether there are any open issues indicated in the validation report (e.g. FAR)?</i>	/VAL/	<input checked="" type="checkbox"/> There were no open issues addressed in the validation report <input type="checkbox"/> All open issues from the validation have been appropriately addressed. <input type="checkbox"/> The following issues related to the validation have not yet been appropriately addressed:	OK	OK
B.1.7. Open issues from previous verification (EB 55 Annex 1, § 193) <i>Check in case of further periodic verifications whether there are any open issues indicated in previous</i>	/unfccc/	<input type="checkbox"/> There were no open issues addressed in the previous verification report <input type="checkbox"/> All open issues from the previous verification have been appropriately addressed. <input type="checkbox"/> The following issues related to the previous verification	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.												
verification reports (FAR) and take into consideration the guidance as specified in VVM.		have not yet been appropriately addressed: Not applicable, as this is the first periodic verification.														
B.1.8. Publication of the Monitoring Report <i>Check if the monitoring report has been made publicly available on the UNFCCC website before the verification commenced.</i> <i>Check if comments have been received and if yes, how they have been addressed.</i>	/unfccc/ /PDD/ /MR/	<i>Description:</i> The monitoring report ^{/MR/} was made publicly available on the UNFCCC website from 2010-09-24, before the start of the verification process i.e. site visit etc. <i>Justification of evidences:</i> Verification team has checked the project (UNFCCC Reg. No.: 1642) information's on the UNFCCC website ^{/unfccc/} . <i>Conclusion:</i> The draft monitoring report, as received from the project participants, has been made publicly available prior to the start of the verification activities. Furthermore, no comments have been received.	OK	OK												
B.2. Requests for Revisions of MP (EB 55 Annex 1, §§ 201, 203, 219) <i>Check (i) if there have been any requests for revisions of the monitoring plan in the past and/or (ii) if there is a need for a RfRev. Make sure that the monitoring report reflects the application of the revision as approved by the EB, where applicable. Check in case of approved revisions if the date of approval has been included.</i>	/unfccc/	<table><tr><td><input checked="" type="checkbox"/></td><td colspan="3">No requests for revisions of the MP have been submitted to the UNFCCC prior to the current monitoring period</td></tr><tr><td><input type="checkbox"/></td><td colspan="3">The following RfRev have been approved or are under approval by the UNFCCC</td></tr><tr><td>1</td><td>Title</td><td colspan="2"></td></tr></table>	<input checked="" type="checkbox"/>	No requests for revisions of the MP have been submitted to the UNFCCC prior to the current monitoring period			<input type="checkbox"/>	The following RfRev have been approved or are under approval by the UNFCCC			1	Title			OK	OK
<input checked="" type="checkbox"/>	No requests for revisions of the MP have been submitted to the UNFCCC prior to the current monitoring period															
<input type="checkbox"/>	The following RfRev have been approved or are under approval by the UNFCCC															
1	Title															

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)				Draft Concl.	Final Concl.	
				Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved			
				Appr.date				
		2		Title				
				Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved			
				Appr.date				
		<input type="checkbox"/>	During the verification of the current MP no need for a RfRev has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA					
		<input type="checkbox"/>	The following revisions of the MP are to be requested from the EB for the current MP					
		1	Issue					
B.3. Requests for Deviations applied to this MP (EB 55 Annex 1, §§ 203, 211-219) <i>Check (i) if there have been any requests for deviations in the past and / or (ii) if there is a need for a RfDev. Make sure that the monitoring report reflects the application of the deviation as approved by the EB, where applicable. Check in case of approved deviations if the approval date and reference number has been included.</i> <i>Further check in case of approved RfDev whether the MR appropriately reflects the application of the EB</i>	/unfccc/	<input checked="" type="checkbox"/> No requests for deviations have been submitted to the UNFCCC prior to the current monitoring period				OK	OK	
		<input type="checkbox"/>	The following RfDev have been approved or are under approval by the UNFCCC					
		1	Title					
			Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved				
			Ref. No.					
			Appr.date					
		2	Title					

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)			Draft Concl.	Final Concl.															
guidance.		<table><tr><td rowspan="3"></td><td>Status</td><td colspan="2"><input type="checkbox"/> under approval; <input type="checkbox"/> approved</td></tr><tr><td>Ref. No.</td><td colspan="2"></td></tr><tr><td>Appr.date</td><td colspan="2"></td></tr></table>		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved		Ref. No.			Appr.date											
	Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved																			
	Ref. No.																				
	Appr.date																				
		<table><tr><td><input type="checkbox"/></td><td colspan="3">In case of approved guidance of the EB: The monitoring report reflects the application of the EB guidance regarding the RfDev.</td></tr><tr><td><input type="checkbox"/></td><td colspan="3">During the verification of the current MP no need for a RfDev has been indentified</td></tr><tr><td><input type="checkbox"/></td><td colspan="3">The following deviations are to be requested from the EB for the current MP</td></tr><tr><td>1</td><td>Issue</td><td colspan="2"></td></tr></table>	<input type="checkbox"/>	In case of approved guidance of the EB: The monitoring report reflects the application of the EB guidance regarding the RfDev.			<input type="checkbox"/>	During the verification of the current MP no need for a RfDev has been indentified			<input type="checkbox"/>	The following deviations are to be requested from the EB for the current MP			1	Issue					
<input type="checkbox"/>	In case of approved guidance of the EB: The monitoring report reflects the application of the EB guidance regarding the RfDev.																				
<input type="checkbox"/>	During the verification of the current MP no need for a RfDev has been indentified																				
<input type="checkbox"/>	The following deviations are to be requested from the EB for the current MP																				
1	Issue																				
		This is the first periodic verification; hence the clause is not applicable.																			
B.4. Initial verification <i>In case an initial verification has been carried out, check if all FARs, recommendations etc. can be confirmed as existent for the periodic verification.</i>	/IM01/	<table><tr><td><input checked="" type="checkbox"/></td><td colspan="3">No initial verification has been carried out.</td></tr><tr><td><input type="checkbox"/></td><td colspan="3">There are no open issues, recommendations etc. pending from the initial verification</td></tr><tr><td><input type="checkbox"/></td><td colspan="3">The following issues related to the initial verification have to be addressed:</td></tr></table>			<input checked="" type="checkbox"/>	No initial verification has been carried out.			<input type="checkbox"/>	There are no open issues, recommendations etc. pending from the initial verification			<input type="checkbox"/>	The following issues related to the initial verification have to be addressed:			NA	NA			
<input checked="" type="checkbox"/>	No initial verification has been carried out.																				
<input type="checkbox"/>	There are no open issues, recommendations etc. pending from the initial verification																				
<input type="checkbox"/>	The following issues related to the initial verification have to be addressed:																				
C. Description of the monitoring system																					
C.1. Management System <i>(EB 55 Annex 1, § 184 a (iii))</i>	/LOG/ /IM01/	<i>Description:</i> The project proponent i.e. SHYAM DRI Power Ltd. has the CDM			CL-C1	OK															

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p><i>Check if the GHG data monitoring system can be assessed as appropriate.</i></p> <p><i>In case reference is made to a (certified) company quality management system, check if all CDM related monitoring procedures have been fully integrated in the project participant's quality management system.</i></p> <p><i>In case of a stand-alone system, check how the GHG management system has been implemented and effectiveness is ensured.</i></p>	/CM/	<p>management system in place in accordance with the CDM Manual.</p> <p><i>Justification of evidences:</i></p> <p>The internal quality policies and procedures are found to be in place. As per the interviews with the project proponent^{/IM01/}, site in-charge^{/IM01/} and the on-site observations, daily logbooks^{/LOG/} for the monitoring of various GHG parameters are being verified by the monitoring in-charge and manager in charge.</p> <p><i>Conclusion:</i></p> <p>The management system is found to be in place. Monitoring and measurement procedure for CDM parameters are found to be fully integrated with quality management system of SHYAM DRI Power Ltd.</p> <p>However, the following CL C1 has been raised:</p> <p>Evidences to the internal audit were not furnished. Furthermore, the PP is requested to submit standard operating procedures (SOP) for internal QA/QC for project activity monitoring parameters, along with internal audit report.</p> <p>Furthermore, the raised CL C1 has been successfully closed.</p>		
<p>C.2. Metering diagram (EB 54 Annex 34, C)</p> <p><i>Check first if the MR includes a metering diagram showing all relevant monitoring points..</i></p>	/SLD/ /MR/ /DCS/	<p><i>Description & Conclusion:</i></p> <p>Section C of the MR includes a metering diagram. The same has been verified against the SLDs obtained during the site visit and found to be accurate by the verification team.</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>Check further if this diagram reflects the actual situation and is in line with the registered PDD and with the requirements of the applied methodology.</i>		<p><i>Justification of evidences:</i></p> <p>By means of monitoring report, single line diagram and DCS besides site observations.</p>		
<p>C.3. Roles and Responsibilities (EB 54 Annex 34, C)</p> <p><i>Check if all roles and positions of each person in the GHG data management process are clearly defined and implemented as stated in the monitoring plan. Please consider the complete data trail from raw data generation to submission of the final data.</i></p> <p><i>Identify, if relevant personnel w.r.t. monitoring has been exchanged?</i></p> <p><i>If so, have appropriate training measures been carried out.</i></p> <p><i>In case of changes, assure that the implemented monitoring procedures have not been affected.</i></p>	<p>/MR/ /MR1/ /IM01/ /TRG/ /ORG/</p>	<p><i>Description:</i></p> <p>All the roles and responsibilities of each person in the GHG data management process are clearly defined and implemented^{/ORG/}.</p> <p>All the persons involved in the monitoring process are duly qualified and trained as verified during site visit^{/TRG/}.</p> <p><i>Justification of evidences:</i></p> <p>Verification team has verified during the site visit interviews that all the personnel dealing with the monitoring procedure are well qualified and trained.</p> <p>However submission of further documentation i.e. organization chart is pending.</p> <p><i>Conclusion:</i></p> <p>All the roles and responsibilities of each person involved in the GHG data management process are clearly defined and implemented.</p> <p>However, the following CAR C2 has been raised:</p>	<p>CAR C2 GL-B1</p>	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<p>Roles and responsibility chart is missing. The PP also needs to provide the reporting procedure along with the daily and monthly reports.</p> <p>The raised CAR C2 and CL B1 are closed. Pl. refer DOE assessment for further details.</p>		
<p>C.4. Emergency procedures for the monitoring system (EB 54 Annex 34, C)</p> <p><i>Check, as appropriate, whether relevant emergency procedures for the monitoring system have been included in the MR and assess whether these procedures have been implemented, when required</i></p>	<p>/MR/ /IM01/ /IM02/</p>	<p><i>Description:</i> The relevant emergency procedures are in place and have been implemented as verified by the verification team during the site visit.</p> <p><i>Justification of evidences:</i> As verified during interview with the O&M team during the site visit.</p> <p><i>Conclusion:</i> Appropriate emergency procedures are in place. The same have been implemented onsite by the O&M team.</p>	OK	OK
<p>C.5. Data archive and data protection Check whether all records of monitoring parameters are archived according to the monitoring plan.</p> <p>Assess further whether appropriate measures have been taken in order to avoid unintended or intended manipulation or loss of the measured data.</p>	<p>/LOG/ /PDD/ /MR/ /IM01/</p>	<p><i>Description:</i> All the records of the parameters being monitored as well as the related data are archived in accordance with the monitoring plan of the registered PDD.</p> <p>Furthermore, from the site visit interviews^{/IM01/}, it was observed that appropriate measures have been taken to avoid unintended or intended manipulation of the measured data.</p> <p><i>Justification of evidences:</i> Verification team checked the log records of all the parameters</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<p>to be monitored and found the same to be in place and according to the monitoring plan. It was also checked that all the daily energy generation records were maintained in separate log sheets.</p> <p><i>Conclusion:</i></p> <p>All the monitoring parameter records are archived electronically and as well as on paper according to the monitoring plan of the registered PDD. Furthermore, appropriate measures have been taken with regards to data protection so as to avoid manipulation or loss of the measured data.</p>		
D. Data and parameters monitored				
D.1. EG_{GEN CPP}		Description: Gross electricity generated by CPP		
<p>a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203)</p> <p><i>Describe how the monitoring parameter was measured / determined.</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	<p>/IM01/ /PDD/ /ACM4/ /LOG/ /MR/</p>	<p><i>Description:</i></p> <p>The data is observed to be measured by an electric meter. This was confirmed by the site visit observation.</p> <p><i>Justification of evidences:</i></p> <p>It was observed during the site visit that data is measured continuously with a frequency of every 8 hrs. The data is maintained in the log book which is signed by the plant manager on a daily basis. This is consistent with the requirements in the registered PDD. Furthermore, it was also verified during the site visit that there has been no exchange of the measuring equipments.</p> <p>However, the PP needs to submit the data of gross electricity</p>	GL-B+	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		generated by entire CPP. <i>Conclusion:</i> The log book maintained by the plant manager has been submitted. The same have been verified and found to be acceptable. Furthermore, the raised CL B1 was closed successfully.		
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/CAL/ /MR/ /IM01/ /PDD/	<i>Description:</i> The metering equipment used to measure gross electricity generated by CPP (EGEN CPP) has an accuracy of 0.5. <i>Justification of evidences:</i> The accuracy of the meter has been verified on site. The same has also been cross verified with the calibration certificates by the verification team. <i>Conclusion:</i> The accuracy of the meter used for monitoring the gross electricity generated is found to be controlled and calibrated in accordance with the MP of the registered PDD.	OK	OK
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	/CAL/ /MR/ /LOG/	<i>Description:</i> The meter readings for the gross electricity generated are entered in the logbook and the same is verified by the plant manager. Furthermore, the meters are calibrated on an annual basis. <i>Justification of evidences:</i>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		Documentary evidence viz the logbook as well as the calibration certificates have been verified by the verification team on site. <i>Conclusion:</i> It can therefore be concluded that the QA/QC procedures are in place and in accordance to the MP.		
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i> <i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>	/MR/ /LOG/	<input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct <i>Description:</i> The gross electricity generated by CPP is measured by the electronic energy meter. The meter readings are measured continuously and recorded in the Log book. <i>Justification of evidences:</i> The verification team has verified the values mentioned in the MR with those in the logbook maintained on site. <i>Conclusion:</i> The values mentioned in the MR are found to be correct and conservative.	OK	OK
D.2. EG_{AUX CPP}		Description: Auxiliary electricity consumption by CPP		
a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203) <i>Describe how the monitoring parameter was measured / determined.</i>	/IM01/ /PDD/ /LOG/ /MR/	<i>Description:</i> The data is observed to be measured by an electric meter provided at the feed to each auxiliary consumption source. This was confirmed by the site visit observation.	CAR D1	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>		<p>The meter readings are available continuously and the same are summed up to arrive at the total auxiliary consumption.</p> <p><i>Justification of evidences:</i> The measurement is continuous and transferred to a log book which is maintained by the shift engineer and approved by shift in charge as the daily report. This is consistent with the requirements mentioned in the registered PDD. The same has been verified by the verification team and further supplemented by interviews conducted on site.</p> <p>It was also confirmed during the site visit that there has been no exchange of the measuring equipments during the monitoring period.</p> <p><i>Conclusion:</i> It can therefore be concluded that the measurement method is in accordance with the MP of the registered PDD and the applied methodology. However, the following CAR D1 has been raised: During the onsite review of the log sheets it was observed that the entry for 31/03/2009 for auxiliary is missing. Justification required on how the required parameters were monitored on this date.</p> <p>Furthermore, the raised CAR D1 has been closed.</p>		
b) Accuracy	/CAL/	Description:	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
(EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/MR/	<p>The metering equipments used to measure auxiliary electricity consumption by CPP have been mentioned to be of 1 accuracy class in the MR.</p> <p><i>Justification of evidences:</i></p> <p>The accuracy of the meter has been verified on site. The same has also been cross checked with the calibration certificates by the verification team.</p> <p><i>Conclusion:</i></p> <p>The accuracy of the meter used for monitoring the gross electricity generated is found to be controlled and calibrated in accordance with the MP.</p>		
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	/CAL/ /MR/ /LOG/	<p><i>Description:</i></p> <p>The meter readings for the auxiliary consumption are entered in the logbook and the same is verified / signed by the plant manager daily. The meters are calibrated regularly i.e. on an annual basis.</p> <p><i>Justification of evidences:</i></p> <p>The verification team has verified the documentary evidences i.e. the logbook as well as the calibration certificates during the site visit.</p> <p><i>Conclusion:</i></p> <p>It can therefore be concluded that the QA/QC procedures are in place and in accordance to the MP.</p>	OK	OK
d) Correctness	/MR/	<input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct	GLD2	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p>(EB 55 Annex 1, §§ 202, 206, 221e)</p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	/LOG/	<p><i>Description:</i></p> <p>The auxiliary electricity consumed by CPP is measured through the electronic meters provided at the feeder to each auxiliary consumption source. The meter readings will be available continuously and then transferred to the Log book. The meter readings are then summed up to arrive at the total auxiliary consumption.</p> <p><i>Justification of evidences:</i></p> <p>The verification team has verified the values mentioned in the MR with those in the logbook maintained on site.</p> <p><i>Conclusion:</i></p> <p>The values mentioned in the MR are found to be correct and conservative.</p> <p>However, the following CL D2 was raised:</p> <p>During site visit it was observed that the energy being recorded in the auxiliary consumption log sheets is in 'MWh'. However, the daily internal reports being generated have the unit for the same as MW/h. The registered PDD mentions the unit as 'MWh'. Clarification is required on the correctness of the unit being used.</p> <p>Also, the raised CL D2 was closed successfully after verification by the team.</p>		
D.3. EG_yCPP		Description: Net Electricity generation from CPP		

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p>a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203)</p> <p><i>Describe how the monitoring parameter was measured / determined.</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	/IM01/ /PDD/ /MR/	<p><i>Description:</i> This is a calculated value, arrived by the difference between the gross electricity generated by CPP and the auxiliary electricity consumed by CPP. Please refer to sections D.1 and D.2.</p> <p><i>Justification of evidences:</i> The procedure for arriving at the net electricity generated has been observed to be in place as per the registered PDD.</p> <p><i>Conclusion:</i> The determination method is therefore found to be in accordance with the MP of the registered PDD and the applied methodology.</p>	OK	OK
<p>b) Accuracy (EB 55 Annex 1, §§ 205c, 206a)</p> <p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p>	/IM01/ /PDD/ /MR/	Calculated based on measured data. Pl. Refer section D.3.a)	OK	OK
<p>c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206)</p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the</i></p>	/IM01/ /PDD/ /MR/	Calculated based on measured data. Pl. Refer section D.3.a)	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>monitoring equipment has been carried out in line with the latest EB guidance.</i>				
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i> <i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>	/IM01/ /PDD/ /MR/	Calculated based on measured data. Pl. Refer section D.3.a)	OK	OK
D.4. E_{GEN}		Description: Gross Electricity generation due to WHRB		
a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203) <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan</i>	/IM01/ /PDD/ /MR/	Description: This is a calculated value, arrived at by multiplying the “% contribution of enthalpy of steam from WHRB” to “Gross electricity generated by TG (E _{GEN})”. Justification of evidences: The procedure for arriving at the net electricity generated has been observed to be in place as per the registered PDD. Conclusion: The determination method is therefore found to be in accordance with the MP of the registered PDD and the applied	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>of the PDD and the applied methodology.</i>		methodology.		
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/IM01/ /PDD/ /MR/	Calculated based on measured data. Pl. Refer section D.4.a)	OK	OK
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	/IM01/ /PDD/ /MR/	Calculated based on measured data. Pl. Refer section D.4.a)	OK	OK
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i> <i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i>	/IM01/ /PDD/ /MR/	Calculated based on measured data. Pl. Refer section D.4.a)	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>				
D.5. E_{AUX}		Description: Auxiliary consumption for WHRB electricity generation		
a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203) <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/IM01/ /PDD/ /MR/	Description: This is a calculated value, arrived at by multiplying the “% contribution of enthalpy of steam from WHRB” to “Auxiliary electricity consumption by entire CPP (E _{AUX})”. Justification of evidences: The procedure for arriving at the net electricity generated has been observed to be in place as per the registered PDD. Conclusion: The determination method is therefore found to be in accordance with the MP of the registered PDD and the applied methodology.	OK	OK
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/IM01/ /PDD/ /MR/	Calculated based on measured data. Pl. Refer section D.5.a)	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	/IM01/ /PDD/ /MR/	Calculated based on measured data. Pl. Refer section D.5.a)	OK	OK
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i> <i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>	/IM01/ /PDD/ /MR/	Calculated based on measured data. Pl. Refer section D.5.a) PL. also refer CAR D1	CAR D1	OK
D.6. EG_y		Description: Net electricity generated due to WHRB		
a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203) <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard</i>	/IM01/ /PDD/ /MR/	Description: This is a calculated value, arrived at by the difference between the “Gross Electricity generation due to WHRB” and the “Auxiliary consumption for WHRB electricity generation”. Please refer sections D.4 and D.5. Justification of evidences:	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p><i>equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>		<p>The procedure for arriving at the net electricity generated has been observed to be in place as per the registered PDD.</p> <p><i>Conclusion:</i> The determination method is therefore found to be in accordance with the MP of the registered PDD and the applied methodology.</p>		
<p>b) Accuracy (EB 55 Annex 1, §§ 205c, 206a)</p> <p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p>	/IM01/ /PDD/ /MR/	Calculated based on measured data. Pl. Refer section D.6.a)	OK	OK
<p>c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206)</p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p>	/IM01/ /PDD/ /MR/	Calculated based on measured data. Pl. Refer section D.6.a)	OK	OK
<p>d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e)</p> <p><i>Determine whether the value given in the monitoring</i></p>	/IM01/ /PDD/ /MR/	Calculated based on measured data. Pl. Refer section D.6.a)	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p><i>report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>				
D.7. STEAM FLOW (F1,F2)		Description: Steam flow at outlet of WHRB – 1 & WHRB - 2		
<p>a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203)</p> <p><i>Describe how the monitoring parameter was measured / determined.</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	/IM01/ /PDD/ /MR/	<p>Description: The steam flow is found to be measured by the steam flow meters provided at the outlets of WHRBs 1 and 2. It has been found that transmitters feed the reading into the DCS on a continuous basis. The recording of this value has also been observed from the daily reports i.e. log book maintained by the shift engineer which is further approved by the shift in charge. The metering equipments are calibrated annually.</p> <p>Justification of evidences: The procedure for measuring the steam flow has been observed to be in place as mentioned in the registered PDD by the verification team.</p> <p>Conclusion: The method of measurement is in line with the registered MP and the applied methodology. The same has been verified by the verification team on site.</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/CAL/ /MR/	<p><i>Description:</i> The metering equipments used to measure the steam flow from the WHRBs are observed to have an accuracy of class 0.1. The same are calibrated on a regular basis i.e. annually.</p> <p><i>Justification of evidences:</i> The verification team has verified the same during the site visit and further cross checked it with the calibration certificates.</p> <p><i>Conclusion:</i> However the following CL D3 has been raised: The PP needs to provide the calibration data related to steam Flow at outlet of WHRB-1, WHRB-2, AFBC and TG input i.e. F1, F2, F3 and F4 respectively.</p> <p>The raised CL D3 is now closed. It can therefore be concluded that the metering equipment is controlled and calibrated as per the registered MP.</p>	CL-D3	OK
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	/CAL/ /MR/ /LOG/	<p><i>Description:</i> The steam flow quantity is measured by the steam flow meters and the readings are entered in the logbooks by the shift engineer. The same is then verified/ approved by the shift in charge.</p> <p>However, please refer CL D3.</p>	CL-D3	OK



Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<p><i>Justification of evidences:</i></p> <p>The verification team has verified the same by checking the log books during the same visit. Calibration certificates of the steam flow meters were also cross checked.</p> <p><i>Conclusion:</i></p> <p>The applicable QA/QC procedures are being met. Furthermore, the meters are calibrated on an annual basis.</p> <p>Also, the raised CL D3 has been closed.</p>		
<p>d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e)</p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	/MR/	<p><input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct</p> <p><i>Description:</i></p> <p>The steam flow is found to be measured by the steam flow meters provided at the outlets of WHRBs 1 and 2. The transmitters feed the reading into the DCS on a continuous basis. The recording of this value is then transferred to the log book maintained by the shift engineer which is further approved by the shift in charge. The same is maintained as the daily report. The metering equipments are calibrated annually.</p> <p><i>Justification of evidences:</i></p> <p>The verification team has verified the values mentioned in the MR with those in the logbook maintained on site.</p> <p><i>Conclusion:</i></p> <p>The values mentioned in the MR are found to be correct and conservative.</p>	OK	OK
D.8. STEAM FLOW (F3)		Description: Steam flow at outlet of AFBC		

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p>a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203)</p> <p><i>Describe how the monitoring parameter was measured / determined.</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	/IM01/ /PDD/ /LOG/	<p><i>Description:</i> The steam flow is found to be measured at the output of AFBC by the steam flow meter. The readings are available on the DCS continuously. The same are maintained as daily reports by the shift engineer which are further approved by the shift in charge.</p> <p><i>Justification of evidences:</i> The procedure for measuring the steam flow has been observed to be in place as mentioned in the registered PDD.</p> <p><i>Conclusion:</i> The method of measurement is in line with the registered MP and the applied methodology. The same has been verified by the verification team on site.</p>	OK	OK
<p>b) Accuracy (EB 55 Annex 1, §§ 205c, 206a)</p> <p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p>	/CAL/ /MR/ /PDD/	<p><i>Description:</i> The steam flow meter is observed to have an accuracy of class 0.1. The same is calibrated on a regular basis i.e. annually.</p> <p><i>Justification of evidences:</i> The verification team has verified the same during the site visit and further cross checked it with the calibration certificates.</p> <p><i>Conclusion:</i> However the following CL D3 has been raised: The PP needs to provide the calibration data related to steam</p>	CL D3	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<p>Flow at outlet of WHRB-1, WHRB-2, AFBC and TG input i.e. F1, F2, F3 and F4 respectively.</p> <p>The raised CL D3 is now closed successfully. It can therefore be concluded that the metering equipment is controlled and calibrated as per the registered MP.</p>		
<p>c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p>	<p>/CAL/ /LOG/ /MR/</p>	<p><i>Description:</i> The steam flow quantity is measured by the steam flow meter and the readings are entered in the logbook by the shift engineer. The same is then verified/ approved by the shift in charge.</p> <p>Furthermore, the meter is calibrated on an annual basis. Also, Pl. refer CL D3.</p> <p><i>Justification of evidences:</i> The verification team has verified the same by checking the log books during the same visit. Calibration certificates of the steam flow meter were also cross checked.</p> <p><i>Conclusion:</i> The applicable QA/QC procedures are being met.</p>	CL-D3	OK
<p>d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) <i>Determine whether the value given in the monitoring</i></p>	<p>/MR/ /LOG/</p>	<p><input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct</p> <p><i>Description:</i> The steam flow is found to be measured by the steam flow</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p><i>report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>		<p>meter provided at the outlet of AFBC. The readings are available on the DCS continuously. The same are maintained as daily reports by the shift engineer which are further approved by the shift in charge. Furthermore, the metering equipment is calibrated annually.</p> <p><i>Justification of evidences:</i></p> <p>The verification team has verified the values mentioned in the MR with those in the logbook maintained on site.</p> <p><i>Conclusion:</i></p> <p>The values mentioned in the MR are found to be correct and conservative.</p>		
D.9. STEAM FLOW (F4)		Description: Steam flow at inlet of TG		
<p>a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203)</p> <p><i>Describe how the monitoring parameter was measured / determined.</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan</i></p>	<p>/IM01/ /PDD/ /LOG/</p>	<p><i>Description:</i></p> <p>The steam flow is found to be measured at the inlet of the TG by the steam flow meter. The readings are available on the DCS continuously. The same are maintained as daily reports by the shift engineer which are further approved by the shift in charge.</p> <p><i>Justification of evidences:</i></p> <p>The procedure for measuring the steam flow has been observed to be in place as mentioned in the registered PDD. The same has also been cross checked with the readings in the log book verified on site.</p> <p><i>Conclusion:</i></p> <p>The method of measurement is in line with the registered MP</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>of the PDD and the applied methodology.</i>		and the applied methodology. The same has been verified by the verification team on site.		
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/CAL/ /MR/ /PDD/	<p><i>Description:</i> The steam flow meter is observed to have an accuracy of class 0.1. The same is calibrated on a regular basis i.e. annually.</p> <p><i>Justification of evidences:</i> The verification team has verified the same during the site visit and further cross checked it with the calibration certificates.</p> <p><i>Conclusion:</i> However the following CL D3 has been raised: The PP needs to provide the calibration data related to steam Flow at outlet of WHRB-1, WHRB-2, AFBC and TG input i.e. F1, F2, F3 and F4 respectively.</p> <p>The raised CL D3 is closed. It can therefore be concluded that the metering equipment is controlled and calibrated as per the registered MP.</p>	CL-D3	OK
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures</i>	/CAL/ /LOG/ /MR/	<p><i>Description:</i> The steam flow quantity is measured by the steam flow meter and the readings are entered in the logbook by the shift</p>	CL-D3	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>		<p>engineer. The same is then verified/ approved by the shift in charge.</p> <p>Pl. also refer CL D3.</p> <p><i>Justification of evidences:</i></p> <p>The verification team has verified the same by checking the log book during the same visit. Calibration certificates of the steam flow meter were also cross checked.</p> <p><i>Conclusion:</i></p> <p>The applicable QA/QC procedures are being met. Furthermore, the meter is calibrated on an annual basis.</p>		
<p>d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e)</p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	/MR/ /LOG/	<p><input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct</p> <p><i>Description:</i></p> <p>The steam flow is found to be measured by the steam flow meter provided at the inlet of the TG. The readings are available on the DCS continuously. The same are maintained as daily reports by the shift engineer which are further approved by the shift in charge. Furthermore, the metering equipment is calibrated annually.</p> <p><i>Justification of evidences:</i></p> <p>The verification team has verified the values mentioned in the MR with those in the logbook maintained on site.</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<i>Conclusion:</i> The values mentioned in the MR are found to be correct and conservative.		
D.10. Steam Temp (T1,T2 &T3)		Description: Temperature of steam at outlet of WHRB - 1, WHRB – 2 & AFBC		
a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203) Describe how the monitoring parameter was measured / determined. Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/IM01/ /PDD/ /MR/	<i>Description:</i> The steam temperature is found to be measured at the output of WHRBs 1, 2, and AFBC by the temperature meters provided at their outputs. The readings are available on the DCS continuously. The recording of this value has also been observed from the daily reports approved by the shift in charge. <i>Justification of evidences:</i> The procedure for measuring the steam temperature has been observed to be in place as mentioned in the registered PDD. The same has also been cross checked with the readings in the log book verified on site. <i>Conclusion:</i> The method of measurement is in line with the registered MP and the applied methodology. The same has been verified by the verification team on site.	OK	OK
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) In case of measured (or estimated) values, check	/CAL/ /MR/ /PDD/	<i>Description:</i> The metering equipments used to measure the steam temperature from the WHRBs and AFBC are observed to have	CAR D4 CL-D5	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>		<p>an accuracy of class 0.1. The same are calibrated on a regular basis i.e. annually.</p> <p><i>Justification of evidences:</i> Closure pending submission of relevant documents related to the records of the data.</p> <p><i>Conclusion:</i> The following CAR D4 has been raised: It is observed that the steam temperature and pressure meters / gauges are internally calibrated which is inconsistent with the registered PDD. §3 of Annex 60 EB 52 has to be applied throughout the monitoring period for the recorded data of above mentioned parameters.</p> <p>The following CL D5 has also been raised:</p> <p>The PP needs to provide the calibration data related to steam temperatures at outlet of WHRB-1, WHRB-2 and AFBC i.e. T1, T2 and T3 respectively.</p> <p>The raised CAR D4 and CL D5 have been closed. Pl. refer the DOE assessment for closure of the same.</p>		
<p>c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206)</p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line</i></p>	<p>/LOG/ /MR/ /CAL/</p>	<p><i>Description:</i> The steam temperature is measured by temperature meters and the readings are entered in the logbook by the shift engineer. The same is verified by the shift in charge.</p> <p>Furthermore, the meters are regularly calibrated. Pl. refer CL D5</p>	CL-D5	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>with the latest EB guidance.</i>		<p><i>Justification of evidences:</i></p> <p>The verification team has verified the same by checking the log book during the same visit. Calibration certificates of the temperature meters were also cross checked.</p> <p><i>Conclusion:</i></p> <p>The applicable QA/QC procedures are being met.</p>		
<p>d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e)</p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	/MR/	The data of temperature is measured and correct as checked during the site visit. Pl. Refer section D.10 a),b) and c)	CL-D5	OK
D.11. Steam Pressure (P1, P2)		Description: Pressure of steam at outlet of WHRB – 1 & WHRB – 2		
<p>a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203)</p> <p><i>Describe how the monitoring parameter was</i></p>	/IM01/ /PDD/ /MR/ /MR1/	<p><i>Description:</i></p> <p>The steam pressure is found to be measured at the outlets of WHRBs 1 and 2 by the pressure gauges. The readings are</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p><i>measured / determined.</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	/LOG/	<p>available on the DCS continuously. The recording of this value has also been observed from the daily reports approved by the shift in charge.</p> <p><i>Justification of evidences:</i> The procedure for measuring the steam flow has been observed to be in place as mentioned in the registered PDD. The same has also been cross checked with the readings in the log book verified on site.</p> <p><i>Conclusion:</i> The method of measurement is in line with the registered MP and the applied methodology. The same has been verified by the verification team on site.</p>		
<p>b) Accuracy (EB 55 Annex 1, §§ 205c, 206a)</p> <p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p>	/CAL/ /MR/ /MR1/	<p><i>Description:</i> The steam pressure gauges used for the WHRBs are observed to have an accuracy of class 0.1. The same are calibrated on a regular basis i.e. annually.</p> <p><i>Justification of evidences:</i> Closure pending submission of relevant documents related to the records of the data.</p> <p><i>Conclusion:</i> The following CAR D4 has been raised: It is observed that the steam temperature and pressure meters / gauges are internally calibrated which is inconsistent with the registered PDD. §3 of Annex 60 EB 52 has to be applied</p>	CAR D4 GLD6	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		<p>throughout the monitoring period for the recorded data of above mentioned parameters.</p> <p>The following CL D6 has also been raised: The PP needs to provide the calibration data related to steam pressure at outlet of WHRB-1, WHRB-2 and AFBC i.e. P1, P2 and P3 respectively.</p> <p>The raised CAR D4 and CL D6 have been closed. Pl. refer the DOE assessment for closure of the same.</p>		
<p>c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206)</p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p>	/CAL/ /LOG/ /MR/	<p><i>Description:</i> The steam pressure is measured by the pressure gauges and the readings are entered in the logbook by the shift engineer. The same is then verified by the shift in charge.</p> <p>The pressure gauges are calibrated regularly. Pl. refer CAR D4 and CL D6.</p> <p><i>Justification of evidences:</i> The verification team has verified the same by checking the log book during the site visit. Calibration certificates of the pressure gauges were also cross checked.</p> <p><i>Conclusion:</i> The applicable QA/QC procedures are being met.</p>	CAR D4 CL D6	OK
d) Correctness	/MR/	<input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p>(EB 55 Annex 1, §§ 202, 206, 221e)</p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	/LOG/	<p><i>Description:</i></p> <p>The pressure gauge reading is available continuously on the DCS. The same is then transferred and maintained in a Log book by the shift engineer.</p> <p><i>Justification of evidences:</i></p> <p>The verification team has verified the values mentioned in the MR with those in the logbook maintained on site.</p> <p><i>Conclusion:</i></p> <p>The values mentioned in the MR are found to be correct and conservative.</p>		
D.12. Steam Pressure (P3)		Description: Pressure of steam at outlet of AFBC		
<p>a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203)</p> <p><i>Describe how the monitoring parameter was measured / determined.</i></p> <p><i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i></p> <p><i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i></p>	/IM01/ /PDD/ /MR/ /MR1/ /LOG/	<p><i>Description:</i></p> <p>The steam pressure is found to be measured at the outlet of AFBC by the pressure gauges. The readings are available on the DCS continuously. The recording of this value has also been observed from the daily reports approved by the shift in charge.</p> <p><i>Justification of evidences:</i></p> <p>The procedure for measuring the steam flow has been observed to be in place as mentioned in the registered PDD. The same has also been cross checked with the readings in the log book verified on site.</p> <p><i>Conclusion:</i></p> <p>The method of measurement is in line with the registered MP and the applied methodology. The same has been verified by</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		the verification team on site.		
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i>	/CAL/ /MR/ /MR1/	<p>Description: The steam pressure gauges used for the AFBC is observed to have an accuracy of class 0.1. The same are calibrated on a regular basis i.e. annually.</p> <p>Justification of evidences: Closure pending submission of relevant documents related to the records of the data.</p> <p>Conclusion: The following CAR D4 has been raised: It is observed that the steam temperature and pressure meters / gauges are internally calibrated which is inconsistent with the registered PDD. §3 of Annex 60 EB 52 has to be applied throughout the monitoring period for the recorded data of above mentioned parameters.</p> <p>The following CL D6 has also been raised: The PP needs to provide the calibration data related to steam pressure at outlet of WHRB-1, WHRB-2 and AFBC i.e. P1, P2 and P3 respectively.</p> <p>The raised CAR D4 and CL D6 have been closed. Pl. refer the DOE assessment for closure of the same.</p>	CAR D4 CL D6	OK
c) QA/QC Procedure	/CAL/	Description:	CAR	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p>(EB 55 Annex 1, §§ 184b (vii), 205c, 206)</p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p>	/LOG/ /MR/	<p>The steam pressure is measured by the pressure gauges and the readings are entered in the logbook by the shift engineer. The same is then verified by the shift in charge.</p> <p>The pressure gauges are calibrated regularly. Pl. refer CAR D4 and CL D6.</p> <p><i>Justification of evidences:</i></p> <p>The verification team has verified the same by checking the log book during the site visit. Calibration certificates of the pressure gauges were also cross checked.</p> <p><i>Conclusion:</i></p> <p>The applicable QA/QC procedures are being met.</p>	D4 CL D6	
<p>d) Correctness</p> <p>(EB 55 Annex 1, §§ 202, 206, 221e)</p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>	/MR/ /LOG/	<p><input checked="" type="checkbox"/> Correct <input type="checkbox"/> Not correct</p> <p><i>Description:</i></p> <p>The pressure gauge reading is available continuously on the DCS. The same is then transferred and maintained in a Log book by the shift engineer.</p> <p><i>Justification of evidences:</i></p> <p>The verification team has verified the values mentioned in the MR with those in the logbook maintained on site.</p> <p><i>Conclusion:</i></p> <p>The values mentioned in the MR are found to be correct and</p>	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
		conservative.		
D.13. EG_{IMPORT}		Description: Gross Electricity imported from Grid		
a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203) <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/IM01/ /MR/ /JMR/	Description: The data is observed to be measured by an electric meter provided at the substation where the grid interface is established. This was confirmed during the site visit. Justification of evidences: The data measurement is found to be continuous. Monthly joint meter readings (JMR) for the electricity imported from the grid are available at the plant and the same were cross checked during the site visit. Furthermore, no exchange of equipments has been observed during the morning period. Conclusion: The method for measurement is in line with the registered Monitoring plan and the applied methodology.	OK	OK
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have</i>	/MR/ /IM01/	Description: The electronic meter provided at the grid interface is of class 0.2 accuracy. The same are calibrated by the Grid authorities at regular intervals as per the prevailing laws of the grid. Justification of evidences: As the calibration of the above mentioned meter is entirely under the control of the Grid authorities, the calibration documents are not available for the same. Therefore as per Annex 60 of EB 58	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>been made for calculating ERs.</i>		<p>an error adjustment has been applied to the measured value. The same has been verified by the verification team and found to be acceptable.</p> <p><i>Conclusion:</i> The measured value for the Gross electricity imported from the Grid is found to be accurate.</p>		
<p>c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206)</p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p>	/MR/ /IM01/	<p><i>Description:</i> The electric meter provided to measure the gross electricity imported is entirely under the control of the Grid authorities. The meter is sealed and calibrated at regular intervals.</p> <p><i>Justification of evidences:</i> It was observed by the verification team during the site visit that the meter is sealed by the authorities and that the PP has no control over it.</p> <p><i>Conclusion:</i> It can be concluded that the QA/QC procedures are in place and are implemented as per the MR.</p>	OK	OK
<p>d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e)</p> <p><i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i></p> <p><i>In case of conservative approaches used in lieu of the</i></p>	/MR/	<p>Pl. Refer Section D.13. a), b) and c)</p> <p>Furthermore, the following CL D7 has been raised: The PP needs to provide the data related to Electricity import and export which is done during the first monitoring period.</p>	CL D7	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i> <i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i>		The CL D7 has been closed successfully after verification of the data. Pl. refer DOE assessment for the details of the same.		
D.14. EG_{EXPORT}		Description: Gross Electricity exported to the Grid		
a) Measurement / Determination method (EB 55 Annex 1, §§ 184-185, 202-203) <i>Describe how the monitoring parameter was measured / determined.</i> <i>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</i> <i>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</i>	/IM01/ /MR/ /JMR/	Description: The data is observed to be measured by an electric meter provided at the substation where the interface with the grid was established. This was confirmed during the site visit. Justification of evidences: The data measurement is found to be continuous. Monthly joint meter readings (JMR) for the electricity imported from the grid are available at the plant and the same were cross checked during the site visit. Furthermore, no exchange of equipments has been observed during the morning period. Conclusion: The method for determination is found to be in line with that specified in the MR and the applied methodology.	OK	OK
b) Accuracy (EB 55 Annex 1, §§ 205c, 206a) <i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most</i>	/MR/ /JMR/ /IM01/	Description: The electronic meter provided at the grid interface is of class 0.2 accuracy. The same are calibrated by the Grid authorities at regular intervals as per the prevailing laws of the grid. Justification of evidences: As the calibration of the above mentioned meter is entirely under the control of the Grid authorities, the calibration documents are	OK	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>conservative assumptions theoretically possible have been made for calculating ERs.</i>		not available for the same. The same has been verified by the verification team on site and by cross checking with the JMRs and found to be acceptable. <i>Conclusion:</i> The measured value for the Gross electricity exported to the Grid is found to be accurate.		
c) QA/QC Procedure (EB 55 Annex 1, §§ 184b (vii), 205c, 206) <i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i>	/MR/ /IM01/	<i>Description:</i> The electric meter provided to measure the gross electricity imported is entirely under the control of the Grid authorities. The meter is sealed and calibrated at regular intervals. <i>Justification of evidences:</i> It was observed by the verification team during the site visit that the meter is sealed by the authorities and that the PP has no control over it. <i>Conclusion:</i> It can be concluded that the QA/QC procedures are in place and are implemented as per the MR.	OK	OK
d) Correctness (EB 55 Annex 1, §§ 202, 206, 221e) <i>Determine whether the value given in the monitoring report is correct or determined in a conservative manner.</i>	/MR/	Pl. Refer Section D.14. a), b) and c) Furthermore, the following CL D7 has been raised The PP needs to provide the data related to Electricity import and export which is done during the first monitoring period.	CL-D7	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p><i>In case of conservative approaches used in lieu of the monitoring as per registered MP detailed assessment of the conservativeness of the approach used should be given.</i></p> <p><i>In case of mistakes / deviations pl. provide details and descriptions of the CARs raised.</i></p>		The CL D7 has been closed successfully after verification of the data. Pl. refer DOE assessment for the details of the same.		
E. Emission reductions calculation				
<p>E.1. Traceability (EB 55 Annex 1, § 182)</p> <p><i>Assess if the calculation is fully traceable. In case of complex calculations an Excel calculation spreadsheet shall be used. All applied formulae must be visible.</i></p>	/XLS/	<p><i>Description:</i> PP is required to submit a traceable ER Spread sheet.</p> <p><i>Justification of evidences:</i> Submission of ER sheet awaited.</p> <p><i>Conclusion:</i></p> <p>The raised CAR E1 is successfully closed. Pl. Refer the DOE assessment for details of the same.</p>	CAR E1	OK
<p>E.2. Parameter consistency (EB 55 Annex 1, § 186; EB 54 Annex 34 Pt.1)</p> <p><i>Assess whether all internal and external parameters and data used for calculation are applied consistently in the monitoring report and the calculation spreadsheet?</i></p> <p><i>Consider only the correct data exchange between the monitoring report and the calculation spreadsheet (if any). Further ensure the consistency of notations for</i></p>	/XLS/	Please refer Section E.1.	CAR E1	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>all parameters in the PDD, MR, calculation spreadsheet.</i>				
E.3. Parameter presentation (EB 54 Annex 34 Pt.1) <i>Check if all values included in the MR are presented as per international standards</i> <ul style="list-style-type: none"> - <i>Format: Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i> - <i>Units: Values shall be directly given in SI units – or additionally to original units transferred to SI.</i> - <i>Short scale naming system: (Only) million = 10⁶ and billion 10⁹ shall be used.</i> 	/MR/	<p><i>Description:</i> The values in the MR are presented as per the international standard i.e. units and naming system.</p> <p><i>Justification of evidences:</i></p> <p>The vales mentioned in the MR have been verified by the verification team against the international standard formats and found to be acceptable.</p> <p><i>Conclusion:</i></p> <p>The values in the MR are presented as per the international units and naming system.</p>	OK	OK
E.4. Correctness of calculation (EB 55 Annex 1, §§ 204-206) <i>Check if the applied formulae and methods for calculating baseline emissions, project emissions and leakage are in accordance with the monitoring plan and / or the approved methodology.</i> <i>Assess whether the provided calculations are complete and reflect all requirements of the</i>	/XLS/ /MR/	Please refer Section E.1.	CAR E1	OK

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<i>monitoring plan.</i> <i>Check especially that no standard or old values have been used for calculation where calculations based on up-to-date data is required.</i>				
E.5. Emission reductions table (EB 54 Annex 34, E.4) <i>Check if the MR includes a summary table of the emission reductions calculation specifying separately</i> <ul style="list-style-type: none"> - Total baseline emissions - Total project emissions: - Total leakage - Total emission reductions. <i>Assess whether the values are correct or need to be revised as a consequence of issues identified above.</i>	/MR/ /XLS/	<input checked="" type="checkbox"/> The MR includes in section E.4 a summary table of the emission reductions calculation. <input checked="" type="checkbox"/> The summary table specified the total baseline, project and leakage emissions as well as the total emission reductions separately. <input type="checkbox"/> The values as specified in the ER summary table are correct; no issues have been identified during the verification which require changes in the ER calculation. <input type="checkbox"/> During the verification issues with impact on the ER calculation have been identified. Thus subject to the closure of above listed findings the summary table in E.4 needs to be revised. In this context the following additional findings have been identified: PI. Refer section E.1	CAR E1	OK
E.6. Comparison with ex-ante determined emission reductions (EB 54 Annex 34, E.5; E.6) <i>Check if the MR includes a comparison of actual values of the monitoring period with the estimations in</i>	/MR/ /PDD/	<i>Description:</i> Comparison between estimated and actual emission reduction has not been done in the Monitoring Report. The comparison should be appropriate and calculated for the period under monitoring.	CAR E2	OK



Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
<p><i>the registered PDD.</i></p> <p><i>Check further whether in case of an increase an appropriate explanation is included in the MR.</i></p> <p><i>Assess in case of a significant increase whether this is due to technical or organisational changes within or outside the control of the PP which might require a notification / approval of changes (as per EB 48 Annex 66/67).</i></p>		<p><i>Justification of evidences:</i></p> <p>The required comparison is not mentioned in the MR</p> <p><i>Conclusion:</i></p> <p>The raised CAR E2 has been closed successfully.</p>		



ANNEX 2: STATEMENTS OF COMPETENCE OF ALL INVOLVED PERSONNEL



Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Ashwin A.S.

SCHEME	STATUS	VALID UNTIL
CDM	Assessor	2012-11-29
VCS	Assessor	2012-11-29

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
14.1	Forestry

093 – Rev. 0, Date: 2011-03-23

093_S01-F003_2011-03-23_rev0

S01-F003 rev0 / 2010-04-19



Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Pankaj Mohan

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification)	2014-07-11
VCS	Senior Assessor (Validation, Verification)	2014-07-11

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.1	Thermal energy generation	
1.2	Renewable energy	
2.1	Electricity distribution	
3.1	Energy demand	
4.1	Cement sector*	
4.5	Waste Heat Recovery*	

*valid for validation/verification assessments contracted prior to 2012-03-17.

150 – Rev. 3, Date: 2011-10-28

150_S01-F003_2011-10-28_rev3.doc

S01-F003 rev1 / 2011-08-02



Statement of Competence

Appointment and authorization according to the procedures of the TÜV NORD JI/CDM Certification Program

Mr. Vineet Kumar

SCHEME	STATUS	VALID UNTIL
CDM	Assessor (Validation, Verification)	2015-01-19
VCS	Assessor	2015-01-19

234 – Rev. 0, Date: 2012-01-20

234_S01-F003_2011-01-20_rev0 - Vineet Kumar.doc

S01-F003 rev1 / 2011-08-02

**Statement of Competence**

Appointment and authorization according to the procedures
of the TÜV NORD JI/CDM Certification Program

Mr. Rainer Winter

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2013-07-03
JI	Senior Assessor Technical Reviewer	2013-07-03
VCS	Senior Assessor Technical Reviewer	2013-07-03

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.1	Thermal Energy Generation	
1.2	Renewable Energies	1.2.1 Hydro 1.2.2 Wind 1.2.3 Geothermal 1.2.4 Solar 1.2.5 Tidal
4.1	Cement Sector	
4.3	Iron and Steel	
4.5	Waste Heat Recovery	
5.1	Chemical Process Industries	
9.1	Metal Production	
11.1	Chemical Process Industries	
11.2	GHG Capture and Destruction	
12.1	Chemical Process Industries	
13.1	Waste Handling and Disposal	13.1.1 Waste Management

003 – Rev. 5, Date: 2011-08-01

003_S01-F003_2011-08-01_rev5

S01-F003 rev0 / 2010-04-19

**Statement of Competence**

Appointment and authorization according to the procedures
of the TÜV NORD JI/CDM Certification Program

Mr. Stefan Winter

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2014-06-30
VCS	Senior Assessor (Validation, Verification) Technical Reviewer	2014-06-30

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.1	Thermal energy generation	
1.2	Renewable Energy	1.2.1 Hydro 1.2.2 Wind 1.2.3 Geothermal 1.2.4 Solar 1.2.5 Tidal
2.2	Heat distribution	
3.1	Energy demand	
13.1	Waste handling and disposal	13.1.1 Waste management 13.1.2 Waste water management
13.2	Animal waste management	
15.2	Animal waste management	

163 – Rev. 2, Date: 2011-08-10

163_S01-F003_2011-08-10_rev2

S01-F003 rev1 / 2011-08-02