



VERIFICATION REPORT GVK GAUTAMI POWER LIMITED, HYDERABAD

VERIFICATION OF THE NATURAL GAS BASED GRID CONNECTED POWER PROJECT AT PEDDAPURAM, A.P. BY GAUTAMI POWER LIMITED

REPORT No.BVC/INDIA-VR/497.49/2014

REVISION No. 01

BUREAU VERITAS CERTIFICATION

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VERIFICATION REPORT

Date of first issue: 31/01/2014	Organizational unit: Bureau Veritas Certification Holding SAS
Client: GVK Gautami Power Limited, Hyderabad	Client ref.: Mr. George Issac Anicattu
<p>Summary:</p> <p>Bureau Veritas Certification has conducted the 1st periodic verification of Natural Gas based grid connected power project at Peddapuram, A.P. by Gautami Power Limited, CDM Registration Reference Number 4828, owned by GVK Gautami Power Limited, Hyderabad, which is located in Industrial Development Area, Samalkot, near the port town Kakinada, Andhra Pradesh, and applying the methodology AM0029 Version 03, on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.</p> <p>The verification scope is defined as an independent and objective review and ex-post determination of the monitored GHG emission reductions, and consisted of the following three phases: i) desk review of the project design, the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.</p> <p>In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in the validated and approved revised project design documents. Installed equipments being essential for generating emission reduction run reliably and are calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reductions are calculated without material misstatements, and the emission reductions verified totalize 342,818 tons of CO₂e for the monitoring period.</p> <p>Our opinion relates to the projects' GHG emissions and resulting GHG emission reductions reported and related to the valid and registered project baseline, approved revised monitoring plan and its associated documents.</p>	
<p>Reporting period: 09/09/2011 to 10/03/2012</p> <p>Baseline emissions: 918,258 t CO₂ equivalents.</p> <p>Project emissions: 543,001 t CO₂ equivalents.</p> <p>Leakage emissions: 32,439 t CO₂ equivalents.</p> <p>Emission Reductions: 342,818 t CO₂ equivalents.</p>	

Report No.: BVC-India/VR497.49/2014	Subject Group: CDM
Project title: Natural Gas based grid connected power project at Peddapuram, A.P. by Gautami Power Limited	
Work carried out by: Mr. Sanjay Patankar - Team Leader Mr. Prabhavtar Singh - Team Member Mr. Sadashiv Bhat - Technical Expert	
Internal Technical Review carried out by: Mr. Bhavesh Prajapati	
Date of this revision: 05/05/2014	Rev. No.: 01
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Indexing terms

Work approved by:

Matthieu Martini

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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DRR	Daily Reading Record
ETN	Electricity Transaction Note
FAR	Forward Action Request
GHG	Green House Gas(es)
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
MRR	Monthly Reading Record
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Participant
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard



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1. INTRODUCTION

GVK Gautami Power Limited, Hyderabad has commissioned Bureau Veritas Certification to verify the emissions reductions of its CDM project Natural Gas based grid connected power project at Peddapuram, A.P. by Gautami Power Limited (hereafter called “**the Project**”) at Industrial Development Area, Samalkot, near the port town Kakinada, Andhra Pradesh.

This report summarizes the findings of the verification of the Project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1. Objective

The objective of CDM verification is to conduct a thorough, independent assessment of the registered project activities.

In carrying out its verification work, the DOE shall ensure that the project activity complies with the requirements of paragraph 62 of the CDM modalities and procedures. In particular, this assessment shall:

- (a) Ensure that the project activity has been implemented and operated as per the registered PDD or any approved revised PDD, and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- (b) Ensure that the monitoring report and other supporting documents provided are complete in accordance with latest applicable version of the completeness checklist for requests for issuance of CERs, verifiable, and in accordance with applicable CDM requirements;
- (c) Ensure that actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan or any revised approved monitoring plan, and the approved methodology including applicable tool(s);
- (d) Evaluate the data recorded and stored as per the monitoring methodology including applicable tool(s).

1.2. Scope

The verification scope is defined as an independent and objective review and ex-post determination of the monitored GHG emission reductions. The verification is based on the validated and registered project design document, the monitoring report, emission reduction calculation spreadsheet, and supporting documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting service towards the PPs. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.



1.3. GHG Project Description

The purpose of the project activity is construction and operation of a new, grid connected 469 MW natural gas fired Combined Cycle Power Plant (CCPP). Under the project activity, a new independent grid connected power plant is constructed and operated. The electricity generated is supplied to the southern grid under a Power Purchase Agreement between Project Participant and APSEB. The project activity will help in reducing the power deficit and carbon intensity of the southern grid. The project activity is less emission intensive as compared to the common coal based power generation and average fuel mix in the national grid. Having conducted the site visit, the verification team confirms that the project is located at Industrial Development Area, Peddapuram, near Samalkot in East Godavari district, Andhra Pradesh, India.

The technical specifications of the project activity equipments are verified from the nameplates of the installed equipments during the site visit. The equipment wise details are as under:

Sr. No.	Equipment	Specification
1	Gas Turbine Generator (GTG)	Two (2) nos. Alstom Power make (Type - GT13E2) heavy duty industrial gas turbines equipped with the lean premix dry low NOx EV burners; holds 21-stages compressor and 5-stage turbine blades; Capacity- 2 x 152.438 MW at site conditions of 29°C, 70% RH and 50Hz frequency.
2	Heat Recovery Steam Generator (HRSG)	Make -ALSTOM Power, Triple Pressure Capacity: High Pressure (HP)/ Intermediate Pressure (IP)/light Pressure (LP) Flow: 56.95/ 11.1/ 9.7 kg/s Temp: 508.3/ 506/ 151.2 deg C Pressure: 96.35/ 24.6/ 4.8 bar
3	Steam Turbine Generator (STG)	ALSTOM Power, Triple Pressure Capacity- 164.235MW at site conditions of 29 deg C, 70% Relative Humidity (RH) and 50Hz frequency.

Project title: Natural Gas based grid connected power project at Peddapuram, A.P. by Gautami Power Limited

UNFCCC ref number: 4828

Registration Date: 09/09/2011

Crediting Period: 09/09/2011 to 08/09/2021 (fixed)

Monitoring Period: 09/09/2011 to 10/03/2012

Project Participants: GVK Gautami Power Limited, Hyderabad

Methodologies used: AM0029 Version 03

Location of the Project: Industrial Development Area, Samalkot, near the port town Kakinada, Andhra Pradesh

Geo coordinates: Longitude: 17°03'03" N, Latitude: 82°07'04"E



UNFCCC view page: <https://cdm.unfccc.int/Projects/DB/SIRIM1305857412.14/view>

Post Registration Changes

A request for approval of permanent change from the registered monitoring plan as described in the registered PDD has been submitted prior to the submission of the request for issuance and approved by the Board (PRC-4828-001) on 17/10/2013*.

- 1) The information of the gas supply arrangement and data sources for quantity & calorific value of natural gas supplied to project activity for power generation is included in section A.4.3.
- 2) $EF_{CO_2, upstream, LNG}$ (Emission factor for upstream CO_2 emissions due to fossil fuel combustion / electricity consumption associated with the liquefaction, transportation, re-gasification and compression of LNG into a natural gas transmission or distribution system has been included in section B.6.2
- 3) For the monitoring parameter $EG_{PJ,y}$, the details of the measuring points and meter location is explained clearly. The revised PDD now clearly shows that there are two transmission lines evacuating power from project activity, 1 main meter and 1 check meter is installed at each transmission line. The net electricity exported from the project activity will be the summation of the net electricity supplied by Line 1 & line 2 and measured by the main meters installed, by APEPDCL – Andhra Pradesh Eastern Power Distribution Company Limited, on each line the same was confirmed by the validation team from the monthly joint meter reading report . The arrangement of energy meters presented in the revised PDD is correct and same is in line with actual practice at site. The measurement unit of electricity $EG_{PJ,y}$ in the revised PDD has been changed to MWh which is in line with monitoring methodology. The calibration frequency of the energy meters has been changed from six monthly to annual.
- 4) For monitoring parameter FC_{NG} , the description on location of monitoring equipment is improved. It has now been included in the revised PDD that there are two gas metering lines (Loop A & Loop B) at the gas supply terminal of GAIL (Gas transporter). Each line is equipped with an ultrasonic gas flow meter of Daniel make owned by the gas supplier GAIL. The quantity of the gas supplied to the project activity will be the sum of the reading of Loop A & Loop B. The present arrangement was verified by the verification team during the physical site visit. The revised PDD also states that, quantity of the natural gas supplied to the project activity will be cross checked with the readings of the mass flow meters inbuilt into each Gas turbine. The DCS system measures the mass flow, LHV & density of gas and gives the computed quantity of gas in m^3 . The quantity of gas supplied to project activity is measured at supplier ends as well as project end and the higher value among the two will be used for calculating project emissions, for a conservative value.
- 5) For monitoring parameter NCV_{NG} , the description of the QA/QC procedures have been revised. The crosschecking mechanism for the NCV of the gas supplied to project activity,

* <http://cdm.unfccc.int/PRCContainer/DB/prcp491309224/view>



not being a requirement of the methodology, is removed from the revised PDD. The same is acceptable since the applicable monitoring methodology AM0029 version 03 does not mandate the crosschecking of this parameter. The source of the data will be the fortnightly or daily joint ticket signed jointly by the Project participant and the gas supplier GAIL. The unit of NCV has been revised to GJ/m³ which is in line with the requirement of monitoring methodology.

- 6) Parameters $EF_{BL,CO_2,y}$ (Baseline CO₂ emission factor), $EF_{BL,upstream,CH_4}$ (Emission factor for upstream fugitive methane emissions), $EF_{CO_2,NG,y}$ (Emission factor of natural gas) also have been included as monitoring parameters in the revised PDD. The monitoring methodology requires these parameters to be monitored.
- 7) In the revised PDD the parameters Quantity of LNG (FC_{LNG}), net calorific value of LNG consumed in the project activity (NCV_{LNG}) also have been included as monitoring parameters in section B.7.1.
- 8) The oxidation factor of natural gas $OXID_{NG}$ also is added to the list of monitoring parameters in section B.7.1. This is in line with the methodology table of monitored parameters which includes this parameter.

1.4. Verification Team

The assessment team and internal technical reviewer team consist of the following personnel:

FUNCTION	NAME	TA 1.1	TASK PERFORMED*
Team Leader	Mr. Sanjay Patankar	<input type="checkbox"/>	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input checked="" type="checkbox"/> RI <input type="checkbox"/> TR
Team Member	Mr. Prabhavtar Singh	<input type="checkbox"/>	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR
Technical Specialist	Mr. Sadashiv Bhat	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR
Internal Technical Reviewer (ITR)	Mr. Bhavesh Prajapati	<input checked="" type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input checked="" type="checkbox"/> TR

*DR = Document Review; SV = Site Visit; RI = Report issuance; TR = Internal Technical Review

2. METHODOLOGY

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a verification protocol was customized for the project, according to the version 05.0 of the Clean Development Mechanism Validation and Verification Standard, issued by CDM Executive Board after its 75th meeting on 04/10/2013 /9/. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet;



- It ensures a transparent verification process where the verifier will document how a particular requirement has been verified and the result of the verification.

The completed verification protocol is enclosed in Appendix A to this report.

2.1. Review of Documents

The assessment of the project documentation provided by the project participant is based upon both quantitative and qualitative information on emission reductions. Quantitative information comprises the reported numbers in the monitoring report (MR) version 05 dated 03/05/2014 /6/ and emission reduction calculation spreadsheet /7/. Qualitative information comprises information on internal management controls, calculation procedures, and procedures for transfer of data, frequency of emissions reports, and review and internal audit of calculations.

The monitoring report version 01 submitted by the project participant was also web hosted on the UNFCCC-CDM web site on 09/05/2012 and thus, was available in the public domain.

In addition to the monitoring documentation provided by the project participants, the DOE reviews:

- The approved revised PDD, and the corresponding validation opinion /2//4/;
- The validation report/3/;
- The applied monitoring methodology /8/;
- Other information and references relevant to the project activity's resulting emission reductions (e.g. IPCC reports, laboratory analysis or national regulations)

2.2. Follow-up Interviews

On 12/07/2012 & 13/07/2012, Bureau Veritas Certification performed a site visit and interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of GVK Gautami Power Limited, Hyderabad and General Carbon were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
GVK Gautami Power Limited, Hyderabad (the Project Owner)	<ul style="list-style-type: none"> ➤ Project Design and implementation ➤ Technical equipment, calibration and operation ➤ Monitoring Plan and management procedures ➤ Monitoring data ➤ Data uncertainty and residual risks (QA/QC) ➤ GHG Calculation ➤ Environmental Impacts ➤ Compliance with National Laws and Regulations
General Carbon (the Consultant)	<ul style="list-style-type: none"> ➤ Monitoring Plan ➤ Monitored data and Monitoring Report ➤ GHG Calculations



2.3. Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification is to resolve issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions prior to Bureau Veritas Certification's positive conclusion on the GHG emission reduction calculation.

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

A Corrective Action Request (CAR) is raised, if one of the following situations occurs:

- (a) Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- (b) Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- (c) Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- (d) Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

A Clarification Request (CL) is raised, if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

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

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

2.4. Internal Technical Review

The verification report underwent an Internal Technical Review (ITR) before requesting issuance of CERs for the project activity.

The ITR is an independent process performed to examine thoroughly that the process of verification has been carried out in conformance with the requirements of the verification scheme as well as internal Bureau Veritas Certification procedures.

The Team Leader provides a copy of the verification report to the reviewer, including any necessary verification documentation. The reviewer reviews the submitted documentation for



conformance with the verification scheme. This will be a comprehensive review of all documentation generated during the verification process.

When performing an Internal Technical Review, the reviewer ensures that:

- The verification activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.
- The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs, CLs and FARs during the verification exercise, review of sample documents.

The reviewer may raise Clarification Requests to the verification team and discusses these matters with Team Leader.

After the agreement of the responses on the Clarification Requests from the verification team as well as the PP(s), the finalized verification report is accepted for further processing such as uploading via the UNFCCC interface.

3. VERIFICATION CONCLUSIONS

In the following sections, the conclusions of the verification are stated.

The findings from the desk review of the original monitoring documents and the findings from interviews during the follow up visit are described in the Verification Protocol in Appendix A.

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in 10 CARs.

The CARs were closed based on adequate responses from the Project Participant(s) which meet the applicable requirements. They have been reassessed before their formal acceptance and closure.

The number between brackets at the end of each section corresponds to the VVS paragraph.

3.1. Remaining issues from validation or previous verification (213)

This is the 1st verification and all the CARs and CLs raised were successfully closed during the validation stage no remaining issues were left.

3.2. Compliance of the project implementation with the registered project design document (228)

Bureau Veritas Certification performed a site visit on 12/07/2012 & 13/07/2012 in-order to verify the compliance of the project implementation with the approved revised PDD /2/. The project is already implemented and commissioned and has been in operation during the monitoring



period. The electricity generated from the project activity is supplied to Southern Grid according to the signed Power Purchase Agreement (PPA) /10/. This was verified from the "Consent for commercial operation date by Andhra Pradesh Power coordination committee" /11/, vide its letter no. CE/IPC/112/F.KEOPL COD/D.No.76/09 dated 16/07/2009. The verification team observed that the "Andhra Pradesh Power Coordination Committee" (APPCC) is a wing in APTransco, which deals with Independent Power Producers (IPP) and related DISCOMs (Distribution Companies) for the purchase of power. During the site visit, the verification team observed that all physical features of the project activity described in approved revised PDD /2/ are in place and that the project participant have operated the project activity as per approved revised PDD.

Having conducted the site visit and based on the review of the commissioning certificate/11/, the verification team confirms that there is only single site for the project activity and there was no phase wise implementation of the project activity.

No changes to the project design have been identified during this verification. The implementation and operation of the project activity have been conducted in accordance with the description contained in the approved revised PDD.

Metering System

The details of metering system considered for monitoring of project activity are detailed below.

ELECTRICITY METERS			
Line 1 Main meter	07615227	Used during 09/09/2011 to 06/01/2012	To monitor Net electricity supplied by the project plant to grid.
	07615234	Used during 06/01/2012 to 10/03/2012	
Line 2 Main meter	09451715	Used during 09/09/2011 to 06/01/2012	
	09451716	Used during 06/01/2012 to 10/03/2012	
Check meter 1 & 2 is being managed by APTRANSCO and not under Project Participant scope			

GAS FLOW METERS & CHROMATOGRAPH			
Gas flow meter - at GAIL - Line A	FB-S600/17418241	The meters are located at the gas skid of GAIL	To monitor Total volume of natural gas combusted in the project plant
Gas flow meter - at GAIL - Line B	FB-S600/17418252		To monitor Net calorific value of natural gas
Gas Chromatograph	09007289		
Gas flow Check meter	The mass flow meter is installed at the turbine and measures the mass flow of the natural gas		To monitor Total volume of natural gas



	combusted by the gas turbine. The data is recorded by the DCS system	combusted in the project plant
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Management and Operation

The PP has operated the Project as per the registered PDD. The monitoring organization has been set up and all monitoring staffs have been trained. Meter reading records of all the meters are based on continuous measurement and monthly recording by the PP. The grid company issues the Joint Meter Report to the PP every month to confirm the electricity exported to and imported from the grid.

✌ Corresponding to the paragraph 228 of VVS version 05.0, Bureau Veritas Certification can confirm that:

- The implementation of the Project is consistent with the approved revised PDD.
- The Project is operated as per the approved revised PDD by the PP for the current monitoring period.

3.3. Compliance of the monitoring plan with the monitoring methodology including applicable tool(s) (232)

The verification team has verified the monitoring plan, including the data and parameters required to be monitored, measurement procedures, monitoring frequency and QC/QA procedures as described in the approved revised PDD.

✌ Corresponding to the paragraph 232 of VVS version 05.0, Bureau Veritas Certification can confirm that the monitoring plan is in accordance with the approved methodology including applicable tool(s) applied by the Project.

3.4. Compliance of monitoring activities with the monitoring plan (235-236)

A request for approval of permanent change in the monitoring plan from the registered monitoring plan was submitted prior to submitting the request for issuance and the same is approved by the Board on 17/10/2013.

Monitoring has been carried out in accordance with the monitoring plan contained in the approved revised PDD.

Parameters and information flow

The parameters required by the monitoring plan and how Bureau Veritas Certification has verified the information flow (from data generation, aggregation, to recording, calculation and reporting) for these parameters including the values in the monitoring report are described below:

**Parameters monitored:**

Sr. No.	Description of parameter	Value of the parameter	Measurement frequency and Source of Data	Verification justification
1	Quantity of Natural Gas consumed in the project activity FC_{NG} ,	263,014,329 m ³	Measurement Continuously (online) monitored with Daily recording Source: Conservatively assumed based on the higher value among the daily gas consumption recorded by Supplier's Gas flow meter reading at project boundary and the PP's cross check meter installed at Turbine.	The emission reduction spreadsheet /7/ provided to verification team enlists the daily natural gas consumption recorded by GAIL flow meter sourced from fortnightly joint tickets /15/ provided by GAIL. And the daily natural gas consumption as recorded by the DCS system from the flow meter installed in the Turbine. PP has conservatively selected the higher of the two daily readings i.e GAIL data and the DCS data. Verification team has checked all the values from GAIL fortnightly joint report and the data extracted from the DCS. Hence the PP has conservatively and correctly considered the higher value of volume of natural gas combusted in the project plant.
2	Net calorific value of Natural Gas , NCV_{NG}	8795.63 kcal/m ³ = 0.0368 GJ/SCM (From 09/09/2011 to 10/03/2012)	Source: From fortnightly Joint Ticket signed with gas supplier, readings of Gas supplier's meter,	The value of NCV_{NG} is obtained by calculating the weighted average NCV from the fortnightly joint tickets issued by GAIL /15/



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Sr. No.	Description of parameter	Value of the parameter	Measurement frequency and Source of Data	Verification justification
			weighted average value used.	(Fuel supplier) Verification team has verified the all values of NCV of natural gas supplied to project activity from the Joint ticket report provided. Hence, this is computed correctly and is appropriate and hence accepted by the verification team.
3	Net Calorific Value of LNG, NCV_{LNG}	0 GJ/ m ³	Gas supplier's invoices raised based on the gas supplier's flow meters readings within project boundary.	During the site visit verification team verified the invoices of the gas supplied to project activity and verified that no LNG was sourced to supply it to project activity. Hence it is confirmed that no LNG was consumed by project activity during the monitoring period.
4	Electricity exported to the grid by the project activity, EG_{PJ}	1,251,220.720 MWh	Source: JMR between PP and APTRANSCO /12/ From the electronic meters installed at the grid inter-connection point at the project site. This is also termed as "Main" meter individually installed on Line-1 and Line-	The verification team also verified the main meter readings with check meters installed at each feeder and found the values appropriate. The data is also cross verified with the invoices raised by the PP to the Andhra Pradesh Power Coordination



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Sr. No.	Description of parameter	Value of the parameter	Measurement frequency and Source of Data	Verification justification
			2.	Committee /13/ (a wing of APTRANSCO). The verification team noted that the project participant has selected the lower of the two values i.e. as per meter readings and as per Invoices. This is a conservative approach adopted by PP and hence the verification team has accepted the value of Net electricity supplied by the project plant to grid taken by PP.
5	Quantity of LNG consumed in project activity, FC_{LNG} ,	0 m^3	Source: Gas supplier's invoices raised based on the gas supplier's flow meters readings within project boundary.	During the site visit verification team verified the invoices of the gas supplied to project activity and verified that no LNG was sourced to supply it to project activity. Hence it is confirmed that no LNG was consumed by project activity during the monitoring period.
6	Oxidation Factor of NG, $Oxid_{NG}$	1.0	IPCC Guidelines for National Greenhouse Gas Inventories	IPCC default value used as mentioned in revised approved PDD. The verification team found the value correct. The verification team has accepted this value as it has been sourced from the latest IPCC



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Sr. No.	Description of parameter	Value of the parameter	Measurement frequency and Source of Data	Verification justification
				source available during current monitoring period.
7	CO ₂ emission coefficient, COEF _{NG,y}	0.0020 tCO ₂ /m ³ (From 09/09/2011 to 10/03/2012)	Calculated	<p>Calculated as $COEF_f = NCV_f * EF_{CO_2, f} * OXID_f$</p> <p>Where, NCV_f is as per parameter 2 above. Cross checking for this is described above in Parameter 2.</p> <p>EF_{CO₂,f} and OXID_{NG} are determined at registration and not monitored during the monitoring period, including default values and factors, hence, Cross checking not applicable. The verification team confirms that the calculations are correct.</p>
8	Emission factor for upstream fugitive methane emissions occurring in the absence of the project activity in terms of ton of methane per MWh, EF _{BL, Upstream,CH4}	1.055 tCH ₄ /MWh (22.159 tCO ₂ /MWh)	Calculated	<p>The calculation requires following parameters:</p> <p>FF_{j,k}: Quantity of fuel type combusted in power plant included in j build margin</p> <p>EF_{k,upstream, CH4} : Taken from Table 2 of</p>



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Sr. No.	Description of parameter	Value of the parameter	Measurement frequency and Source of Data	Verification justification
				<p>AM0029, version 03</p> <p>EG_j : Electricity generation in the plant included in the build j margin</p> <p>The data source for these parameters is computed consistently with the Build Margin emission factor based on latest available information from Central Electricity Authority, Ministry of Power, Government of India, Version 7 - this being a government published data, found most authentic, hence, found appropriate and correct and accepted by the verification team.</p>
9	Project emission due to combustion of fuel, PE_y	543,001 tCO ₂	Calculated	<p>As this is calculated parameter.</p> $PE_y = \sum_f FC_{f,y} * COEF_{f,y}$ <p>Where, ^f</p> <p>$FC_{f,y}$ is as described above parameter -1 and</p> <p>$COEF_{f,y}$ is described as parameter 6 above. The verification team has checked the calculations and found to be correct and</p>



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Sr. No.	Description of parameter	Value of the parameter	Measurement frequency and Source of Data	Verification justification
				hence accepted the value of project emissions.
10	Baseline CO ₂ emission factor – build margin of southern grid, EF _{BL,CO2,y}	733.89 tCO ₂ /GWh	Calculated as per the monitoring methodology AM0029	<p>This is calculated parameter as per monitoring methodology AM0029, version 03. Based on CO₂ Baseline database for the Indian power sector, version 7 /18/ (latest available)</p> <p>The Option A – Build Margin found lowest emission factor among three options given by the baseline methodology. The database is Government of India's official publication based on the "Tool to calculate the emission factor for an electricity system". Hence, found most authentic.</p>
11	Emission Factor of Natural Gas, EF _{CO2,NG}	56,100 kgCO ₂ e/TJ (0.0561 tCO ₂ /GJ)	Table 1.4, Chapter 1, Volume 2, 2006 IPCC Guidelines for National Greenhouse Gas Inventories – latest available	The value of the emission factor of natural gas has been sourced from the latest version of IPCC Guidelines available during the current monitoring period and hence accepted by the verification team having checked the correctness of value



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Sr. No.	Description of parameter	Value of the parameter	Measurement frequency and Source of Data	Verification justification
				with the source of information.

Parameters determined ex-ante:

Sr. No.	Description of parameter	Value of the parameter	Source of Data	Verification justification
1	Emission factor for upstream fugitive methane emissions of natural gas from production, transportation, distribution and in the case of LNG, liquefaction, transportation, re-gasification and compression into a transmission or distribution system, in tCH ₄ per PJ fuel supplied to final consumers EF _{NG,upstream,CH4}	296 tCH ₄ /PJ (0.000296 tCH ₄ /GJ)	Table-2, AM0029 Version 03	The value is provided by the applied monitoring methodology and has been mentioned correctly in the approved revised monitoring plan Cross checking: Not Applicable
2	Oxidation Factor of Coal, Oxid _{Coal}	1.0 Unit less factor	Table 1.4, Chapter 1, Volume 2, 2006 IPCC Guidelines for National Greenhouse Gas Inventories	The value is provided by the applied monitoring methodology and has been mentioned correctly in the approved revised monitoring plan. Cross checking: Not Applicable



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Sr. No.	Description of parameter	Value of the parameter	Source of Data	Verification justification
3	Net Calorific Value of Coal , NCV_{Coal}	3,625 kCal/Kg	GCV and conversion factor (GCV to NCV) sourced from "CO ₂ Baseline Database of the Indian Power Sector, version 5.0, issued by Central Electricity Authority, Ministry of Power, Government of India"	The value is fixed ex ante in the revised approved PDD including revised monitoring plan. Cross checking: Not Applicable.
4	Emission factor for upstream CO ₂ emissions due to fossil fuel combustion/electricity consumption associated with the liquefaction, transportation, re-gasification and compression of LNG into a natural gas transmission or distribution system $EF_{CO_2, upstream, LNG}$	6 tCO ₂ /TJ	page 10 of the approved methodology AM0029 version 3	The value is provided by the applied monitoring methodology . Cross checking: Not Applicable.



Corresponding to the paragraph 235 and 236 of VVS version 05.0, Bureau Veritas Certification can confirm that:

- The monitoring has been carried out in accordance with the monitoring plan contained in the approved revised PDD.
- All parameters required by the monitoring plan have been sufficiently monitored and correctly listed. The monitored data for required parameters have been verified by checking the whole information flow.



3.5. Compliance with the calibration frequency requirements for measuring instruments (243)

The calibration was conducted in accordance with methodology and at the frequency as specified by the revised monitoring plan included in the approved revised PDD. During this monitoring period, the installed measuring instruments have been operating well and were duly calibrated.

The calibration records are shown below.

Electricity Meters (Prior to replacement on 06/01/2012):

Meter Location	Serial No.	Accuracy	Calibration prior to start of monitoring period	Calibration after replacement of meter during monitoring period
Line 1 Main meter	07615227	0.2s	08/04/2011	31/05/2012
Line 2 Main meter	09451715	0.2s	08/04/2011	31/05/2012

Electricity Meters (After replacement on 06/01/2012):

Meter Location	Serial No.	Accuracy	Calibration prior to installation during monitoring period	Calibration after the end date of monitoring period
Line 1 Main meter	07615234	0.2s	18/10/2011	04/02/2013
Line 2 Main meter	09451716	0.2s	18/10/2011	04/02/2013

Based on the above information, the verification team confirms that the calibrated electricity meters are used for recording and monitoring of electricity during the current monitoring period (09/09/2011 to 10/03/2012). The test results are found within the specified limits; hence, measurement carried out through these meters is correct and free of any material misstatement.

As described in the approved revised PDD and as per PPA condition, the check meters are installed by the APTRANSCO. The PP has no control on it. Hence, calibration on these meters



could not be performed by PP. However, cross checking of electricity generated is identified by means of invoices raised by the PP on the Andhra Pradesh Power Coordination Committee (a wing of APTRANSCO) /13/. The verification team finds this as appropriate and well justified for the calculation of baseline emissions and hence emission reduction.

Gas Meters (Main Meters of Gas Supplier):

Meter Location	Serial No.	Calibration prior to start of monitoring period	Periodic Calibration	Periodic Calibration	Calibration after the end date of monitoring period
Gail- Line A	FB-S600/17418241	18/07/2011	21/10/2011	17/01/2012	19/04/2014
Gail- Line B	FB-S600/17418252	18/07/2011	21/10/2011	17/01/2012	19/04/2014

Online Gas Chromatogram of Gas supplier (GAIL):

Meter Location	Serial No.	Calibration prior to start of monitoring period	Periodic Calibration	Calibration after the end date of monitoring period
Gas chromatogram at GAIL	9007289	26/08/2011	27/09/2011, 21/10/2011, 21/11/2011, 23/12/2011, 16/01/2012, 16/02/2012, 20/03/2012	23/12/2011

As described above, the project participant has provided calibration certificates of all the monitoring instruments tabulated above. Having reviewed all the calibration certificates, the verification team confirms that the calibration details of all the instruments as provided above are correct. The errors identified are within permissible limits for the instruments/measuring equipment by the calibration/testing process. Hence, the measurement performed by these equipments can be confirmed as correct.

Based on the above assessment, the verification team confirms that calibration was conducted as per methodology and at the frequency as specified by the revised monitoring plan included in revised approved PDD.



Corresponding to the paragraph 243 of VVS version 05.0, Bureau Veritas Certification can confirm that:

- The calibration is conducted at the frequency as specified by the methodology and the monitoring plan contained in the approved revised PDD.

3.6. Assessment of data and calculation of emission reductions (246)

A complete set of data for the specified monitoring period is available.

The project participant has provided the cross checking of the values of data/parameters, wherever possible and available. The verification team has verified and cross checked the values of each data/parameter. The data pertaining to the monitored parameters are maintained in the respective records identified in the approved revised PDD. All the data are in compliance with that stated in the Monitoring Report/6/.

The verification team was provided with spreadsheet of emission reduction calculations /7/. As per the methodology AM0029 Version 03 (Baseline Methodology for Grid Connected electricity generation plants using natural gas) and the registered PDD, the emission reductions for the Project are calculated as the baseline emissions minus the project emissions and leakage. Hence the emission reduction is determined by the following formula:

$$ER_y = BE_y - PE_y - L_y$$

Where,

ER_y : Emission reductions

BE_y : Baseline emissions

PE_y : Project emissions

L_y : Emissions due to leakage

Baseline emissions

$$BE_y = EG_{PJ,y} \cdot EF_{BL,CO2,y}$$

Where,

$EG_{PJ,y}$ Electricity generated in the project plant

$EF_{BL,CO2,y}$ The Build Margin emission factor of Southern Grid

BE_y Emissions in the Baseline Scenario

The verification team has cross-checked the values in the JMR /12/ with invoices raised by the PP to APTRANSCO /13/ for the period from 10/09/2011 to 10/03/2012 and noted that the values are consistent and the same values are used for emission reductions calculation.

The build margin is calculated according to "Tool to calculate emission factor for an electricity system" version 3.0, the data for calculation is sources from CEA CO2 database version 7.0;

Project emissions

$$PE_y = \sum_f FC_{f,y} * COEF_{f,y}$$

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Where:

- $FC_{f,y}$: = Is the total volume of natural gas or other fuel 'f' combusted in the project plant or other startup fuel (m³ or similar) in year(s) y
- $COEF_{f,y}$: = Is the CO₂ emission coefficient (tCO₂/m³ or similar) in year(s) for each fuel and is obtained as:

$$COEF_{f,y} = \Sigma NCV_y \cdot EF_{CO2f,f,y} \cdot OXID_f \quad (1a)$$

Where:

- $NCV_{f,y}$: = Is the net calorific value (energy content) per volume unit of natural gas in year y (GJ/m³) as determined from the fuel supplier, wherever possible, otherwise from local or national data
- $EF_{CO2f,f,y}$: = Is the CO₂ emission factor per unit of energy of natural gas in year y (tCO₂/GJ) as determined from the fuel supplier, wherever possible, otherwise from local or national data
- $OXID_f$: = Is the oxidation factor of natural gas

Based on the above the **PE_y** equations (Emissions in the Project Scenario) for the monitoring period is: **111,605 tCO₂**

LEAKAGE

$$LE_y = LE_{CH4,y} + LE_{LNG,CO2,y} \quad (1)$$

$$LE_{CH4,y} = [FC_y \cdot NCV_y \cdot EF_{NG,upstream,CH4} - EG_{PJ,y} \cdot EF_{BL,upstream,CH4}] \cdot GWP_{CH4}$$

$$LE_{LNG,CO2,y} = FC_y \cdot EF_{CO2,upstream,LNG}$$

Where:

- LE_y : = Leakage emissions during the year y in tCO₂e
- $LE_{CH4,y}$: = Leakage emissions due to fugitive upstream CH₄ emissions in the year y in t CO₂e
- $LE_{LNG,CO2,y}$: = Leakage emissions due to fossil fuel combustion/electricity consumption associated with the liquefaction, transportation, re-gasification and compression of LNG into a natural gas transmission or distribution system during the year y in t CO₂e

FC_y : = Quantity of natural gas combusted in the project plant during the year y in m³

$NCV_{NG,y}$: = Average net calorific value of the natural gas combusted during the year y in GJ/m³

$EF_{NG,upstream,CH4}$: = Emission factor for upstream fugitive methane emissions of natural gas from production, transportation, distribution, and, in the case of LNG, liquefaction, transportation, re-gasification and compression into a transmission or distribution system, in t CH₄ per GJ fuel supplied to final consumers

$EG_{PJ,y}$: = Electricity generation in the project plant during the year in MWh

$EF_{BL,upstream,CH4}$: = Emission factor for upstream fugitive methane emissions occurring in the absence of the project activity in t CH₄ per MWh electricity generation in the project plant, as defined below

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- GWP_{CH_4} : = Global warming potential of methane valid for the relevant commitment period
- FC_y : = Quantity of natural gas combusted in the project plant during the year y in m^3
- $EF_{CO_2, upstream, LNG}$: = Emission factor for upstream CO_2 emissions due to fossil fuel combustion/electricity consumption associated with the liquefaction, transportation, re-gasification and compression of LNG into a natural gas transmission or distribution system

Emission reductions

The emission reductions during the monitoring period from 09/09/2011 to 10/03/2012 are calculated as:

$$ER_y = BE_y - PE_y - L_y = 918,258 - 543,001 - 32,439 = 342,818 \text{ tCO}_2\text{e}$$

Comparison of ERs

The annual estimated emission reductions are 1,293,422 tCO₂e as per the registered PDD. The actual operation days of the Project in the monitoring period are 184 days. The corresponding estimate in the monitoring period are 652026.43 (=129,422*184/365) tCO₂e. The actual emission reductions are 47.42% less than the estimated value in the monitoring period.

The variation is due to lower PLF during the monitoring period and due to decrease in the Build margin emission factor from 817.9 tCO₂/GWh to 733.89 tCO₂/GWh it is deemed to be reasonable.



Corresponding to the paragraph 246 of VVS version 05.0, Bureau Veritas Certification can confirm that:

- Data used for the determination of the emission reductions are available and monitored in accordance with the monitoring plan contained in the approved revised PDD.
- Information and data provided in the monitoring report have been cross-checked with other sources such as plant logbooks, inventories, purchase records, laboratory analysis.
- Appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed.
- Assumptions, emission factors and default values that were applied in the calculations have been justified.



4. VERIFICATION OPINION

Bureau Veritas Certification has performed the 1st periodic verification of Natural Gas based grid connected power project at Peddapuram, A.P. by Gautami Power Limited, CDM Registration Reference Number 4828, which is located in Industrial Development Area, Samalkot, near the port town Kakinada, Andhra Pradesh, and applying the methodology AM0029 Version 03. The verification was performed based on the requirements set by the CDM and relevant guidance provided by CMP and the CDM Executive Board.

The verification consisted of the following three phases: i) desk review of the project design, the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of GVK Gautami Power Limited, Hyderabad is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions of the project on the basis set out within the monitoring plan contained in the approved revised PDD. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the project, is the responsibility of the management of the project.

Bureau Veritas Certification has verified the project Monitoring Report version 05 dated 03/05/2014 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as described in the validated and approved revised project design documents. Installed equipments being essential for generating emission reductions run reliably and are calibrated appropriately. The monitoring system is in place and the Project is generating GHG emission reductions as a CDM project.

Bureau Veritas Certification can confirm that the GHG emission reductions are calculated without material misstatements. Our opinion relates to the projects' GHG emissions and resulting GHG emission reductions reported and related to the validated and registered project baseline, approved revised monitoring plan and its associated documents. Based on the evidence and information that are considered necessary to guarantee that GHG emission reductions are appropriately calculated, Bureau Veritas Certification confirms the following statement:

Reporting period:	09/09/2011 to 10/03/2012	
Baseline emissions:	918,258	t CO ₂ equivalents
Project emissions:	543,001	t CO ₂ equivalents
Leakage emissions:	32,439	t CO ₂ equivalents
Emission Reductions:	342,818	t CO ₂ equivalents

Mr. Bhavesh Prajapati
Internal Technical Reviewer
05/05/2014

Mr. Sanjay Patankar
Team Leader
05/05/2014



5. REFERENCES

Documents reviewed:

- /1/ Registered PDD version 03.1 dated 22/08/2011, UNFCCC ref no.4828
- /2/ Revised PDD Version 06 dated 07/09/2013
- /3/ Validation Report No. SQAS-CDM-ES12880011 revision 04, dated 09/09/2011
- /4/ Assessment Opinion on the Changes, Report No. INDIA-PRC/497.49/2012 dated 10/09/2013
- /5/ Monitoring Report version 01, dated 20/04/2012
- /6/ Monitoring Report version 05, dated 03/05/2014
- /7/ ER Calculation Spreadsheet
- /8/ AM0029 Version 03
- /9/ Validation and Verification Standard Version 5.0 dated 04/10/2013
- /10/ Signed Power Purchase Agreement (PPA) dated 31/03/1997
- /11/ Consent for Commercial Operation Date by Andhra Pradesh Power Coordination Committee, date 16/07/2009.
- /12/ Monthly electricity Joint Meter Reading certificate issued by the APTRANSCO for period 10/09/2011 to 10/03/2012
- /13/ Invoice of the electricity sold to APTRANSCO for period 10/09/2011 to 10/03/2012
- /14/ Calibration Certificates of the energy meters
- /15/ Fortnightly joint ticket with Daily summary for quantity & NCV of natural gas supplied to Project activity for the period 09/09/2011 to 10/03/2012
- /16/ Calibration certificate of the GAIL flow meters
- /17/ Calibration certificate of the GAIL chromatograph
- /18/ CEA CO2 database version 07, dated Jan 2012

Persons interviewed:

GVK Gautami Power Limited, Hyderabad

- /1/ Mr. Raja Roy AGM (Electrical Maintenance) GVK
- /2/ Mr. Alok Kumar Shift In charge GVK
- /3/ Mr. Sai Babu Head- Instrumentation Section GVK
- /4/ Mr. Subba Reddy Control Room Engineer GVK

General Carbon

- /5/ Mr. Pravin Jadhav Assistant Vice President, General Carbon

Gas Authority of India Limited

- /6/ Mr. K. Srinivas Senior Technician GAIL



6. CURRICULA VITAE OF THE DOE'S VERIFICATION TEAM MEMBERS

Mr. Sanjay Patankar	Bureau Veritas Certification, India	<p>Team Leader, Climate Change Lead Verifier,</p> <p>Educational qualifications: B.E. (Mech.) M.E. (Mech.)</p> <p>He has over 20 years of experience in engineering manufacturing industry covering various functions like enterprise management, product design, engineering, tool & die design, improvements in the production shop, quality assurance & control and systems planning and implementation, including ISO 9001 based quality management systems. He is working for the last 4 years in Bureau Veritas Certification (India) Pvt. Ltd. as Lead Verifier for CDM and also Lead Auditor for ISO 9001, 14001 and OHSAS 18001 standards/specifications. Has undergone training related to Clean Development Mechanism and is currently involved in validation and verification of CDM project activities.</p>
Mr. Prabhavtar Singh	Bureau Veritas Certification, India	<p>Team Member, Climate Change Verifier.</p> <p>Educational qualifications: B.Tech (Mech.) & MBA Energy & Finance</p> <p>He has over 5 years of experience, including manufacturing industry in functions like Quality, Process validation and QMS and in climate change CDM/VCS consulting. Has worked on various Wind, Hydro, Solar, Biomass, Waste Heat Recovery & Natural Gas based power generation CDM projects. He is a qualified Lead Auditor for ISO 14001. Has undergone training related to Clean Development Mechanism. He is working for the last 2 years in Bureau Veritas Certification (India) Pvt. Ltd. as Verifier- Climate Change</p>



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Mr. Sadashiv Bhat	Bureau Veritas Certification, India	<p>Team Member, Technical Specialist.</p> <p>Holds B.E. degree in Mechanical Engineering. He has over 32 years of work experience in the maintenance operations, quality control, machinery installation, erection, commissioning including the experience in the field of Thermal and Hydro Power Projects.</p>
Mr. Bhavesh Prajapati	Bureau Veritas Certification, India	<p>Technical Reviewer, Climate Change Lead Verifier.</p> <p>He is graduate in the field of Chemical Engineering and post-graduate in Finance (MBA- Finance). He has more than 8 years of Industrial work experience in the field of environment audits, consultancy of HVAC (pharmaceutical industry as well as commercial air conditioning) and utility services and project management of various green field as well as gray field projects. He has undergone lead verifier's training on Clean Development Mechanism. He is involved in the Validation/ Verification projects of CDM and VCS.</p>

APPENDIX A: CDM PROJECT VERIFICATION PROTOCOL

Table 1 Verification requirements based on VVS version 05.0 (EB 75 Annex 05), PS version 05.0 (EB 75 Annex 04), PCP version 03.1 (EB 70 Annex 4), and Guidelines for completing the Monitoring Report Form version 03.2

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Part I Cover Page					
(a) Is the title of the project activity provided?	MR		Yes the title of the project is stated as Natural Gas based grid connected power project at Peddapuram, A.P. by Gautami Power Limited. The same is in line with the registered PDD.	OK	OK
(b) Is the reference number of the project activity provided?	MR		Yes reference number is provided as 4828	OK	OK
(c) Is the version number of the monitoring report indicated?	MR		Yes Version number of the monitoring report is indicated as 03	OK	OK
(d) Is the completion date of the monitoring report provided in DD/MM/YYYY format?	MR		Yes completion date of the monitoring report is provided in DD/MM/YYYY format.	OK	OK
(e) Is the registration date of the project activity provided in DD/MM/YYYY format?	MR		Yes, registration date of the project activity is provided in DD/MM/YYYY format	OK	OK
(f) Are the monitoring period number and duration of this monitoring period (first and last days included in DD/MM/YYYY format) provided?	MR		The duration has been stated as per the requirements – which are “09/09/2011 to 10/03/2012.	Ok	OK
(g) Are project participants indicated?	MR		Yes the name of Project participant is indicated as	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			"GVK Gautami Power Limited, Hyderabad"		
(h) Is the host party(ies) indicated?	MR		Yes, host party is indicated as INDIA.	OK	OK
(i) Are the sectoral scope(s) and applied methodology(ies) indicated?	MR		Yes, the sectoral scope and applied methodology are stated.	OK	OK
(j) Is the estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD indicated?	MR		Yes, the estimated reductions for the monitoring period is provided	OK	OK
(k) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period indicated?	MR		Yes, the actual emission reductions achieved during the current monitoring period is provided.	OK	OK
(l) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012 indicated (if applicable)?	MR		The emission reductions achieved within 31/12/2012 has been indicated in the Monitoring Report.	OK	OK
(m) Are the actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards indicated (if applicable)?	MR		Not Applicable.	OK	OK
Part II Monitoring Report					
A. Description of project activity					
A.1 Purpose and general description of project activity					

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A.1.1 Is the description of the project activity to be presented in this section a brief summary of the detailed description given in the section B.1 Implementation status of the project activity?	MR		Yes, a brief description of the project activity & the implementation status is provided.	OK	OK
A.1.2 Does this description include:					
A.1.2.1 Purpose of the project activity and the measures taken for GHG emission reductions or net anthropogenic GHG removals by sinks?	MR		The purpose of project activity and measures taken are defined in the monitoring report.	OK	OK
A.1.2.2 Brief description of the installed technology and equipments?	MR		The details of the equipment installed are provided.	OK	OK
A.1.2.3 Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.)?	MR		Yes, dates pertaining to the Date of Commercial operation are provided.	OK	OK
A.1.2.4 Total GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period?	MR		The emission reductions achieved during the current monitoring period is provided.	OK	OK
A.2 Location of project activity					
A.2.1 Is the information on the location of the project activity provided, including Host Party(ies), Region/State/Province, City/Town/Community, Physical/Geographical location etc.?	MR		Yes, the information with respect to the location, host party and physical location are provided.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A.3 Parties and project participant(s)					
A.3.1 Is the Party(ies) and project participant(s) involved in the project activity listed in the provided table?	MR		Yes provided.	OK	OK
A.4 Reference of applied methodology					
A.4.1 Is the exact reference (number, title, version) of the methodology(ies) indicated?	MR		Yes, the reference number, title, version and tools are provided in the Monitoring Report.	OK	OK
A.4.2 Is the exact reference (number, title, version) of any tools and other methodologies to which the applied methodology(ies) refers indicated?	MR		Yes the reference of tools is provided.	OK	OK
A.5 Crediting period of project activity					
A.5.1 Are the type, start date and length of the crediting period corresponding to this monitoring period provided?	MR		The type of start date and length of crediting period is provided.	OK	OK
B. Implementation of project activity					
B.1 Description of implemented registered project activity					
B.1.1 Is the description of the installed technology, technical processes and equipments provided, include diagrams where appropriate?	MR PS	191(a)	In section B.1 of MR , the information of the installed technology, technical processes and equipments, include diagrams is not provided	CAR 01	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.1.2 Is the information on the implementation and actual operation of the project activity, including relevant dates (e.g. construction, commissioning, continued operation periods, etc.) provided?	PS	191(b)	Yes, the date of commercial operation of the project activity is provided. And information of continued operation is provided.	OK	OK
B.1.3 Is the description of: (i) the events or situations that occurred during the monitoring period that may impact the applicability of the methodology (ii) how the issues resulting from these events or situations have been addressed provided?	PS	191(c)	There were no events and situation during this monitoring period.	OK	OK
B.1.4 Have the project participants addressed the FARs identified during validation or previous verification(s)?	VVS	213	No, this is the second periodic verification there are no FARs which were open from previous verification.	OK	OK
B.1.5 Have the implementation and operation of the project activity been conducted in accordance with the description contained in the registered PDD?	VVS	226	Yes the implementation and operation of the project activity are in accordance with the description contained in the registered PDD.	OK	OK
B.1.6 Are all physical features of the project activity in the registered PDD in place?	VVS	227	Yes, the physical features of the project activity in the registered PDD are in place.	OK	OK
B.1.7 Have the project participants operated the project activity as per the registered PDD or any approved revised PDD?	VVS	227	Yes, the project participants have operated the project activity as per the registered PDD.	OK	OK
B.1.8 Was an on-site visit conducted?	VVS	227	Yes, physical site visit was conducted on 13/07/2012.	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.1.9 If an on-site visit is not conducted, is the rationale of the decision justified?	VVS	227	Not Applicable.	—	—
B.2 Post registration changes					
B.2.1 Temporary deviations from registered monitoring plan or applied methodology					
B.2.1.1 Is it indicated whether any temporary deviations have been applied during this monitoring period?	MR		There are no temporary deviations applied during the current monitoring period.	OK	OK
B.2.1.2 Is a description of the deviation(s) in accordance with applicable provisions in the Project standard provided?	MR		Not Applicable	-	-
B.2.1.3 Are the reasons for the deviation(s), how it deviates from the monitoring plan and/or applied methodology(ies), the duration for which the deviation(s) is(are) applicable and justification on the conservativeness of the approach included in the description?	MR		Not Applicable	-	-
B.2.1.4 For deviation(s) that require prior approval by the Board, are the date of approval and reference number included in the description?	MR		Not Applicable	-	-
B.2.2 Corrections					

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.2.2.1 Is it indicated whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report?	MR		Not Applicable	-	-
B.2.2.2 In cases where the correction(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and the completion date of the revised PDD provided?	MR		Not Applicable	-	-
B.2.3 Permanent changes from registered monitoring plan or applied methodology					
B.2.3.1 Is it indicated whether any permanent changes from the registered monitoring plan or applied methodologies have been approved during this monitoring period or submitted with this monitoring report?	MR		In section B.2.3 of MR, the information on Permanent changes from the registered monitoring plan approved during this monitoring period are not indicated.	CAR02	OK
B.2.3.2 In cases where the change(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and	MR		Refer CAR raised in section B.2.3.1 above	-	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the completion date of the revised PDD provided?					
B.2.4 Changes to project design of registered project activity					
B.2.4.1 Is it indicated whether any changes to the project design of the project activity have been approved during this monitoring period or submitted with this monitoring report?	MR		Not Applicable	-	-
B.2.4.2 In cases where the change(s) and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval date and reference number provided? Otherwise, are the version number and the completion date of the revised PDD provided?	MR		Not Applicable	-	-
B.2.5 Changes to start date of crediting period					
B.2.5.1 Is it indicated whether any changes to the start date of the crediting period have been approved during this monitoring period?	MR		Not Applicable	-	-
B.2.5.2 In cases where the changes and the revised PDD are approved prior to the submission of this monitoring report for request for issuance, are the approval	MR		Not Applicable	-	-

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
date and reference number provided?					
B.2.6 Types of changes specific to afforestation or reforestation project activity					
B.2.6.1 Is it indicated whether any changes specific to afforestation or reforestation project activities have been applied during this monitoring period based on applicable provisions in the Project standard that do not require prior approval by the Board?	MR		Not Applicable	-	-
B.2.6.2 If changes were applied, are the version number and the completion date of the revised PDD provided?	MR		Not Applicable	-	-
C. Description of monitoring system					
C.1 General requirements					
C.1.1 Have project participants described the monitoring system and provided line diagrams (graphical schemes) showing all relevant monitoring points?	MR PS	193	Section C of MR does not included the measurement system & line diagrams (graphical schemes) showing all relevant monitoring points	CAR 03	OK
C.1.2 Does this description where appropriate include data collection procedures (information flow including data generation, aggregation, recording, calculations and reporting), organizational structure, roles	MR PS	193	Yes	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
and responsibilities of personnel, and emergency procedures for the monitoring system?					
C.1.3 Is the monitoring plan of the project activity in accordance with the applied methodology including applicable tool(s)?	VVS	229	Yes	OK	OK
C.1.4 For monitoring aspects that are not specified in the methodology, particularly in the case of small-scale methodologies (e.g. additional monitoring parameters, monitoring frequency and calibration frequency), are there any issues which may enhance the level of accuracy and completeness of the monitoring plan and should bring to the attention of the Board?	VVS	231	Not applicable	OK	OK
C.1.5 Has the monitoring plan been properly implemented and followed by the project participants?	VVS	234(a)	Yes	OK	OK
C.1.6 Have all parameters stated in the monitoring plan and relevant Board decisions been monitored and updated as applicable, including:	VVS	234(b)		-	-
C.1.6.1 Project emission parameters?	VVS	234(b)	The notations used for the parameter "Quantity of NG consumed in the project activity" is inconsistent with the revised approved PDD.	CAR 04	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
C.1.6.2 Baseline emission parameters?	VVS	234(b)	Yes	OK	OK
C.1.6.3 Leakage parameters?	VVS	234(b)	Yes	OK	OK
C.1.6.4 Management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan?	VVS	234(b)	Yes , the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan	OK	OK
D. Data and parameters					
D.1 Data and parameters fixed ex ante or at renewal of crediting period					
D.1.1 For "Purpose of data", is one of the following options chose: (a) Calculation of baseline emissions or baseline net GHG removals by sinks; (b) Calculation of project emissions or actual net GHG removals by sinks; (c) Calculation of leakage?	MR		Yes	OK	OK
D.1.2 For "Value(s) applied", if applicable, is one table used to report multiple values referring to the same data and parameter? If necessary, are reference(s) to electronic spreadsheets used?	MR		Not applicable	-	-
D.1.3 Is the source of data provide and/or identified?	PS	195(d)	Yes	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.1.4 Is information about appropriate emission factors, IPCC default values and any other reference values that have been used in the calculation of GHG emission reductions or net GHG removals provided?	PS	195(g)	Yes	OK	OK
D.2 Data and parameters monitored					
D.2.1 For “Purpose of data”, is one of the following options chose: (a) Calculation of baseline emissions or baseline net GHG removals by sinks; (b) Calculation of project emissions or actual net GHG removals by sinks; (c) Calculation of leakage?	MR		Yes the purpose of data for each parameter listed in section D.2 of webhosted MR is provided.	OK	OK
D.2.2 For “Value(s) of monitored parameter”, if applicable, is one table used to report multiple values referring to the same data and parameter? If necessary, are reference(s) to electronic spreadsheets used?	MR		Not Applicable	OK	OK
D.2.3 Are the values of the monitored parameter for the purpose of calculating GHG emission reductions or net GHG removals provided? Where data are measured continuously, are they presented using an appropriate time interval? For default values (such as an IPCC value), where it is ex post confirmed, is the most recent value	PS	195(a)	Yes	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
applied?					
D.2.4 Is the equipment used to monitor each parameter described, including details on accuracy class, and calibration information (frequency, date of calibration and validity), if applicable as per monitoring plan?	PS	195(b)	<p>The energy meters with SI No. 7615227, SI No. 9451715 were replaced on 6/01/2012 the calibration certificate of these meters after removal are not provided. The information regarding the replacement of the meters and calibration information of new installed meters is not provided.</p> <p>PP to provide the calibration certificates of the energy meters covering the entire monitoring period .</p>	CAR 05	OK
D.2.5 Is the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan, the applied methodology, the Board guidance, local/national standards, or as per the manufacturer's specification?	VVS	234(c)	Refer CAR raised in D.2.4 above	OK	OK
D.2.6 Is the calibration of those measuring equipments that have an impact on the claimed emission reductions conducted by the project participants at a frequency specified in the applied monitoring methodology and/or the monitoring plan?	VVS	237	Refer CAR raised in D.2.4 above	OK	OK
D.2.7 If, during verification of a certain monitoring period, the calibration has been delayed and the calibration has been implemented after the monitoring period in consideration (i.e. the results of delayed calibration are	VVS	238			

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
available), is the following conservative approach adopted in the calculation of emission reductions:					
D.2.7.1 Applying the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration, if the results of the delayed calibration do not show any errors in the measuring equipment, or if the error is smaller than the maximum permissible error?	VVS	238(a)	Not Applicable	OK	OK
D.2.7.2 Applying the error identified in the delayed calibration test, if the error is beyond the maximum permissible error of the measuring equipment?	VVS	238(b)	Not Applicable	OK	OK
D.2.8 Has the error has been applied:	VVS	239	-	-	-
D.2.8.1 In a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed emission reductions?	VVS	239(a)	Not Applicable	OK	OK
D.2.8.2 For all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.	VVS	239(b)	Not Applicable	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.2.9 In cases where the results of the delayed calibration are not available, or the calibration has not been conducted at the time of verification, prior to finalizing verification, were the project participants requested to conduct the required calibration have the project participants calculated the emission reductions conservatively using the approach mentioned in item "D.2.7" above?	VVS	240	Not Applicable	OK	OK
D.2.10 In cases where it is not possible for the project participants to conduct the calibration at a frequency specified by either the applied methodology, guidance provided by the Board, and/or the registered monitoring plan due to reasons beyond the control of PPs, are the requirements for post registration changes, in section 9.5 of the VVS, followed?	VVS	241	Not Applicable	OK	OK
D.2.11 In cases where neither the monitoring methodology nor the monitoring plan specify any requirements for calibration frequency for measuring equipments, are the equipments calibrated either in accordance with the specifications of the local/national standards, or as per the manufacturer's specification? If neither local/national standards nor the	VVS	242	Not Applicable	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
manufacturer's specification are available, were international standards used?					
D.2.12 Is it described how the parameters are measured/calculated and the measurement and recording frequency?	PS	195(c)	In section D.2.12, the sources of the monitoring parameters $EG_{PJ,y}$, FC_{NG} , NCV_{NG} are not as per the revised approved PDD.	CAR 06	OK
D.2.13 Are monitoring results consistently recorded as per approved frequency?	VVS	234(d)	Yes,	OK	OK
D.2.14 Is the source of data (e.g. logbooks, daily records, surveys, etc.) provide and/or identified?	PS	195(d)	Refer CAR raised in section D.2.12 above	OK	OK
D.2.15 Where relevant is the calculation method of the parameter provided?	PS	195(e)	Yes	OK	OK
D.2.16 Are the QA/QC procedures applied described (if applicable per monitoring plan)?	PS	195(f)	In section D.2, the QA/QC procedures described for the monitoring parameters is not as per the revised Approved PDD.	CAR 07	OK
D.2.17 Have quality assurance and quality control procedures been applied in accordance with the monitoring plan or the revised monitoring plan?	VVS	234(e)	Refer CAR raised in section D.2.16 above	-	-
D.2.18 Is information about appropriate emission factors, IPCC default values and any other reference values that have been used in the calculation of GHG emission reductions or net GHG removals provided?	PS	195(g)	Yes	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.3 Implementation of sampling plan					
D.3.1 Is a description provided on how project participants implemented the sampling efforts and surveys for those data and parameters according to the sampling plan, Include:	MR		The sampling approach has not been applied by the project participants.	OK	OK
D.3.1.1 Description of implemented sampling design?	MR		Not Applicable.	-	-
D.3.1.2 Collected data (electronic spreadsheets may be attached and referenced)?	MR		Not Applicable.	-	-
D.3.1.3 Analysis of the collected data?	MR		Not Applicable.	-	-
D.3.1.4 Demonstration on whether the required confidence/precision has been met?	MR		Not Applicable.	-	-
E. Calculation of emission reductions or GHG removals by sinks					
E.1 Calculation of baseline emissions or baseline net GHG removals by sinks					
E.1.1 Are the sample calculations for all formulae used and calculation of baseline emissions or baseline net GHG removals by sinks provided, applying actual values?	MR PS	197(a)	In section E.1, Sample calculations for all formulae used and calculation of baseline emissions or baseline net GHG removals by sinks provided, applying actual values are not provided	CAR 08 (A)	OK
E.1.2 Are the electronic spreadsheets to present full calculations in the monitoring report	MR		Yes , electronic spreadsheets to present full	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
attached?			calculations in the monitoring report are provided.		
E.2 Calculation of project emissions or actual net GHG removals by sinks					
E.2.1 Are the sample calculations for all formulae used and calculation of project emissions or actual net GHG removals by sinks provided, applying actual values?	MR PS	197(b)	Sample calculations for all formulae used and calculation of project emissions or actual net GHG removals by sinks provided, applying actual values are not provided.	CAR 08 (B)	OK
E.2.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR		Yes , electronic spreadsheets to present full calculations in the monitoring report are provided.	OK	OK
E.3 Calculation of leakage					
E.3.1 Are the sample calculations for all formulae used and calculation of leakage provided, applying actual values?	MR PS	197(c)	Sample calculations for all formulae used and calculation of leakage provided, applying actual values are not provided.	CAR 08 (C)	OK
E.3.2 Are the electronic spreadsheets to present full calculations in the monitoring report attached?	MR		Yes	OK	OK
E.4 Summary of calculation of emission reductions or net anthropogenic GHG removals by sinks					
E.4.1 Are the results of above sections summarized and GHG emission reductions or net anthropogenic GHG removals by	MR PS	197(d)	Yes, the results of above sections are summarized and GHG emissions reductions for the current monitoring	OK	OK

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sinks for this monitoring period presented, using the provided table?			period are presented in the table.		
E.4.2 Is a complete set of data for the specified monitoring period is available?	VVS	245(a)	Yes.	OK	OK
E.4.3 Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis?	VVS	245(b)	For the parameter the $EG_{PJ,y}$, the supporting document for the crosschecking source is not provided.	CAR 09	OK
E.4.4 Have calculations of baseline emissions, and project activity emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document?	VVS	245(c)	Yes	OK	OK
E.4.5 Have any assumptions used in emission calculations been justified?	VVS	245(d)	Yes	OK	OK
E.4.6 Have appropriate emission factors, IPCC default values and other reference values been correctly applied?	VVS	245(e)	Yes	OK	OK
E.5 Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD					
E.5.1 Is a comparison of actual GHG emission reductions or net anthropogenic GHG	MR		Yes , a comparison of actual GHG emission reductions	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
removal of the project activity achieved during this monitoring period with the estimates in the registered PDD provided?	PS	198	of the project activity achieved during this monitoring period with the estimates in the registered PDD is provided		
E.6 Remarks on difference from estimated value in registered PDD					
E.6.1 For any registered CDM project activity, except A/R project activities, have project participants explained the cause of any increase in the actual GHG emission reductions achieved during the current monitoring period (e.g. higher water availability, higher plant load factor, etc.), including all information (i.e. data and/or parameters) that is different from that stated in the registered PDD?	MR PS	199	The actual emission reductions are less than as estimated in registered PDD. This is due to lower PLF of the plant & due to decrease in the Build Margin emission factor	OK	OK
E.7 Actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards			Section E.7 is not included in the webhosted monitoring report.	CAR 10	OK
E.7.1 If the monitoring period starts before 31 December 2012 and ends anytime thereafter, are actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved for the following two periods provided respectively? (a) Up to 31 December 2012 (1st commitment period);	MR		Refer CAR raised in E.7 above	-	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
(b) From 1 January 2013 onwards.					
E.7.2 Is it ensured that the achieved GHG emission reductions or net anthropogenic GHG removals by sinks are calculated proportionally for each period? In cases where annual caps were applied in the calculations, is it ensured that the annual caps are pro-rated to each period?	MR		Refer CAR raised in E.7 above		

Table 2 Resolution of Corrective Action /Clarification / Forward Action Requests

Draft report clarifications and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CAR 01 In section B.1 of MR , the information of the installed technology, technical processes and equipments, include diagrams is not provided	B.1.1	The Section B.1 of MR is now updated to give information of the installed technology, technical processes and equipments, including a line diagram.	The Monitoring report is revised and the section B.1 now includes information of the installed technology, processes and the line diagram. Verification team based on the observations during the site visit confirms that the information provided is correct. Hence CAR 01 is closed
CAR 02 In section B.2.3 of MR, the information on Permanent changes from the registered monitoring plan approved during this monitoring period are not indicated.	B.2.3.1	The Section B.1 of MR is now updated to give information on Permanent changes from the registered monitoring plan approved during this monitoring period. A summary of these changes is also given in the MR.	Section B.2.3 of the revised Monitoring report now provides information about the permanent changes from the registered monitoring plan. Hence CAR 02 is closed
CAR 03 Section C of MR does not included the measurement system & line diagrams (graphical schemes) showing all relevant monitoring points		The Section C of MR is now updated to include a measurement system & line diagram showing relevant monitoring points.	The description of the measurement system along with the line diagram has been now presented in section C of the revised monitoring report. Verification team found this information correct. Hence CAR

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Draft report clarifications and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
			03 is closed.
CAR 04 The notations used for the parameter "Quantity of NG consumed in the project activity" is inconsistent with the revised approved PDD.	C.1.6.1	The notations used for the parameter "Quantity of NG consumed in the project activity" is now made consistent in the MR as FC _{NG} .	The notations of the monitoring parameters are now corrected in the revised monitoring report. Verification team noted that the same are in line with the approved revised PDD. Hence CAR 04 is closed.
CAR 05 The energy meters with SI No. 7615227, SI No. 9451715 were replaced on 6/01/2012 D.2.4the calibration certificate of these meters after removal are not provided. The information regarding the replacement of the meters and calibration information of new installed meters is not provided. PP to provide the calibration certificates of the energy meters covering the entire monitoring period.		The calibration certificates of the meters after replacement are provided to DOE. These meters were replaced by pre-calibrated meters from the rolling stock meter maintained by PP on 06/01/2012. Calibration certificates of all the energy meters covering the monitoring period are provided.	PP has provided the calibration certificated of energy meters with sl no. 07615227 & 09451715 dated 08/04/2011, 31/05/2012 and sl no. 07615234 & 09451716 dated 18/10/2011, 04/02/2013. The above calibration certificates covers the entire monitoring period and the results shows that the meters were operating within permissible limits. On the basis of the review of the calibration certificates and revised monitoring report CAR 05 is closed.

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Draft report clarifications and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
CAR 06 In section D.2.12, the sources of the monitoring parameters $EG_{PJ,y}$, FC_{NG} NCV_{NG} are not as per the revised approved PDD.	D.2.12	The section D.1 and D.2 is modified to include information consistent with the revised PDD after RMP.	The revised monitoring report now the sources of the monitoring parameters $EG_{PJ,y}$, FC_{NG} NCV_{NG} are corrected and in line with revised approved PDD. The supporting of the same has been provided. Hence CAR 06 is closed.
CAR 07 In section D.2, the QA/QC procedures described for the monitoring parameters are not as per the revised Approved PDD.	D.2.16	The section D.2 is modified now to include information consistent with the revised PDD after RMP.	In response to CAR D.2 has been revised and the QA/QC procedures of the Monitoring parameters has been made in line with approved revised PDD. Hence CAR07 is closed.
CAR 08 A. In section E.1, Sample calculations for all formulae used and calculation of baseline emissions or baseline net GHG removals by sinks provided, applying actual values are not provided B. Sample calculations for all formulae used and calculation of project emissions or actual net GHG		A – The Section E.1 is modified to give values of all parameters used in the sample emission reduction calculations. B - The Section E.1 is modified to give sample calculations for all formulae used in the sample	The monitoring report has been revised and equations for calculation of Baseline emission, Project emissions & leakage emission applying actual values is present in section E, which is correct & meets the requirements. Hence CAR08 is closed

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Draft report clarifications and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project participant response	Verification team conclusion
<p>removals by sinks provided, applying actual values are not provided.</p> <p>C. Sample calculations for all formulae used and calculation of leakage provided, applying actual values are not provided.</p>		<p>emission reduction calculations.</p> <p>C - The Section E.1 is modified to give sample calculations for all formulae used in the sample emission reduction calculations.</p>	
<p>CAR 09</p> <p>For the parameter the $EG_{PJ,y}$, the supporting document for the crosschecking source is not provided.</p>	E.4.3	The supporting documents for the cross checking parameter ' $EG_{PJ,y}$ ' – 'invoice sent to power purchaser' is submitted now.	PP has now provided the copies of the invoices raised to APTRANSCO for the electricity supplied during 10/09/2011 to 10/03/2012. Verification team has cross checked the values for the net electricity exported by the project activity during the monitoring period and found them correct. Hence CAR 09 is closed
<p>CAR 10</p> <p>Section E.7 is not included in the webhosted monitoring report.</p>	E.7	The latest format of monitoring report is used and the Section E.7 is included now.	The monitoring report has been revised and latest template of the monitoring report is used. Hence CAR 10 is closed