
VALIDATION REPORT

Ganpati Sugar Industries Limited

**Ganpati co-generation project at
Medak, Andhra Pradesh (0370)**

SGS Climate Change Programme

SGS United Kingdom Ltd

SGS House

217-221 London Road

Camberley Surrey

GU15 3EY

United Kingdom

Date of Issue:	Project Number:
07-03-2011	CDM.VAL3108 RCP
Project Title:	
Ganpati co-generation project at Medak, Andhra Pradesh	
Organisation:	Client:
SGS United Kingdom Limited	Ganpati Sugar Industries Limited
Publication of PDD for Stakeholders Consultation	
Commenting Period:	Not Applicable
Registered PDD version & date	07, 31/07/2006
Final PDD Version and Date:	05, 23/11/2010 (For current RCP, PP submitted initial PDD with Version 01)
Summary:	
<p>Ganpati Sugar Industries Limited has commissioned SGS to perform the validation of the request for renewal of crediting period for CDM project activity: Ganpati co-generation project at Medak, Andhra Pradesh. The project was registered with UNFCCC with reference number UN0370 for the first crediting period starting 01/01/2003 until 31/12/2009.</p> <p>Methodology used: AMS I.C.Thermal energy production with or without electricity., Sectoral scope 1 Energy Industries (renewable / non-renewable)</p> <p>Version and Date: Version 17, Valid from 11th June 2010 to 30th September 2010. RFR can be submitted until 01/06/2011.</p> <p>The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations for renewal of crediting period. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.</p> <p>The report is based on the findings of document reviews, and responses from the project participants to the findings raised in this report.</p> <p>The report and the annexed validation describes a total of 10 findings which include:</p> <ul style="list-style-type: none"> • 10 Corrective Action Requests; • 00 Clarification Requests; and <p>All the findings have been closed out satisfactorily and the project will be recommended to the CDM Executive Board with a request for renewal of crediting period.</p>	
Subject:	
CDM Validation	
Validation Team:	
B. Senthil Kumar – Lead Assessor C. Muthamil Kumaran – Assessor B. Senthil Kumar – Local Assessor B. Senthil Kumar – Expert	<input checked="" type="checkbox"/> No Distribution (without permission from the Client or responsible organisational unit)
Technical Review:	Trainee Technical Reviewer:
Date: 07/03/2011	Name: NA
Name: Ramkrishna Patil	<input type="checkbox"/> Limited Distribution
Authorised Signatory:	
Name: Gaelle Quessada Date: 16 th March 2011	

			<input type="checkbox"/> Unrestricted Distribution
Revision Number:	Date:	Number of Pages:	
0	16-12--2010	45	
1	07-03-2011	50	

Abbreviations

APTRNASCO	Andhra Pradesh Transmission Corporation
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CER	Certified Emission Reduction
CL	Clarification Request
CO ₂	Carbon Dioxide
COP/MOP	Conference of Parties serving as the Meeting of Parties to Kyoto Protocol
DCS	Distributed Control System
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EB	Executive Board
FAR	Forward Action Request
GHGs	Green House Gas(es)
GSIL	Ganpati Sugar Industries Limited
IPCC	Inter Governmental Panel on Climate Change
kWh	Kilo Watt Hour
MP	Monitoring Plan
MT	Metric Tonne
NCV	Net Calorific Value
OM	Operating Margin
PDD	Project Design Document
PP	Project Participant
QA/QC	Quality Assurance/Quality Plan
RCP	Renewable Crediting Period
RFR	Request for Registration
SG	Southern Grid
SSC	Small scale
TPH	Tons Per Hour
UNFCCC	United Nations Framework Convention on Climate Change

Table of Content

1.	Validation Opinion	6
2.	Introduction	7
2.1	Objective.....	7
2.2	Scope.....	7
2.3	GHG Project Description	7
2.4	The Names and Roles of the Validation Team Members.....	7
3.	Methodology.....	8
3.1	Review of CDM-PDD and Additional Documentation	8
3.2	Use of the Validation Protocol	8
3.3	Findings	8
3.4	Internal Quality Control	9
4.	Validation Findings.....	10
4.1	Project Design	10
4.2	Eligibility as a Small Scale Project.....	10
4.3	Baseline Selection	13
4.4	Application of Baseline Methodology and Calculation of Emission Factors	14
4.5	Application of Monitoring Methodology and Monitoring Plan	15
4.6	Choice of the Crediting Period.....	16
5.	List of Persons Interviewed	17
6.	Document References	18

Annexes:

A.1	Annex 1: Local Assessment	20
A.2	Annex 2: Validation Protocol.....	22
A.3	Annex 3: Overview of Findings	40
A.4	Annex 4: Team Members Statements of Competency.....	<u>48</u>

1. Validation Opinion

SGS United Kingdom Ltd has been contracted by Ganpati Sugar Industries Limited to perform a validation of the request for renewal of crediting period for CDM Project Activity: Ganpati co-generation project at Medak, Andhra Pradesh.

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

SGS reviewed of the project design documentation, using a risk based approach and conducted follow-up interviews.

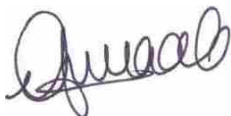
By replacement of low pressure cycle with high pressure cycle cogeneration system which consists of high pressure boiler of capacity 55 TPH, pressure of 67 Kg/cm² and temperature of 480°C and steam turbine of capacity 15 MW the project activity will result in reductions of greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

In our opinion, the project meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. The project correctly applies methodology AMS I.C. Thermal energy production with or without electricity, version 17. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the project are estimated to be 328, 860 t of CO₂e over a 7 year of second crediting period, averaging 46,980 t of CO₂e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not change.

The project will hence be recommended by SGS for renewal of crediting period with the UNFCCC.

Signed on Behalf of the Validation Body by Authorized Signatory



Signature:

Name: Gaelle Quessada

Date: 16th March 2011

2. Introduction

2.1 Objective

Ganpati Sugar Industries Limited has commissioned SGS to perform the validation of the request for renewal of crediting period for CDM Project Activity: Ganpati co-generation project at Medak, Andhra Pradesh with regard to the relevant requirements for CDM project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Certified Emission Reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

2.2 Scope

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

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

2.3 GHG Project Description

The project activity is replacement of low pressure cycle with high pressure cycle cogeneration system consists of high pressure boiler of capacity 55 TPH, pressure of 67 Kg/cm² and temperature of 480°C and steam turbine capacity of 15 MW for catering the thermal and electrical energy requirement of the sugar plant. The project activity also exports power to the APTRANSCO substation which is connected to the Southern Grid (SG) of India there by reduces GHG emissions.

2.4 The Names and Roles of the Validation Team Members

Assessment Team:

Name	Role
B. Senthil Kumar	Lead Assessor
C. Muthamil Kumaran	Assessor
B. Senthil Kumar	Local Assessor
B. Senthil Kumar	Sectoral Scope Expert

Technical Review Team:

Name	Role
Ramkrishna Patil	TR & Sectoral scope expert

3. Methodology

3.1 Review of CDM-PDD and Additional Documentation

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

The site visit was performed by Assessment team on 08/07/2010 & 09/07/2010. The execution team on the site visit checked the methodological applicability, baseline; PDD related documents and included in the Local Assessment Checklist.

3.2 Use of the Validation Protocol

The validation protocol used for the assessment is partly based on the templates of the IETA / World Bank Validation and Verification Manual, version 1.2 and partly on the experience of SGS with the validation of CDM projects. It serves the following purposes:

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

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

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

The completed validation protocol for this project is attached as Annex A.2 to this report

3.3 Findings

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

A clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met

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

- The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- The CDM requirements have not been met;
- There is a risk that emission reductions cannot be monitored or calculated.

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

A forward action request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for renewal of crediting period.

Corrective Action Requests and Clarification Requests are raised in the draft validation protocol and detailed in a separate form (Annex A.3). In this form, the Project Developer is given the opportunity to “close” outstanding CARs and respond to CLs and FARs.

3.4 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team. Findings can be raised at this stage and Client must address them within agreed timeline.

4. Validation Findings

4.1 Project Design

The project activity is bagasse based cogeneration project consists of high pressure boiler of capacity 55 TPH, steam pressure of 67 Kg/cm² and temperature of 480°C and steam turbine capacity of 15 MW for catering the thermal and electrical energy requirement of the sugar plant Ganpati Sugar Industries Limited (GSIL) at Sanga Reddy, Medak district of Andhra Pradesh in India. The project activity also exports power to the Southern Grid of India through the APTRANSCO substation. The project was commissioned on 01st Jan 2003. During validation site visit; it was found that the project is already commissioned. The technology used in the project activity is available in India and no transfer of technology is involved. The project technical description along with the specification of the project activity as mentioned in the PDD has been cross checked against the registered PDD during first crediting period and further checked during site visit and found to be consistent hence accepted.

The project was registered on 29/08/2006 against the approved small scale methodology AMS I.D.ver.7. The cogeneration project activities are not eligible under the small scale methodology AMS 1.D. from version.11. The methodology AMS I.D is not applicable for the project activity. Hence PP applied the approved small scale methodology AMS I.C for the renewable crediting period which found to be the most appropriate for the project activity. However in the PDD version 01 submitted for renewal of crediting period leakage emissions has not been defined as per the applied methodology hence **CAR#1 was raised**. In response PP defined the leakage emissions as per the applied methodology in the PDD. The project activity will utilize only the bagasse generated in the plant no biomass procured from outside the plant is used in the project activity hence leakage defined in the "General guidance on leakage in biomass project activities" is not applicable for the project activity. Thus **CAR#1 was closed out**.

In the PDD version 01 submitted for renewal of crediting period training and maintenance needs for the project activity have not been defined. Hence **CAR#2 was raised**. In response PP incorporated the training and maintenance details in the revised PDD. Hence **CAR#2 was closed out**.

4.2 Eligibility as a Small Scale Project

The project was registered on 29/08/2006 against the approved small scale methodology AMS I.D version 07. The cogeneration project activities are not eligible under the small scale methodology AMS I.D from version.11. The methodology AMS I.D is not applicable for the project activity. Hence PP applied the approved small scale methodology AMS I.C for the renewable crediting period which found to be the most appropriate for the project activity. This is in line with para 2 c) of the Annex 11 of EB46 and is accepted.

The applied methodology AMS I.C falls into small scale category as per Appendix B of the simplified modalities and procedures for small scale CDM project activities. The project activity falls under scope 1 Energy Industries (renewable / non-renewable) as it is generating thermal energy as well as electrical energy from bagasse based cogeneration system and comes under category C (Thermal energy production with or without electricity). The total installed capacity of the project activity is 15 MW which is equal to the applicable threshold limit of 15 MW under this category as per the paragraph 6(C) of the applied methodology AMS.I.C version 17. Therefore the project activity correctly fits into the small scale category.

The CDM project is eligible under the approved methodology AMS I.C, Version 17. The projects eligibility under the applied methodology is detailed out as below

Applicability Conditions in the AMS I.C, Version 17	Justification provided by PP	Means of Validation
1. This category comprises renewable energy technologies that supply users with thermal energy that displaces fossil fuel use. These units include technologies such as solar thermal water heaters and dryers, solar	The project activity is a co-generation system based only on bagasse which is a renewable source of energy. The project activity displaces	During site visit the project installation was checked and was found to be consistent with the project description as

cookers, energy derived from renewable biomass and other technologies that provide thermal energy that displaces fossil fuel.	fossil fuel based electricity generation from the grid using renewable fuel, bagasse. Thus this applicability condition is applicable.	mentioned in the PDD. Further the same was cross checked with the registered PDD for 1 st Crediting period and was found to be consistent and hence accepted.
2. Biomass-based co-generating systems that produce heat and electricity are included in this category. For the purpose of this methodology "Cogeneration" shall mean the simultaneous generation of thermal energy and electrical and/or mechanical energy in one process.	The project activity is Bagasse based co-generation system, the electricity generated in this process is supplied to the regional grid. Thus, this applicability condition is applicable.	During site visit the project installation was checked and was found to be consistent with the project description as mentioned in the PDD. Further the same was cross checked with the registered PDD for 1 st Crediting period and was found to be consistent and hence accepted.
3. Emission reductions from a Cogeneration system can accrue from one of the following activities: (a) Electricity supply to a grid; (b) Electricity and/or thermal energy (steam or heat) for on-site consumption or for consumption by other facilities; (c) Combination of (a) and (b).	Emission reductions of the cogeneration project activity are solely on account of net electrical energy supplied to the grid.	The project activity claims emission reductions only for the net electricity supplied to the grid. The same was confirmed from the PDD submitted for the RCP and from registered PDD.
4. The total installed/rated thermal energy generation capacity of the project equipment is equal to or less than 45MW thermal (see paragraph 6 for the applicable limits for cogeneration project activities)	The project activity is Bagasse based co-generation system which generates electricity and exports net electricity to grid. Emission reductions of the cogeneration project activity are solely on account of electrical energy production. The total installed electrical energy generation capacity of the project equipment of the cogeneration unit is 15 MW.	The project activity claims emission reductions only for the net electricity supplied to the grid. The installed capacity of the project activity is 15 MW. The same was confirmed during site visit.
5. For co-fired systems, the total installed thermal energy generation capacity of the project equipment, when using both fossil and renewable fuel shall not exceed 45 MW thermal	The project activity is not a cofired system and is based solely on renewable fuel (bagasse). This category is not applicable as the system is not co-fired system.	The project activity will utilize only the bagasse from the plant. And the system is not a co-fired system. The same was clearly indicated in the PDD. Hence this is not applicable to the project activity
6. The following capacity limits apply for biomass cogeneration units (a) If the project activity includes emission reductions from both the thermal and electrical energy components, the total installed energy generation capacity (thermal and electrical) of the project equipment shall not exceed 45 MW thermal. For the purpose of calculating this capacity	Emission reductions of the cogeneration project activity are solely on account of electrical energy production (no emission reductions accrue from thermal energy component). The total installed electrical energy generation capacity of the project equipment of the	The installed capacity of the project activity is 15 MW. The same was confirmed during site visit.

<p>limit the conversion factor of 1:3 shall be used for converting electrical energy to thermal energy (i.e., for renewable project activities, the maximal limit of 15 MW(e) is equivalent to 45 MW thermal output of the equipment or the plant);</p> <p>(b) If the emission reductions of the cogeneration project activity are solely on account of thermal energy production (i.e., no emission reductions accrue from electricity component), the total installed thermal energy production capacity of the project equipment of the cogeneration unit shall not exceed 45 MW thermal;</p> <p>(c) If the emission reductions of the cogeneration project activity are solely on account of electrical energy production (i.e., no emission reductions accrue from thermal energy component), the total installed electrical energy generation capacity of the project equipment of the cogeneration unit shall not exceed 15 MW.</p>	<p>cogeneration unit is 15MW and not exceeding the applicable capacity limits of Para 6(c).</p>	
<p>7. In case electricity and/or steam/heat produced by the project activity is delivered to another facility or facilities within the project boundary, a contract between the supplier and consumer(s) of the energy will have to be entered into specifying that only the facility generating the energy can claim emission reductions from the energy displaced.</p>	<p>The net electricity generation from the project activity is supplied to state electricity grid. A Power Purchase Agreement (PPA) entered into between Transmission Corporation of Andhra Pradesh Limited (APTRANSCO) and project proponent (GSIL) is in force now. Thus the applicability criterion is applicable to the project activity.</p>	<p>The electricity generated in the project activity is supplied to the APTANSCO not to other facilities. The same was confirmed during the site visit.</p>
<p>8. Project activities that seek to retrofit or modify an existing facility for renewable energy generation are included in this category.</p>	<p>The project activity is bagasse based co-generation system. The project activity does not involve any retrofit or modifications on the existing facility. Thus this criterion is not applicable to the project activity.</p>	<p>This is not a retrofit project activity. Hence this criteria is not applicable for the project activity.</p>
<p>9. The capacity limits specified in the above paragraphs apply to both new facilities and retrofit projects. In the case of project activities that involve the addition of renewable energy units at an existing renewable energy facility, the total capacity of the units added by the project should comply with capacity limits in paragraphs 3 to 5 and should be physically distinct from the existing units.</p>	<p>The project activity does not involve the addition of renewable energy units at an existing renewable energy facility. Thus this criterion is not applicable to the project activity.</p>	<p>The project activity was a green field project and moreover the installed capacity of the project activity is 15 MW. This was confirmed during site visit. Thus this condition is not applicable to the project activity.</p>
<p>10. Charcoal based biomass energy generation project activities are eligible to apply the methodology only if the charcoal is produced from renewable biomass sources</p>	<p>The activity is bagasse based co-generation system which is displacing the fossil fuel based electricity generation from the grid. The project activity does not involve any charcoal based</p>	<p>The project activity will utilize only the bagasse from the plant. No charcoal is used in the project activity. The same was clearly indicated in</p>

	energy generation.	the PDD. Hence this is not applicable to the project activity
11. If solid biomass fuel (e.g., briquette) is used, it shall be demonstrated that it has been produced using solely renewable biomass and all project or leakage emissions associated with its production shall be taken into account in emissions reduction calculation	Not applicable	The project activity will utilize only the bagasse from the plant. No solid biomass from outside the plant is used in the project activity. The same was clearly indicated in the PDD. Hence this is not applicable to the project activity.

From the above it was validated that the project falls under the small scale category and hence the applicability of AMS I.C version 17 was found to be justified and hence accepted.

4.3 Baseline Selection

Applicability:

The project was registered against the approved small scale methodology AMS I.D ver.7. The cogeneration project activities are not eligible under the small scale methodology AMS I.D from version.11 of AMS I.D. The methodology AMS I.D is not applicable for the project activity. Hence PP applied the another approved small scale methodology AMS I.C for the renewable crediting period which found to be the most appropriate for the project activity. However PP has applied AMS I.C, version 16 of the approved methodology. **CAR#3 was raised** to apply the latest version of the methodology available at the time of submitting PDD for renewal of crediting period as per EB 46, annex11 and to justify the applicability of the methodology as per the latest version. In response PP revised the PDD with the latest version of methodology (ies) AMS I.C version 17 and AMS I.D version 16 which has been referred in para 17 of the applied methodology AMS I.C, version 17 for estimating the baseline emissions for supply of electricity to and /or displacement of electricity to grid. PP also justified all the applicability criteria's of the project activity as per the latest version (Version17) of the applied methodology AMS I.C **Hence CAR#3 was closed out.**

Project boundary:

As per the applied methodology "The physical, geographical site of the project equipment producing the renewable energy delineates the project boundary. The boundary also extends to the industrial, commercial or residential facility, or facilities, consuming energy generated by the system and the processes or equipment that is affected by the project activity". The Southern Grid of India has been correctly identified for the calculation of electricity emission factor as the project displaces an equivalent amount of electrical energy from Andhra Pradesh grid which comes under Southern Grid and the same was checked during site visit and found acceptable.

Baseline Selection:

The PP has adopted the baseline as continuation of the same baseline as was applicable during the first crediting period. In the absence of the project activity the electricity exported to the grid from the project activity would have been generated from the fossil fuel dominated grid. All relevant mandatory national and sectoral policies have been checked^{77/}. There has been no change in the relevant national and/or sectoral policies between the first and the second crediting periods. The same was cross checked against the approval procedures of bagasse cogeneration projects in India and found to be consistent and accepted. It has been observed that, the mandated regulations and approval processed for implementation do not change during the renewal of the second crediting period.

However the validity of the current baseline for the second crediting period has not been assessed as per the stepwise guidance provided in the tool "Tool to assess the validity of the original/current baseline and to update the baseline at the renewal of a crediting period" in EB 46 annex 11. PP's statement "step 1.3 of the tool is not applicable for the project activity" was not correct. Hence **CAR#8 was raised**. In response PP revised the section B.4 of the PDD as per the tool. PP also submitted the remaining life time of the baseline

equipments^{/8/} to substantiate that the use of current baseline equipments are technically possible for the second crediting period also. The expert evaluation method has been chosen by PP to determine the remaining lifetime of the equipment in line with the option (b) of the “Tool to determine the remaining lifetime of equipment” EB50, annex15. The Chartered Engineer Certification for the remaining life of the equipments boiler and Steam Turbo Generator substantiates the remaining life of the equipments (Boiler and Turbo Generator) is 15 years as evaluated on 14/06/2010. Thus **CAR#8 was closed out**.

Updated Baseline:

As per para 3 of the guidance EB 46, Annex 11 which states that the “The demonstration of the validity of the original baseline or its update does not require a reassessment of the baseline scenario, but rather an assessment of the emissions which would have resulted from that scenario”. In line with this PP has updated the baseline with the most recent updated Central Electricity Authority, Ministry of Power, Government of India’s “CO₂ Baseline Database for the Indian Power Sector version 05” (<http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm>) available at time PDD submission for renewal crediting period. The same has been cross checked and found to be consistent hence accepted.

Emission Reduction Calculation:

In the PDD version 1 submitted for renewal of crediting period emission reduction calculation was not provided and also emission reduction spread sheet was not provided. Hence **CAR#8 was raised**. In response PP provided emission reduction sheet and incorporated emission reduction calculation in the PDD. Emission factor value of diesel and grid emission factor value indicated in the PDD were not consistent with the emission reduction sheet. Also PP was asked to explain why the option B was chosen as per the tool “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion” since option A is the preferred one as per the tool. In response PP made the emission factor value of diesel and grid emission factor values consistent with emission reduction sheet. Also explained that chemical composition data of the fossil fuel is not available hence option B was chosen to calculate the emission factor of the diesel. Thus **CAR#8 was closed out**.

4.4 Application of Baseline Methodology and Calculation of Emission Factors

In the PDD version 1 submitted for renewal of crediting period the notations used in the emission reduction calculation were not as per the applied methodology hence **CAR#6 was raised**. In response PP corrected the notations used in the emission reduction calculation as per the applied methodology. Hence **CAR#6 was closed out**.

As per para 3 of the guidance EB 46, Annex 11, PP has updated the baseline with the most recent updated Central Electricity Authority, Ministry of Power, Government of India’s “CO₂ Baseline Database for the Indian Power Sector version 05” (<http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm>) available at time PDD submission for renewal crediting period. The same has been cross checked and found to be consistent hence accepted. However grid emission factor calculation was not provided in the PDD. Hence **CAR#4 was raised** to provide the step wise approach of the grid emission factor calculation as per the latest version (version 2) of the tool “Tool to calculate the emission factor for an electricity system” in the PDD. In response PP has incorporated the stepwise approach as per the tool “Tool to calculate the emission factor for an electricity system” version 2 in the revised PDD version 4 for estimating the grid emission factor. PP has adopted the combined margin approach as per the tool for determining the baseline emission reductions.

PP has used the “Baseline Carbon Dioxide Emission Database, Version 5.0” dated November 2009 which is the latest host country data available at the time of validation, published by Central Electricity Authority Publication for estimating the grid emission factor inline with the EB43, para 64 (a).

The “Baseline Carbon Dioxide Emission Database, Version 5.0” dated November 2009 published by CEA states that the operating margin and build margin have been computed based on the procedures defined in the tool “Tool to calculate the emission factor for an electricity system” version 1.1.

Considering the value of OM and BM from “Baseline Carbon Dioxide Emission Database, Version 5.0” dated November 2009 found to be appropriate to the project activity since the revision (Version 2) in the tool is

(inclusion of provisions to allow off grid power plants in the electricity emission factor calculation) not applicable to the grid emission factor calculation specific to the project activity.

The grid emission factor value 0.86167 tCO₂/MWh for Southern Regional Grid of India has been from the “CO₂ Baseline Database for the Indian Power Sector” Version 05, published by Central Electricity Authority, Ministry of Power, Govt. of India (<http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm>) which has been estimated correctly based on the Average of 3 year OM and its 0.25 weighted and recent year BM, and its 0.75 weighted for second crediting period in line with the “Tool to calculate the emission factor for an electricity system version 2 “ and found consistent hence accepted. The grid emission factor is ex-ante and fixed throughout the second crediting period. Thus **CAR#4 was closed out.**

4.5 Application of Monitoring Methodology and Monitoring Plan

The project was registered against the approved small scale methodology AMS I.D ver.7. The cogeneration project activities are not eligible under the small scale methodology AMS I.D from version.11. The methodology AMS I.D is not applicable for the project activity. Hence PP applied the approved small scale methodology AMS I.C for the renewable crediting period which found to be the most appropriate for the project activity.

The net electricity supplied to the grid ($EG_{BL,y}$) is calculated by subtracting the Electricity Import from the grid ($EG_{import,y}$) from the Electricity exported to the grid ($EG_{export,y}$) after meeting captive and auxiliary power requirements. Total units exported to the grid and imported from the grid will be measured main meter and check meter installed at APTRANSCO substation. The readings will be monitored continuously with hourly measuring frequency and monthly recording frequency. The recorded data will be cross checked with the bills raised by the company as well as the payment details by the grid operator. The actual quantity of electricity delivered to the Grid will be used for the CER computation purposes. This is inline with the applied methodology.

The biomass quantity ($B_{Biomass,y}$) used in the project activity will be estimated based on the annual energy/mass balance of the plant. NCV or biomass and the moisture content of the biomass will be monitored in line with the applied methodology.

For project emissions the quantity of diesel consumed in DG set ($FC_{i,j,y}$ (Diesel)) for electricity generation used by project activity will be monitored in line with the methodology. The QA/QC procedures mentioned in the PDD version 5 is found to be inline with the methodology. Based on the above discussion it was found that the proposed project activity fulfils entire monitoring requirement of the applied methodology

The PDD version 01 submitted for validation of renewal of crediting period applied version 16 of small scale methodology AMS I.C. Hence **CAR#3 was raised** to define the parameters to be monitored for the estimation of emission reduction as per the latest version of the applied monitoring methodology. Also PP was asked to define the QA/QC procedure for all the monitoring parameters and calibration procedure for each monitoring equipment. In response PP defined the parameters to be monitored as per the latest version of the applied monitoring methodology. Also PP defined QA/QC procedures for the monitoring parameters in the revised PDD. However it was mentioned for all the parameters that the equipment will be undergo calibration periodically once in a year or subject to appropriate industry standards. Hence PP was requested to clarify what will be the minimum calibration frequency in line with the “General guidelines to SSC CDM methodologies, version 14.1”. In response PP defined the minimum calibration frequency of any parameter will be atleast once in three years inline with the para 17 (c) of the “General guidelines to SSC CDM methodologies, version 14.1”. The same is also in line with latest version of General Guidelines to SSC CDM Methodologies, version 16. Also PP corrected other inconsistencies in the monitoring plan identified by the validation team as per the applied methodology and tool “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion, version 02”. Thus **CAR#3 was closed out.**

PP has considered default IPCC values for NCV_{diesel} & $EF_{CO_2,i,y}$ for project emission calculations. **CAR#5 was raised** to justify the source of the data in the PDD. PP incorporated the justification in the revised PDD that neither the data from supplier nor its measurement procedures are available with PP also there are no regional or national default values available publicly hence it considered the IPCC default values. The justification is found acceptable and hence **CAR#5 was closed out.**

The uncertainty level of the parameters was not defined in the PDD version 01. Hence **CAR#7 was raised** to incorporate the same. In response PP revised the PDD with the uncertainty level of the parameters. Thus **CAR#7 was closed out**.

Day to day record handling procedures was not described in the PDD version 01. Hence **CAR#9 was raised** to incorporate the same in the PDD. In response PP incorporated the day to day record handling procedures in the revised PDD. Thus **CAR#9 was closed out**.

Internal audit procedures were not described in the PDD version 01. Hence **CAR#10 was raised** to incorporate the same in the PDD. In response PP incorporated the internal audit procedures in the revised PDD. Thus **CAR#10 was closed out**.

4.6 Choice of the Crediting Period

The management of the GSIL decided to go with the project activity by passing the resolution considering CDM in June 2000. The project was commissioned on 1st Jan 2003. The project has been registered on 29th August 2006. PP has opted renewable crediting period with 7 years length for the first crediting period at the time of registration. The choice of crediting period considered for renewal has been found justified against the registration of the project. The operational lifetime has been clearly defined in the PDD. The life time of the project activity is 21 years. The same has been cross checked and found consistent and hence accepted. The lifetime of the project is more than the second crediting period of the project and hence accepted.

PP also provided the email communication ^{/9/} sent on 30th June 2009 to the UNFCCC secretariat regarding notification of the intention to request a renewal of a crediting period and confirmation email received from the UNFCCC secretariat. The first crediting period ends on 31st December 2009. The email communication was sent six months prior to the date of expiration of the first crediting period.

5. List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
08/07/2010 & 09/07/2010	Mr.S.Nagaraj	Chief Executive (W)	Project design, technology used, project boundary, data and parameters monitored, QA/QC and operational and Management structure
08/07/2010 & 09/07/2010	Mr.S.Nagaraj	Chief Executive (W)	Applicability of baseline methodology, Assumptions used for baseline, Emission reduction calculation.

6. Document References

Category 1 Documents (documents provided by the Client that relate directly to the GHG components of the project, (i.e. the CDM Project Design Document, Modalities of communication document, emission reduction calculation sheet etc.) :

- /1/ Registered during 1st crediting period. PDD Version 07, dated 31/07/2006
<http://cdm.unfccc.int/UserManagement/FileStorage/T9GRQDJQJ5B9ZM5ZXJW262U7FAAVMP>
- /2/ PDD Version 01 dated 20/04/2010; first version of PDD submitted to the DOE for renewal of crediting period (second crediting period).
- /3/ PDD Version 02 dated 19/07/2010, PDD Version 03 dated 13/08/2010; intermediate versions of PDD submitted to the DOE for renewal of crediting period (second crediting period).
- /4/ PDD Version 04 dated 02/11/2010; final version of PDD submitted to the DOE for renewal of crediting period.
- /5/ PDD Version 05 dated 23/11/2010; final version of PDD submitted to the DOE for renewal of crediting period.
- /6/ Emission Reduction Calculation Sheet Version 2 dated 19/07/2010; first version of the ER sheet submitted to the DOE for renewal of crediting period (second crediting period).
- /7/ Emission Reduction Calculation Sheet Version 3 dated 13/08/2010; final version of the ER sheet submitted to the DOE for renewal of crediting period (second crediting period).

PDD Version	Date of Revision	Main changes reason for Revision
2	20/04/2010	PDD has been revised applying the version 17 of the methodology from version 16 of AMS I.C applied in earlier version of the PDD. Grid emission calculation has been explained in detail inline with the "Tool to calculate the emission factor for an electricity system" in sections B.4, B.6.1 of the PDD.
3	19/07/2010	QA/QC procedures of monitoring parameters have been revised inline with the applied methodology version 17 in section B.7.1. And unit of the parameters indicated in section B.6.2 have been revised inline with the tool "Tool to calculate the emission factor for an electricity system".
4	02/11/2010	QA/QC procedure regarding the minimum calibration frequency of all the applicable monitoring parameters inline with the para 17(C) of the "General Guidelines to SSC CDM methodologies" version 14.1 have been indicated in the PDD.
5	23/11/2010	No major changes except the total estimated ER value indicated for the second crediting period in section A.4.3 of the PDD has been revised to make the total CER estimation consistent with the yearly CER estimation.

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

- /7/ Government of India, Ministry of New and Renewable Energy website : <http://www.mnre.gov.in/> & Non-Conventional Energy Development Corporation of Andhra Pradesh Ltd website: <http://www.nedcap.gov.in/>.
- /8/ Chartered Engineer Certification for the remaining life of the equipments boiler and Steam Turbo Generator
- /9/ Email Communication dated 30th June 20010 to the UNFCCC secretariat regarding notification of the intention to request a renewal of a crediting period and confirmation email received from the UNFCCC secretariat.
- /10/ AMS.I.C Thermal energy production with or without electricity, version 17

- /11/ Tool to calculate the emission factor for an electricity system", version 02
- /12/ Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", version 02
- /13/ Clean Development Mechanism Validation and Verification Manual Version 1.2.

- o0o -

A.1 Annex 1: Local Assessment

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document for Ganpati co-generation project at Medak, Andhra Pradesh.

It serves as a “**reality check**” on the project that is completed by a local assessor from SGS India.

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
The actual situation of the project activity needs to be physically verified during site visit. This has to be in compliance with information mentioned in the PDD.	The actual situation of the project activity has been confirmed during site visit.	Site Visit	OK
The technical specifications of the installed equipments.	Technical specifications of the boiler and turbo generator at the site were cross checked.	Site Visit	OK
The project's spatial boundaries (geographical) and the project's system boundaries (components and facilities used to mitigate GHGs) needs to be verified during site visit	All the project activity equipments and APTANSCO substation in the project boundary have been verified.	Site Visit	OK
Monitoring plan shall include Parameters to be monitored QA/QC procedures for each monitoring parameters, Calibration details of the equipments.	The parameters to be monitored are not inline with the latest version of the applied methodology AMS I.C version 17. Also minimum calibration requirement of the monitoring instruments has not been defined inline with the General guidelines to SSC CDM methodologies, version 14.1.	Site Visit and Document review	CAR#3. PP defined the parameters to be monitored as per the latest version of the applied methodology and defined QA/QC procedures for the monitoring parameters. Calibration frequency of

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
			the monitoring instruments is now meeting the requirement of the General guidelines to SSC CDM methodologies, version 14.1.thus CAR#3 was closed out.

Annex 2: Validation Protocol

Table 1 PDD

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
A. General Description of Project Activity					
A.1. Project Title					
A.1.1. Does the used project title clearly enable to identify the unique CDM activity?	2,3,4	DR	The title of the project activity is “Ganpati co-generation project at Medak, Andhra Pradesh” which clearly enables to identify the unique CDM activity.	No issues	No issues
A.1.2. Are there an indication of a revision number and the date of the revision?	2,3,4	DR	The PDD mentions the date and version. The present PDD Version is 01 dated 20/04/2010.	No issues	No issues
A.1.3. Is this in consistency with the time line of the project's history?	1,2,3,4	DR	The project was registered on 29/08/2006. First crediting period was from 2003 to 2009. The date mentioned in the title of PDD version 01 dated 20/04/2010 is consistent with the timeline of the project's history.	No issues	No issues
A.2. Description of the Project Activity					
A.2.1. Is the description delivering a transparent overview of the project activities?	2,3,4	DR	The project activity is bagasse based cogeneration activity which employs high pressure boiler replacing the existing low pressure cycle. The project activity exports power to the grid. The description is delivering the transparent overview of the technology employed and projects contribution to the sustainable development project activity.	No issues	No issues

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
A.2.2. Is all information provided in compliance with actual situation or planning?	2,3,4	DR/SV	All information's provided in the PDD is in compliance with the actual situation on the site. The same was verified during site visit.	No issues	No issues
A.2.3. Is all information provided consistent with details provided in further chapters of the PDD?	2,3,4	DR	All the information provided is consistent with the details provided in further chapters of the PDD.	No issues	No issues
A.3. Project Participants					
A.3.1. Is the table required for the indication of project participants correctly applied?	2,3,4	DR	Yes. The table required for the indication of project participants has been correctly applied. As per the PDD version 01 the parties involved are Ministry of Environment and Forest, Govt of India (which is the host party). Project Participant is Ganpati Sugar Industries Limited. The party involved is not the project participant to the project activity.	No issues	No issues
A.3.2. Is all information provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	2,3,4	DR	Section A.3 is consistent with Annex 1 regarding the name of the Project Participant.	No issues	No issues
A.4. Technical Description of the Project Activity					
A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)? Are the latitude and longitude of the site indicated (decimal points)	2,3,4	DR	The project activity is located in Sanga Reddy Mondal, Medak District, Andhra Pradesh. Also the Latitude and Longitude of the site has been indicated in the PDD. This enables the identification of the exact project location.	No issues	No issues
A.4.2. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	2,3,4	DR/SV	The PP possesses the ownership of the site to implement the project activity. The same has been checked during the site visit.	No issues	No issues
A.4.3. Is the category(ies) of the project activity correctly identified?	2,3,4	DR	The project activity falls under scope 1 Energy Industries (Renewable/Non renewable).The same was correctly identified.	No issues	No issues

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
A.4.4. Does the project design engineering reflect current good practices?	2,3,4	DR	The project design engineering reflects the current good practices.	No issues	No issues
A.4.5. Does the description of the technology to be applied provide sufficient and transparent input to evaluate its impact on the greenhouse gas balance and is the explanation how the project will reduce greenhouse gas emission transparent and suitable?	2,3,4	DR	The project activity is bagasse based cogeneration activity which employs high pressure boiler replacing the existing low pressure cycle. The project activity exports power to the grid thus reducing the GHG emissions.	No issues	No issues
A.4.6. Is all information provided in compliance with actual situation or planning as available by the project participants?	2,3,4	DR/SV	Yes, information provided in the PDD is in compliance with the actual situation in the site	No issues	No issues
A.4.7. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	2,3,4	DR	This is the registered project activity. The project activity uses the state of the art technology in the host country.	No issues	No issues
A.4.8. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	2,3,4	DR	The project technology is not likely to be substituted by other or more efficient technology	No issues	No issues
A.4.9. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	2,3,4	DR	The project does not require extensive initial training and maintenance efforts. Moreover project has been already implemented and in operation for over 7 years. Persons involved in the project activity are trained engineers and having more than 10 years of experience in this field.	No issues	No issues
A.4.10. Does the project make provisions for meeting training and maintenance needs?	2,3,4	DR	No details regarding Training in the PDD. Please provide the training and maintenance needs of the project activity PP has incorporated the training and maintenance needs of the project activity in the PDD.	CAR # 2	CAR#2 was closed out.

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
A.4.11. Is a schedule available on the implementation of the project and are there any risks for delays?	2,3,4	DR	The project has been already implemented and in operation.	No issues	No issues
A.4.12. Is the table required for the indication of projected emission reductions correctly applied?	2,3,4	DR	The table indicating the projected emission reduction has been correctly applied.	No issues	No issues
A.5. Public Funding					
A.5.1. Does the information on public funding provided conform with the actual situation or planning as presented by the project participants?	1,2,3,4	DR	As per PDD no public funding from Annex 1 parties involved in the project activity.	No issues	No issues
A.5.2. Is all information provided consist with details provided by further chapters of the PDD (in particular annex 2)?	2,3,4	DR	Yes, the information provided regarding public funding is consistent with Annex 2.	No issues	No issues
A.5.3. In case of public funding from Annex I Parties is it confirmed that such funding does not result in a diversion of official development assistance	2,3,4	DR	N/A	No issues	No issues

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B. Baseline and Monitoring Methodology					
B.1. Choice and Applicability					
B.1.1. Is the baseline methodology previously approved by the CDM Methodology Panel?	2,3,4	DR	<p>The project was registered on 29/08/2006 against the approve methodology AMS I.D.ver.7.The cogeneration project activities are not eligible under the small scale methodology AMS-I.D from version 11.The methodology AMS I.D is not applicable for the project activity. Hence PP applied another approved small scale methodology AMS I.C.version16 which is the most appropriate for the project activity. However PP shall apply the latest version (version 17) of the methodology as per EB46, annex 11.</p> <p>PP has applied the latest version of the methodology available at the time of submission of the PDD for RCP.</p>	CAR # 3	CAR#3 was closed out.
B.1.2. Is the baseline methodology the one deemed most applicable for this project?	2,3,4	DR	<p>The applied small scale methodology AMS I.C. is the most appropriate for the project activity. However PP shall apply latest version of the applied methodology AMS I.C.ver.17 as per EB 46, annex11.</p> <p>PP has applied the latest version of the methodology available at the time of submission of the PDD for RCP.</p>	Pending CAR # 3	CAR#3 was closed out.

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.1.3. Is the choice of the methodology correctly justified by the PDD and is the project in conformance with all applicability criteria of the applied methodology?	2,3,4	DR	<p>The project is in conformance with all applicability criteria of the applied methodology AMS I.C.ver.16. However PP shall apply latest version of the applied methodology AMS I.C.ver.17 as per EB 46, annex11.</p> <p>PP has applied the latest version of the methodology available at the time of submission of the PDD for RCP and justified the applicability criteria.</p>	Pending CAR # 3	CAR#3 was closed out.
B.2. Project Boundary					
B.2.1. Are all emission sources and gasses related to the baseline scenario, project scenario and leakage clearly identified and described in a complete manner?	2,3,4	DR	Yes. The project boundary has been chosen as per the guidance of the applied methodology. As per applied methodology project boundary is "The physical, geographical site of the project equipment producing the renewable energy delineates the project boundary. The boundary also extends to the industrial, commercial or residential facility or facilities, consuming energy generated by the system and the processes or equipment affected by the project activity". The project boundary includes the co generation facility at the site and all the power plants connected to the grid.	No issues	No issues
B.2.2. In case of grid connected electricity projects: Is the relevant grid correctly identified in accordance with EB guidance and the underlying methodology?	2,3,4	DR	Yes. The project activity is connected to the southern grid. And the same has been identified correctly.	No issues	No issues
B.2.3. Are the project's spatial boundaries (geographical) and the project's system boundaries (components and facilities used to mitigate GHGs) clearly defined?	2,3,4	DR	Yes the projects geographical and system boundaries have been clearly defined.	No issues	No issues

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.3. Identification of the Baseline Scenario					
B.3.1. Does the PDD discuss the identification of the most likely baseline scenario? Does the PDD follow the steps to determine the baseline scenario required by the methodology and is the application of the methodology and the discussion and determination of the chosen baseline transparent?	-	DR	Not required for Renewable Crediting Period (RCP) as per the guidance EB 46, Annex 11.	No issues	No issues
B.3.2. Does the application consider all potential realistic and credible baseline scenarios in the discussion taking into account relevant national and/or sectoral policies, macro-economic trends and political aspirations??	-	DR	Not required for Renewable Crediting Period (RCP) as per the guidance EB 46, Annex 11.	No issues	No issues
B.3.3. Is the choice of the baseline compatible with the available data?	-	DR	Not required for Renewable Crediting Period (RCP) as per the guidance EB 46, Annex 11.	No issues	No issues
B.3.4. Is conservativeness addressed in the way of identifying the baseline?	-	DR	Not required for Renewable Crediting Period (RCP) as per the guidance EB 46, Annex 11.	No issues	No issues
B.3.5. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	-	DR	Not required for Renewable Crediting Period (RCP) as per the guidance EB 46, Annex 11.	No issues	No issues

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.4. Application of the Baseline Methodology					
B.4.1. Has the approved methodology been applied correctly for determining baseline emissions ?	2,3,4	DR	<p>PP shall apply the latest version of the methodology (ies).</p> <p>Grid emission factor needs to be calculated as per the Tool to calculate the emission factor for an electricity system.</p> <p>Please explain Grid emission factor calculation in the PDD as per the tool.</p> <p>PP has revised the PDD in accordance with the latest version of the applied methodology also incorporated the grid emission factor calculation as per the tool in the PDD.</p>	Pending CAR # 1 & CAR # 4	CAR # 1 & CAR # 4 were closed out.
B.4.2. Has the approved methodology been applied correctly for determining project emissions ?	2,3,4	DR	<p>PP has applied the latest version of "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" as per the applied methodology.</p> <p>However PP shall justify for taking the default IPCC values for NCV_{diesel} & $EF_{CO2,i,y}$ of diesel.</p> <p>PP has justified the choice of the source of data in the revised PDD.</p>	CAR # 5	CAR # 5 was closed out.
B.4.3. Has the approved methodology been applied correctly for determining leakage ?	2,3,4	DR	<p>Please justify the leakage emissions as per the latest version of methodology in PDD.</p> <p>PP has justified the leakage emissions as per the latest version of the methodology in the revised PDD.</p>	Pending CAR # 1	CAR # 1 was closed out.

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.4.4. Where applicable, has the approved methodology been applied correctly for the direct calculation of emission reductions	2,3,4	DR	Emission reduction estimations shall be as per the formula mentioned in the applied methodology. Please explain as per the methodology. Please use the same notations and equations as per the applied methodology and tool. PP has used the same notations and equation as per the applied methodology for emission reduction calculations.	CAR # 6	CAR # 6 was closed out.
B.4.5. Have all the methodological choices been explained, have they been properly justified and are they correct	2,3,4	DR	PP shall apply the latest version of the methodology. PP has applied the latest version of the methodology in the revised PDD.	Pending CAR # 1	CAR # 1 was closed out.
B.4.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	2,3,4	DR	The uncertainty level of the parameters has not been included. The PP is requested to include the uncertainty in GHG emission estimation. PP has included the uncertainty level of the parameters in the in revised PDD.	CAR # 7	CAR # 7 was closed out.

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.5. Ex-ante Data and Parameters Used					
B.5.1. Are the data provided in compliance with the methodology?	2,3,4,5,6	DR	The data used for emission reduction are in compliance with the approved methodology. The parameter EF _{CO2} (CO2 baseline emission factor for the electricity displaced due to the project activity) value is taken from the Central Electricity Authority (CEA): "CO2 Baseline Database", Version 05, November 2009 which is the latest data available. CEA of India has published a CO2 baseline database for the regional grids of India. The database includes operating margin, build margin and combined margin emission factors for the regional grids calculated in accordance with the above formula as prescribed by ACM0002 and 'Tool to calculate the Emission Factor for an electricity system'.	No issues	No issues
B.5.2. Is all the data derived from official data sources or replicable records and have these been correctly quoted?	2,3,4,5,6	DR	Yes. All the data used for baseline estimation has been from the plant records as well as from reliable sources like IPCC as per methodology.	No issues	No issues
B.5.3. Is the vintage of the baseline data correct?	2,3,4,5,6	DR	The vintage of baseline data used in the PDD is correct	No issues	No issues
B.6. Calculation of Emissions Reductions					
B.6.1. Has the approved methodology been applied correctly for determining emission reductions ?	2,3,4,5,6	DR	PP shall apply the latest version of the methodology. And PP shall refer other comments mentioned above and in the PDD. Please provide the emission reductions calculation in the PDD and also provide the Emission Reduction spread sheet PP has applied the latest version of methodology and provided the ER sheet.	CAR # 8	CAR#8 was closed out.

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.6.2. Are the emission reduction calculations documented in a complete and transparent manner?	2,3,4,5,6	DR	PP shall apply the latest version of the methodology. And PP shall refer other comments mentioned above and in the PDD. PP has applied the latest version of methodology and satisfactorily replied for all other comments.	Pending CAR # 8	CAR#8 was closed out.
B.6.3. Have conservative assumptions been used to calculate emission reductions?	2,3,4,5,6	DR	Pending closure of CAR # 8.	Pending CAR # 8	CAR#8 was closed out.
B.6.4. Is the projection based on provable input parameter?	2,3,4,5,6	DR	The projection of emission reduction is based on the provable input parameter. Projections are based on the electricity export to the grid.	No issues	No issues
B.6.5. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	2,3,4,5,6	DR	Refer B.6.1	Pending closure of CAR # 8	CAR # 8 was closed out.
B.6.6. Is the calculation of the emission reduction correct?	2,3,4,5,6	DR	Refer B.6.1	Pending closure of CAR # 8	CAR # 8 was closed out.
B.7. Emission Reductions					
B.7.1. Will the project result in fewer GHG emissions than the baseline scenario?	2,3,4,5,6	DR	Yes the project results in fewer GHG emissions than the baseline scenario.	No issues	No issues
B.7.2. Is the form/table required for the indication of projected emission reductions correctly applied?	2,3,4,5,6	DR	Yes. The table required for the indication of projected emission reductions correctly applied in section A.4.3 and Section B.6.4	No issues	No issues
B.7.3. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	2,3,4,5,6	DR	The project has been already implemented. The project was registered on 29/08/2006. First crediting period was from 2003 to 2009. The second crediting period starts from 2010 and ends on 2016.	No issues	No issues

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.8. Monitoring Methodology					
<p>B.8.1. Does the monitoring methodology provide a consistent approach in the context of all parameter to be monitored and further information provided by the PDD?</p> <p>Are all parameters and data that is available at validation consistent with the approved methodology</p>	2,3,4	DR	<p>Yes the monitoring methodology is consistent in the context of all the parameters to be monitored.</p> <p>PP shall apply the latest version of the methodology. And PP shall refer other comments mentioned above and in the PDD.</p> <p>PP has applied the latest version of the methodology and also satisfactorily responded to all other comments.</p>	Pending closure of CAR # 3.	CAR#3 was closed out.
<p>B.8.2. Does the monitoring methodology apply consistently the choice of the option selected for monitoring both of project and baseline emissions?</p>	2,3,4	DR	<p>Yes the monitoring methodology consistently applies the choice of option selected for monitoring both of project and baseline emissions.</p> <p>PP shall apply the latest version of the methodology. And PP shall refer other comments mentioned above and in the PDD.</p> <p>PP has applied the latest version of the methodology and also satisfactorily responded to all other comments</p>	Pending CAR # 3	CAR#3 was closed out.
B.9. Data and Parameters Monitored					
<p>B.9.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period?</p>	2,3,4	DR	<p>PP shall apply the latest version of the methodology for defining the parameters to be monitored.</p> <p>PP has applied the latest version of the methodology</p>	Pending closure of CAR#3.	CAR#3 was closed out.
<p>B.9.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?</p>	2,3,4	DR	<p>Yes the choices of project GHG indicators are reasonable and in conformance with the applied methodology.</p>	No issues	No issues

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.9.3. Will it be possible to determine the specified project GHG indicators?	2,3,4	DR	PDD determine the specified project GHG indicators as per the applicable methodology. However PP shall apply the latest version of the methodology. PP has applied the latest version of the methodology	Pending CAR#3.	CAR#3 was closed out.
B.9.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	2,3,4	DR	PP shall apply the latest version of the methodology. PP has applied the latest version of the methodology.	Pending CAR#3.	CAR#3 was closed out.
B.9.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	2,3,4	DR	PP shall apply the latest version of the methodology. PP has applied the latest version of the methodology. Information given for each monitoring variable is sufficient to ensure the delivery of high quality of data. All monitoring parameters are monitored through the calibrated energy meters. APTRANSCO along with PP is jointly recording the net electricity supplied to the grid. Also there is a check meter along with main meter. In case of any failure in main meter, readings of the particular month will be taken from check meters. The main meter and check meters are high accuracy class meters (0.2 class). Hence the quality of data is free of potential for biases.	Pending CAR#3.	CAR#3 was closed out.
B.9.6. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	2,3,4	DR	The monitoring plan has been checked and is found to be covering all relevant aspects and it is inline with the current good practice. The accuracy class of main meter and check meters are 0.2 class.	No Issues	No Issues

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.9.7. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.	2,3,4	DR	All formulae used to determine the project emission are clearly indicated in PDD	No Issues	No Issues
B.10. Quality Control (QC) and Quality Assurance (QA) Procedures					
B.10.1. Is the selection of data undergoing quality control and quality assurance procedures complete?	2,3,4	DR	QA/QC procedures have not been defined for the monitoring parameters. PP has incorporated the QA/QC procedures for all the monitoring parameters.	Pending closure of CAR#3.	CAR#3 was closed out.
B.10.2. Is the belonging determination of uncertainty levels done correctly for each ID in a correct and reliable manner?	2,3,4	DR	Pending closure of CAR#3.	Pending closure of CAR#3.	CAR#3 was closed out.
B.10.3. Are quality control procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?	2,3,4	DR	Pending closure of CAR#3.	Pending closure of CAR#3.	CAR#3 was closed out.
B.10.4. Is it ensured that data will be bound to national or internal reference standards?	2,3,4	DR	Pending closure of CAR#3.	Pending closure of CAR#3.	CAR#3 was closed out.
B.10.5. Is it ensured that data provisions will be free of potential conflicts of interests resulting in a tendency of overestimating emission reductions?	2,3,4	DR	Emission reduction calculations are based on the monthly joint meter reading by APTRANSCO and PP. There is a check meter along with main meter. If there is any failure in the main meter, check meter will be used to calculate the net electricity exported to the grid. The main and check meters are high accuracy class meters (0.2 class) and calibrated on regular intervals. Invoice to APTRANSCO will be based on the JMR. Hence it is ensured the data will be free of potential conflicts of interest and there is no chance of overestimating the emission reductions	No issues	No issues

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.11. Operational and Management Structure					
B.11.1. Is the authority and responsibility of project management clearly described?	2,3,4	DR	As per PDD a team has been formed for monitoring all the data as per the monitoring plan.	No issues	No issues
B.11.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	2,3,4	DR	Yes. The plant manager will be responsible for the correctness of the data collected.	No issues	No issues
B.11.3. Are procedures identified for training of monitoring personnel?	2,3,4		Persons involved in the project activity are having sufficient experience in the power plant operation (co gen) and operators are qualified and trained for the activity.	No issues	No issues
B.12. Monitoring Plan (Annex 4)					
B.12.1. Is the monitoring plan developed in a project specific manner clearly addressing the unique features of the CDM activity?	2,3,4	DR	Yes, the monitoring plan developed is in a project specific manner clearly addressing the unique features of the CDM activity.	No issues	No issues
B.12.2. Does the monitoring plan completely describes all measures to be implemented for monitoring all parameter required, including measures to be implemented for ensuring data quality?	2,3,4	DR	Monitoring plan clearly describes the measures to be implemented for high quality of data.	No issues	No issues
B.12.3. Does the monitoring plan provide information on monitoring equipment and respective positioning in order to safeguard a proper installation?	2,3,4	DR	The monitoring plan of the revised PDD was checked and the positioning of the meter and equipments has been found to be clearly indicated in the PDD and as per the actual scenario which was checked at the site visit.	No issues	No issues
B.12.4. Are procedures identified for calibration of monitoring equipment?	2,3,4	DR	Pending closure of CAR#3.	Pending closure of CAR#3.	CAR#3 was closed out.
B.12.5. Are procedures identified for maintenance of monitoring equipment and installations?	2,3,4	DR	Pending closure of CAR#3.	Pending closure of CAR#3.	CAR#3 was closed out.

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.12.6. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	2,3,4		PP has not indicated about the day to day record handling procedure in the PDD. PP has defined the day to day record handling procedures in the PDD.	CAR#9.	CAR#9 was closed out.
B.12.7. Are procedures identified for dealing with possible monitoring data adjustments and missing data allowing redundant reconstruction of data in case of monitoring problems??	3,4	DR	The PP has mentioned emergency preparedness in the PDD.	No issues	No issues
B.12.8. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	2,3,4	DR	There are no procedures identified in the PDD for the internal audit. PP has incorporated the internal audit procedures in the PDD.	CAR#10	CAR#10 closed out.
B.12.9. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	2,3,4	DR	Yes. The plant manager will be responsible for the correctness of the data collected.	No issues	No issues
B.13. Baseline Details					
B.13.1. Is there any indication of a date when determine the baseline?	2,3,4	DR	As per PDD version 01 the baseline has been determined on 20/04/2010.	No issues	No issues
B.13.2. Is this in consistency with the time line of the PDD history?	2,3,4	DR	Yes. This is consistent with the time line of the PDD history.	No issues	No issues
B.13.3. Is all data required provided in a complete manner by annex 3 of the PDD?	2,3,4	DR	Yes all data required are provided in a complete manner by annex 3 of the PDD	No issues	No issues

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
C. Duration of the Project / Crediting Period					
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	2,3,4,7	DR	The project was commissioned on 1 st Jan 2003. The project has been registered on 29 th Aug 2006. PP has opted renewable crediting period with 7 years length for the first crediting period at the time of registration. The choice of crediting period considered for renewal has been found justified against the registration of the project. The operational lifetime has been clearly defined in the PDD. The life time of the project activity is 21 years.	No issues	No issues
C.1.2. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	2,3,4,7	DR	Yes. The crediting period as mentioned in the PDD is in line with the project. Project proponent has chosen a renewable crediting period of twenty one years. The first crediting period was from Jan 2003 to Dec 2009. The PP is requesting for the renewal of crediting period.	No issues	No issues
C.1.3. Does the project's operational lifetime exceed the crediting period	2,3,4,7	DR	The lifetime of the project is more than the crediting period.	No issues	No issues

References

Reference ID	Title / Description	Comments
/1/	Registered PDD.during first crediting period.	Registered during 1 st crediting period. PDD Version 07, dated 31/07/2006 http://cdm.unfccc.int/UserManagement/FileStorage/T9GRQDJQJ5B9ZM5ZXJW262U7FAAVMP
/2/	PDD Version 01 dated 20/04/2010	First version of PDD submitted to the DOE for renewal of crediting period (second crediting period).
/3/	PDD Version 02 dated 19/07/2010 & PDD Version 03 dated 13/08/2010	Intermediate versions of PDD submitted to the DOE for renewal of crediting period (second crediting period).

Reference ID	Title / Description	Comments
/4/	PDD Version 04 dated 02/11/2010	Final version of PDD submitted to the DOE for renewal of crediting period.
/5/	Emission Reduction Calculation Sheet Version 2 dated 19/07/2010	First version of the ER sheet submitted to the DOE for renewal of crediting period (second crediting period).
/6/	Emission Reduction Calculation Sheet Version 3 dated 13/08/2010	Final version of the ER sheet submitted to the DOE for renewal of crediting period (second crediting period).
/7/	Chartered Engineer Certification	Remaining life of the equipments boiler and Steam Turbo Generator

A.3 Annex 3: Overview of Findings

	CARs	CLs	FARs
Total Number raised	10	-	-

Date:	09/07/2010		Raised by:	B. Senthil Kumar/C. Muthamil Kumaran	
Type:	CAR	Number:	# 1	Reference:	B.4.3
Lead Assessor Comment:					
Please justify the leakage emissions as per the latest version of methodology in PDD.					
Project Participant Response:				Date: 24/07/2010	
Equipment Transfer: As per the guidance by the latest methodology AMS.I.C.Version 17, Para 37 states that "If the energy generating equipment currently being utilised is transferred from outside the boundary to the project activity, leakage is to be considered". No leakage emissions are considered for the proposed project activity since no energy generating equipment is from outside the boundary to the project activity transferred from another activity and/or the existing equipment is transferred to another activity.					
Transportation emission: Further Para 38 states that "In case collection/processing/transportation of biomass residues is outside the project boundary CO2 emissions from collection/processing/transportation (If biomass residues are transported over a distance of more than 200 kilometres due to the implementation of the project activity then this leakage source attributed to transportation shall be considered, otherwise it can be neglected) of biomass residues to the project site". The biomass used in the project activity is the mill generated bagasse available with in the project premises. Collection/processing/transportation of bagasse is within the sugar plant and not outside the project boundary. Hence no leakage sources are considered and CO2 emissions from same are zero.					
Documentation Provided by Project Participant:					
Ganpati 2nd CP PDD - V2.doc					
Information Verified by Lead Assessor:					
Version number and leakage defined in the revised PDD version 02					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 06/08/2010	
Since the energy generating equipment currently being utilised is not transferred from outside the boundary to the project activity, Leakage emissions are not considered. In PDD version 02, justification for not considering the Leakage emissions has been provided. This is in line with the methodology; Hence CAR # 1 was closed out.					
Acceptance and Close out by Lead Assessor:				Date: 06/08/2010	

Date:	09/07/2010		Raised by:	B. Senthil Kumar/C. Muthamil Kumaran	
Type:	CAR	Number:	# 2	Reference:	A. 4.10
Lead Assessor Comment:					
Please provide the training and maintenance needs of the project activity in the PDD					
Project Participant Response:				Date: 24/07/2010	
Section B.7.2 on monitoring plan is revised including the training and maintenance needs of the project activity					
Documentation Provided by Project Participant:					
Ganpati 2nd CP PDD - V2.doc					
Information Verified by Lead Assessor:					
Training and maintenance needs mentioned in section B.7.2 of the revised PDD version 02					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 06/08/2010	

Training and maintenance needs of the project activity have been incorporated in the revised PDD version 02. CAR # 2 was closed out.

Acceptance and Close out by Lead Assessor: **Date:** 06/08/2010

Date:	09/07/2010		Raised by:	B. Senthil Kumar/C. Muthamil Kumaran	
Type:	CAR	Number:	# 3	Reference:	Section B.1.1

Lead Assessor Comment:

1. PP shall apply latest version of the applied methodology AMS I.C.ver.17 & AMS I.D.ver.16 as per EB 46, annex11.
2. Please justify the choice of methodology and applicability
3. Please explain the QA/QC procedures for each monitoring parameter and calibration procedure for each monitoring equipment.
4. The parameters to be monitored and ER estimation shall be in compliance with the latest version of the applied methodology.

Project Participant Response:

Date: 24/07/2010

1. PDD is revised to the latest version of the methodologies AMS I.C.ver.17 & AMS I.D.ver.16
2. Choice & justification of methodologies is addressed in the revised PDD under section B.2
3. QA/QC procedures and calibration procedure for each monitoring equipment is explained under section B.7.1
4. Emission reductions of the cogeneration project activity are solely on account of net electrical energy supplied to the grid. Hence the parameters required for estimation of CERS (i.e, net electricity export & import to/from grid) are monitored inline to the latest version of the methodology AMS.I.C and AMS.I.D. The others parameters like bagasse consumption, NCV of bagasse, moisture content of bagasse are also monitored though these values are not necessary for estimating the CERS.

Documentation Provided by Project Participant:

Ganpati 2nd CP PDD - V2.doc

Information Verified by Lead Assessor:

Revised PDD version 02.

Reasoning for not Acceptance or Acceptance and Close Out:

Date: 06/08/2010

1. PP has applied the latest version of methodology as per EB 46, annex11. OK.
2. As per the methodology, Justification of choice of methodology and applicability conditions are explained in PDD_V02. OK
3. QA/QC procedures for the monitoring parameters have been defined. However it is mentioned for all the parameters that the equipment will be undergo calibration periodically once in a year or subject to appropriate industry standards. PP is requested to clarify what is the minimum calibration frequency in line with the "General guidelines to SSC CDM methodologies". Also the details regarding calibration standards (national/international) shall be included. For the parameter $F_{Ci,j,y}$ (Diesel) Level gauge shall be calibrated at least once a year with recording the measurements on daily or shift basis as per the tool & Monitoring frequency shall be continuous as per the tool.
4. Open due to following reason.
 - Please use the same parameter, description and units as per the methodology/ tool for all the parameters.
 - Measuring frequency has been not incorporated for monitoring parameters
 - frequency of calibration for the equipments/instruments used has been not clearly explained
 - Recording frequency shall be monthly as per applied methodology for the parameter Moisture_{bagasse}.
 - Unit shall be in terms of GJ/Mass or Volume as per applied methodology for the parameter $NCV_{bagasse}$.

CAR # 3 is open.

Project Participant Response:

Date: 13/08/2010

3. Calibration frequency for each parameter is now rectified and is inline with general guidelines of SSC CDM methodologies version 14.1 paragraph 17(c). Recording frequency and calibration frequency is revised for the parameter $F_{Ci,j,y}$ (Diesel) as per the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion"

4.

- Used the same parameters, description, and unit as prescribed in the methodology and tool
- Measuring frequency for each parameter is now clear under section B.7.1
- Frequency of calibration for each measuring equipment is now clear under section B.7.1
- Measuring frequency for the parameter Moisture_{bagasse} is now changed to Monthly as suggested in the methodology.
- Unit for $NCV_{bagasse}$ is now changed to GJ/ton as mentioned in the methodology. But the data is measured in Kcal/kg as per the national standards and will be converted to GJ/ton as required by the methodology.

Documentation Provided by Project Participant:

Ganpati 2nd CP PDD - V3
CERs for 2nd CP V3

Information Verified by Lead Assessor:

Relevant sections of revised PDD version 03 and CER sheet version 2.

Reasoning for not Acceptance or Acceptance and Close Out:

Date: 16/10/2010

3. Monitoring (Measuring) frequency for the parameter $FC_{i,j,y}$ (Diesel) shall be continuous and recording frequency shall be daily or shift basis as per the tool. Recording frequency indicated here is not inline with the tool. PP shall Clarify.

4. The remaining issues

- For the parameters $EF_{grid,OM,y}$ & $EF_{grid,BM,y}$ the unit shall be as per applied methodology.
- For the parameter $EF_{diesel} / EF_{CO2,i,y}$ IPCC value has been considered. Hence PP shall clearly indicate that any future change in the IPCC values will be taken into account as per the tool.
- PP shall indicate the Measuring frequency for $EG_{import,y}$.
- PP shall incorporate the measurement methods and procedures "for measuring NCV of biomass inline with the applied methodology in the QA/QC procedures for the parameter $NCV_{bagasse}$ ".
- The weighted average shall be calculated for each monitoring period as per the applied methodology for the monitoring parameter $Moisture_{bagasse}$ however the same has been indicated as yearly recording frequency in the PDD. PP shall clarify. And also PP shall indicate the Calibration standards for the parameter $Moisture_{bagasse}$.
- Operating hours shall be included in the monitoring parameters as per applied methodology.
- The formula used and units are not consistent with methodology (Project Emissions formula and units)

CAR # 3 is open.

Project Participant Response:

Date: 22/10/2010

3. Monitoring and Recording frequency of $FC_{i,j,y}$ (diesel) is corrected inline with the Tool

4.

- In Page 1 & 2 of AMS ID v16, the unit for $EF_{CO2,grid}$ is $tCO2/MWh$ and In Page 2 of "Tool to calculate the emission factor for an electricity system" the unit for $EF_{grid,OM,y}$ & $EF_{grid,BM,y}$ is $tCO2/MWh$. Hence PP followed the same units for both the parameters under section B.6.2 of PDD V3. Same is retained
- It is now clearly mentioned in the revised PDD that any future change in the IPCC values will be taken into account as per the tool for the parameters $EF_{diesel} / EF_{CO2,i,y}$ & NCV_{diesel}
- Measuring frequency for $EG_{import,y}$ is now mentioned in the revised PDD
- Measurement procedure is very clear in the revised PDD that the the Net Calorific Value of bagasse on dry basis will be measured in laboratories by conducting laboratory test on annual basis according to national standards. The consistency of the measurements is checked by comparing the measurement results with measurements from previous years. This is inline with the methodology
- Rectified the description related to recording frequency of the parameter $Moisture_{bagasse}$. It is mentioned in the PDD that the Calibration frequency is either subject to appropriate intervals according to industry standards or with a minimum frequency of once a year
- Monitoring of Operating hours or Continuous operation of the equipment/ system is not necessary. The monitoring of such parameter is very specific to the cases where "the emissions reduction per system is less than 5 tonnes of CO_2e a year"; or "In the case of household or commercial applications/systems, whose maximum output capacity is less than 45 kW thermal". This is not applicable to the project activity.

Consistency is maintained for project emissions formula. Please check the revised PDD

Documentation Provided as Evidence by Project Participant:

Revised PDD version 04.

Information Verified by Lead Assessor:

Reasoning for not Acceptance or Acceptance and Close Out:

1. PP has applied the latest version of methodology as per EB 46, annex11	
2. As per the methodology, Justification of choice of methodology and applicability conditions are explained in PDD_V02.	
3. QA/QC procedures for each monitoring parameter and calibration procedure for each monitoring equipment has been explained and calibration frequency of the each monitoring equipments has been provided in the revised PDD	
4. All monitoring parameters are consistent with the applied methodology AMS IC _Version 17	
CAR # 3 was closed out.	
Acceptance and Close out by Lead Assessor:	Date: 03/11/2010

Date:	09/07/2010	Raised by:	B. Senthil Kumar/C. Muthamil Kumaran		
Type:	CAR	Number:	# 4	Reference:	B 4.1

Lead Assessor Comment:
Grid emission factor needs to be calculated as per the Tool to calculate the emission factor for an electricity system. Please explain Grid emission factor calculation in the PDD as per the tool.

Project Participant Response:	Date: 24/07/2010
--------------------------------------	-------------------------

The approach proposed in the "Option (a)" i.e. "Combined Margin" has been used for ascertaining Baseline Emission Reductions. The operating margin and the build margin emission factor have been considered from the information (Baseline Carbon Dioxide Emission Database –Version 5.0) published by the Central Electricity Authority (CEA), Ministry of Power, Govt. of India which have been computed according to the procedures prescribed in the 'Tool to calculate the emission factor for an electricity system'.

As per step 7 of "Tool to calculate the emission factor an electricity system" The default values of $w_{OM} = 0.25$ and $w_{BM} = 0.75$ for the second and third crediting period are used. Simple OM emission factor has been sourced from the most recent data available at the time of submission of the PDD for renewal and has therefore been fixed for the crediting period. And for Build Margin Option 1 which states 'For the first crediting period, calculate the build margin emission factor ex-ante based on the most recent information available on units already built for sample group m at the time of CDM-PDD submission to the DOE for validation is used. The same has been explained in revised PDD under section B.4

Documentation Provided by Project Participant:
Ganpati 2nd CP PDD - V2.doc

Information Verified by Lead Assessor:
Grid emission factor calculation provided in the PDD version 02.

Reasoning for not Acceptance or Acceptance and Close Out:	Date: 06/08/2010
--	-------------------------

PP shall substantiate its statement made in the PDD that the OM & BM that have been computed by CEA is as per the latest version of the tool.

Please follow the stepwise approach used in the tool to calculate grid emission factor version 02.

CAR # 4 is open.

Project Participant Response:	Date: 13/08/2010
--------------------------------------	-------------------------

The reference provided for OM & BM for calculating the grid emission factor which is computed by CEA (i.e., <http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm>) has followed the Tool approved and published by CDM Executive Board. The same can be substantiated by checking the User Guide provided under same link.

Please note that "The latest version of CO2 Baseline Database for the Indian Power Sector" i.e., "The emission factors have been calculated based on approach provided by the Tool approved and published by CDM Executive Board to calculate the emission factor for an electricity system. (Refer Page 3 of User Guide) where it is evident that the approach used for calculating the emission factor is based on Tool itself.

Documentation Provided by Project Participant:
Ganpati 2nd CP PDD - V3

Information Verified by Lead Assessor:
Revised PDD version 03.

Reasoning for not Acceptance or Acceptance and Close Out:	Date: 16/10/2010
--	-------------------------

PP is requested to follow the stepwise approach used in the tool to calculate grid emission factor version 02 and elaborate the same in the PDD.
It has been mentioned in the CEA "CO₂ Baseline Database for the Indian Power Sector, User Guide Version 5.0" that Tool to Calculate the Emission Factor for an Electricity System (Version 01.1, EB 35 Annex 12) has been used for estimating the grid emission factor. However the latest version of the tool is Version 02. Hence PP is requested to clarify how it is meeting the requirement.
CAR # 4 is open.

Project Participant Response:	Date: 02/11/2010
Stepwise approach is incorporated in the revised PDD under section B.4 PP has referred and used in PDD the "Tool to Calculate the Emission Factor for an Electricity System" version 02 to calculate the Baseline emission factor. Its stepwise approach been followed and emission factor is calculated as per the steps provided in Tool version 02. The operating margin and the build margin emission factor have been considered from the information (Baseline Carbon Dioxide Emission Database –Version 5.0) published by the Central Electricity Authority (CEA), Ministry of Power, Govt. of India which have been computed according to the procedures prescribed in the 'Tool to calculate the emission factor for an electricity system' version 1.1. PP has used the latest data available at the time of PDD submission for calculating the grid emission factor and hence it meets the requirement.	
Documentation Provided as Evidence by Project Participant:	
Revised PDD Version 04.	
Information Verified by Lead Assessor:	
Stepwise approach applied for calculating baseline emission factor.	
Reasoning for not Acceptance or Acceptance and Close Out:	
PP has incorporated the stepwise approach as per the tool "Tool to calculate the emission factor for an electricity system" version 2 in the revised PDD version 4 for estimating the grid emission factor. PP has used the "Baseline Carbon Dioxide Emission Database, Version 5.0" dated November 2009 which is the latest host country data available at the time of validation, published by Central Electricity Authority Publication for estimating the grid emission factor inline with the EB43, para 64 (a). The "Baseline Carbon Dioxide Emission Database, Version 5.0" dated November 2009 published by CEA states that the operating margin and build margin have been computed based on the procedures defined in the tool "Tool to calculate the emission factor for an electricity system" version 1.1. Considering the value of OM and BM from "Baseline Carbon Dioxide Emission Database, Version 5.0" dated November 2009 found to be appropriate to the project activity since the revision (Version 2) in the tool is (inclusion of provisions to allow off grid power plants in the electricity emission factor calculation) not applicable to the grid emission factor calculation specific to the project activity. CAR# 4 was closed.	
Acceptance and Close out by Lead Assessor:	Date: 03/11/2010

Date:	09/07/2010	Raised by:	B. Senthil Kumar/C. Muthamil Kumaran		
Type:	CAR	Number:	# 5	Reference:	B. 4.2
Lead Assessor Comment:					
PP has applied the latest version of “Tool to calculate project or leakage CO2 emissions from fossil fuel combustion” as per the applied methodology.					
However PP shall justify for taking the default IPCC values for NCV _{diesel} & EF _{CO2,i,y} of diesel.					
Project Participant Response:				Date: 24/07/2010	
The justification for NCV _{diesel} & EF _{CO2,i,y} of diesel is provided in revised PDD. Since the data from neither the supplier nor its measurement procedures are available with PP, also there are no regional or national default values publicly available. IPCC 2006 default value is used as data sources.					
Documentation Provided by Project Participant:					
Ganpati 2nd CP PDD - V2.doc					
Information Verified by Lead Assessor:					
Justification provided by PP for the parameters NCV _{diesel} & EF _{CO2,i,y} in section B.6.2 of the revised PDD.					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 06/08/2010	

Justification for the source of parameters NCV_{diesel} & $EF_{CO_2,i,y}$ has been incorporated in section B.6.2 of the revised PDD. Found ok. Hence CAR #5 was closed.

Acceptance and Close out by Lead Assessor: **Date:** 06/08/2010

Date:	09/07/2010	Raised by:	B. Senthil Kumar/C. Muthamil Kumaran		
Type:	CAR	Number:	# 6	Reference:	B 4.4

Lead Assessor Comment:

Emission reduction estimations shall be as per the formula mentioned in the applied methodology. Please explain as per the methodology.

Please use the same notations and equations as per the applied methodology and tool

Project Participant Response: **Date:** 24/07/2010

Emission reductions estimations explained as per the methodology, same is seen in revised PDD under section B.6.3

Documentation Provided by Project Participant:

Ganpati 2nd CP PDD – V2.doc

Information Verified by Lead Assessor:

ER reduction Formula and Notations in section B.6.3.

Reasoning for not Acceptance or Acceptance and Close Out: **Date:** 06/08/2010

Formula and notations used for ER estimation is now consistent with the applied methodology. Hence CAR # 6 was closed out.

Acceptance and Close out by Lead Assessor: **Date:** 06/08/2010

Date:	09/07/2010	Raised by:	B. Senthil Kumar/C. Muthamil Kumaran		
Type:	CAR	Number:	# 7	Reference:	B 4.6

Lead Assessor Comment:

The uncertainty level of the parameters has not been included. The PP is requested to include the uncertainty in GHG emission estimation

Project Participant Response: **Date:** 24/07/2010

The uncertainty level for each parameter is now included under section B.7.1 of revised PDD which are listed under monitoring as low.

Documentation Provided by Project Participant:

Ganpati 2nd CP PDD – V2.doc

Information Verified by Lead Assessor:

Section B.7.1 of the PDD version 02.

Reasoning for not Acceptance or Acceptance and Close Out: **Date:** 06/08/2010

Uncertainty level of the parameters has been incorporated thereby addressing the uncertainty in GHG estimation has been addressed. Hence CAR # 7 was closed out.

Acceptance and Close out by Lead Assessor: **Date:** 06/08/2010

Date:	09/07/2010	Raised by:	B. Senthil Kumar/C. Muthamil Kumaran		
Type:	CAR	Number:	# 8	Reference:	B 6.1

Lead Assessor Comment:

Please provide the emission reductions calculation in the PDD and also provide the Emission Reduction spread sheet

Project Participant Response: **Date:** 24/07/2010

Emissions reductions estimation is now detailed in PDD under section B.6.3 & B.6.4. Emission reduction spread sheet is provided to DOE.

Documentation Provided by Project Participant:

Ganpati 2nd CP PDD - V2.doc

CERs for 2nd CP V2

Information Verified by Lead Assessor:

ER sheet and ER calculation in sections B.6.1 & B.6.3 of the revised PDD version 02.					
Reasoning for not Acceptance or Acceptance and Close Out:			Date: 06/08/2010		
<div>1. EFCO₂diesel (tCO₂/TJ) value indicated in the ER sheet is not consistent with the value indicated in the PDD. PP shall clarify.</div> <div>2. EF_{grid,CM,y} value has been indicated as 0.86168 tCO₂/MWh in the PDD. It is not consistent with ER spread Sheet (0.86167 tCO₂/MWh)</div> <div>3. In section B.4 of the revised PDD, Step 1.3 of the tool “Tool to assess the validity of the original/current baseline and to update the baseline at the renewal of a crediting period” is not applicable for the project activity as per PP’s statement. PP’s interpretation is not correct. PP shall discuss the remaining technical life of the project activity equipments. Baseline equipments in this context are project activity equipments i.e. boiler, TG.</div> <div>4. PP shall explain why option B from “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion has been chosen for calculating Project emissions since option A is preferred one.</div> <div>5. Please indicate the version number of tools/methodology applied when quoting the tools/methodology in the PDD.</div>					
CAR # 8 is open.					
Project Participant Response:			Date: 13/08/2010		
<div>Inconsistency for EF_{diesel} / EFCO_{2,i,y} is now rectified. Kindly refer ER sheet and revised PDD section B.6.2 & B.6.3</div> <div>Revised PDD and ER spread sheet are now consistent w.r.t the parameter EF_{grid,CM,y} value as (0.86167 tCO₂/MWh)</div> <div>Step 1.3 in section B.4 is now revised according to the “Tool to assess the validity of the original/current baseline and to update the baseline at the renewal of a crediting period” by providing the description on the remaining technical lifetime. The supporting documents for the same had been provided to DOE during the visit to the site.</div> <div>Option A for calculating the CO₂ emission coefficient is not used, as the necessary data is not available since the approach is based on the chemical composition of the fossil fuel type. Hence the preferred approach is Option B of “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion”, Version 02, to calculate the CO₂ emission coefficient (COEF_{i,y})</div> <div>Version numbers of Tools and Methodologies have been indicated wherever applicable in the PDD</div>					
Documentation Provided by Project Participant:					
Ganpati 2nd CP PDD - V3 CERs for 2 nd CP V3					
Information Verified by Lead Assessor:					
Revised PDD version 03 and CER sheet version 3.					
Reasoning for not Acceptance or Acceptance and Close Out:			Date: 16/08/2010		
<div>1. EFCO₂diesel (tCO₂/TJ) and EF_{grid,CM,y} values in PDD are consistent with ER spread sheet</div> <div>2. Step 1.3 in section B.4 has been revised as per the procedures for renewal of crediting period of the registered</div> <div>3. Justification has been provided in PDD, for choosing the option A of “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion”, Version 02</div> <div>4. Version numbers of tools and methodology has been indicated in the PDD.</div>					
CAR # 8 was closed.					
Acceptance and Close out by Lead Assessor:			Date: 16/10/2010		
Date:	09/07/2010		Raised by:	B. Senthil Kumar/C. Muthamil Kumaran	
Type:	CAR	Number:	# 9	Reference:	B 12.6
Lead Assessor Comment:					
Please provide the day to day record handling procedures in the PDD					

Project Participant Response:	Date: 24/07/2010
Day to day record handling is now described in PDD under section B.7.2	
Documentation Provided by Project Participant:	
Ganpati 2 nd CP PDD - V2.doc	
Information Verified by Lead Assessor:	
Record handling procedures defined in section B.7.2 of the revised PDD version 02.	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 06/08/2010
Day to Day record handling procedures has been incorporated in the revised PDD version 02. Hence CAR # 9 was closed out.	
Acceptance and Close out by Lead Assessor:	Date: 06/08/2010

Date:	09/07/2010		Raised by:	B. Senthil Kumar/C. Muthamil Kumaran		
Type:	CAR	Number:	# 10		Reference:	B 12.8
Lead Assessor Comment:						
Please provide the internal audit details in the PDD						
Project Participant Response:				Date: 24/07/2010		
Internal audit procedures is now described in PDD under section B.7.2						
Documentation Provided by Project Participant:						
Ganpati 2 nd CP PDD - V2.doc						
Information Verified by Lead Assessor:						
Internal audit procedures mentioned in the section B.7.2 of the revised PDD version 02.						
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 06/08/2010		
Internal audit details have been incorporated in section B.7.2 of the revised PDD version 02. Hence CAR # 10 was closed out.						
Acceptance and Close out by Lead Assessor:				Date: 06/08/2010		

A.4 Annex 4: Team Members Statements of Competency

Name: Kumar, Senthil

Status

- Lead Assessor	X	- Expert	x
- Assessor	X	- Financial Expert	
- Local Assessor	India	- Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)

x

Sub scope(s): Combined heat and Power & Waste Heat and Biomass based Thermal/ Electricity Utilization

2. Energy Distribution

Sub scope(s):

3. Energy Demand

Sub scope(s):

4. Manufacturing

Sub scope(s):

5. Chemical Industry

Sub scope(s):

6. Construction

Sub scope(s):

7. Transport

Sub scope(s):

8. Mining/Mineral Production

Sub scope(s):

9. Metal Production

Sub scope(s):

10. Fugitive Emissions from Fuels (solid, oil and gas)

Sub scope(s):

11. Fugitive Emissions from Production and

x

Consumption of Halocarbons and Sulphur Hexafluoride

Sub scope(s): Emissions from production of other fluorinated compounds

12. Solvent Use

Sub scope(s):

13. Waste Handling and Disposal

Sub scope(s):

14. Afforestation and Reforestation

Sub scope(s):

15. Agriculture

Sub scope(s):

Approved Member of Staff by:

Siddharth Yadav

Date:

13 January 2010

Name: Muthamil Kumaran

Status

- Lead Assessor		- Expert	x
- Assessor	x	- Financial Expert	
- Local Assessor	India	- Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	x
<i>Sub scope(s):</i> Combined heat and Power & Waste Heat	
2. Energy Distribution	
<i>Sub scope(s):</i>	
3. Energy Demand	
<i>Sub scope(s):</i>	
4. Manufacturing	
<i>Sub scope(s):</i>	
5. Chemical Industry	
<i>Sub scope(s):</i>	
6. Construction	
<i>Sub scope(s):</i>	
7. Transport	
<i>Sub scope(s):</i>	
8. Mining/Mineral Production	
<i>Sub scope(s):</i>	
9. Metal Production	
<i>Sub scope(s):</i>	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
<i>Sub scope(s):</i>	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
<i>Sub scope(s):</i>	
12. Solvent Use	
<i>Sub scope(s):</i>	
13. Waste Handling and Disposal	
<i>Sub scope(s):</i>	
14. Afforestation and Reforestation	
<i>Sub scope(s):</i>	
15. Agriculture	
<i>Sub scope(s):</i>	

Approved Member of Staff by: Siddharth Yadav Date: 07/06/2010

Statement of Competence

Name: Patil, Ramkrishna

Status

- Lead Assessor	<input checked="" type="checkbox"/>	- Expert	<input checked="" type="checkbox"/>
- Assessor	<input checked="" type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	India	- Technical Reviewer	<input checked="" type="checkbox"/>

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input checked="" type="checkbox"/>
<i>Sub scope(s): Wind</i>	
<i>Combined heat and Power & Waste Heat</i>	
<i>Biomass based Thermal/ Electricity Utilization</i>	
2. Energy Distribution	<input checked="" type="checkbox"/>
<i>Sub scope(s): Energy Distribution</i>	
3. Energy Demand	<input type="checkbox"/>
<i>Sub scope(s):</i>	
4. Manufacturing	<input type="checkbox"/>
<i>Sub scope(s):</i>	
5. Chemical Industry	<input type="checkbox"/>
<i>Sub scope(s):</i>	
6. Construction	<input type="checkbox"/>
<i>Sub scope(s):</i>	
7. Transport	<input type="checkbox"/>
<i>Sub scope(s):</i>	
8. Mining/Mineral Production	<input type="checkbox"/>
<i>Sub scope(s):</i>	
9. Metal Production	<input type="checkbox"/>
<i>Sub scope(s):</i>	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
<i>Sub scope(s):</i>	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
<i>Sub scope(s):</i>	
12. Solvent Use	<input type="checkbox"/>
<i>Sub scope(s):</i>	
13. Waste Handling and Disposal	<input type="checkbox"/>
<i>Sub scope(s):</i>	
14. Afforestation and Reforestation	<input type="checkbox"/>
<i>Sub scope(s):</i>	
15. Agriculture	<input type="checkbox"/>
<i>Sub scope(s):</i>	

Approved Member of Staff by:

Siddharth Yadav

Date:

25 August 2010