



## Voluntary Carbon Standard Version 2007.1 Verification Report

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Report No.: 01 996 9105039097

### Verification Report:

<b>Name of Verification company:</b>	<b>Date of the issue:</b>
TÜV Rheinland Japan Ltd	
<b>Report Title:</b>	<b>Approved by:</b>
16.0 MW bagasse based cogeneration project at Ahmadnagar, Maharashtra by M/s Mula Sahakari Sakhar Karkhana Ltd.	Dr. Manfred Brinkmann
<b>Project Proponent:</b>	<b>Project Title:</b>
M/s Mula Sahakari Sakhar Karkhana Ltd.	16.0 MW bagasse based cogeneration project at Ahmadnagar, Maharashtra by M/s Mula Sahakari Sakhar Karkhana Ltd.
<b>Summary:</b>	
<p>M/s Mula Sahakari Sakhar Karkhana Ltd. has commissioned the TÜV Rheinland JI/CDM Certification Program to carry out the verification of the project - "16.0 MW bagasse based cogeneration project at Ahmadnagar, Maharashtra by M/s Mula Sahakari Sakhar Karkhana Ltd." with regard to the relevant requirements of VCS 2007.1 Standard/VCSA Rules.</p> <p>The project activity involves generation of renewable electricity by using Bagasse in a co-generation plant and supplying power to the sugar mill for the in-house captive consumption and the surplus electricity to the</p>	

grid of Maharashtra (As per approved VCS PD), which comes under Integrated NEWNE grid of India/W03/.

The primary objective of the project activity is to use bagasse, a by-product of sugar production, as a fuel for generation of steam and electricity to fulfill the Sugar Plant's in-house requirement and exporting surplus power to the state electricity utility namely Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL). In absence of the project activity, the electricity for in-house requirement would have been generated in a lower efficiency power plant (termed as reference plant i.e. the baseline scenario as per the scenario 13 of the applied methodology) and thus incremental electricity generated (as compare to the reference plant), which otherwise would have been generated in thermal power plant predominant integrated NEWNE grid and thus prevented equivalent amount of CO<sub>2</sub>e. During the reported monitoring period, project activity has generated 47.54 GWh of electricity.

The Methodology ACM0006 Version 09: "Consolidated methodology for electricity generation from biomass residues" an approved consolidated methodology of UNFCCC CDM program is applied.

A rule based approach has been followed to perform this verification. In the course of the verification Ten (10) Corrective Action Requests (CAR) and Sixteen (16) Clarification Requests (CR) was raised and successfully closed.

The verification is based on documents registered by VCSA VCS PD /B02/, monitoring report and other supporting documents made available to the verification team by project proponent.

Based on the verification of the registered VCS PD , MR and other supporting documents, the verifiers confirm that:

The year wise GHG emission reduction in the reported monitoring period 01/01/2007 to 31/12/2008 (inclusive of both the days) is as below:

Year	Emission reduction in the reported monitoring period in tCO <sub>2</sub> e
2007 (01/01/2007 to 31/12/2007)	6,411
2008 (01/01/2008 to 31/12/2008)	12,905

<b>Total emission reduction in tCO<sub>2</sub>e</b>	19,316
<b>Work carried out by:</b>	<b>Number of pages:</b>
<b>Team Leader:</b> Mr. Asim Kumar Jana	64
<b>Trainee(s):</b> Mr. Raj Kumar Deka	
Mr. Sanjay Agarwalla	
Mr. Dinesh Mane	
<b>Technical reviewer :</b> Mr. Praveen Nagaraje Urs	

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## 1 Introduction

### 1.1 Objective

The purpose of this verification, by independent checking of objective evidence, is as follows:

- to verify that the project is implemented as described in the VCS PD;
- to confirm that the monitoring system is implemented and fully functional to generate Voluntary Emission Reductions (VERs/VCUs<sup>1</sup>) without any double counting, and
- to establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation.

### 1.2 Scope and Criteria

The verification of this VCS project is based on the monitoring report, registered VCS PD and supporting documents made available to the verifier and information collected through performing interviews during the on-site assessment. Furthermore publicly available information was considered as far as available and required.

The TÜV Rheinland Japan Ltd has employed a rule-based approach in the verification, focusing on the identification of significant risks and reliability of project monitoring and generation of emission reductions.

### 1.3 VCS project Description

The project activity "16.0 MW bagasse based cogeneration project at Ahmadnagar, Maharashtra by M/s Mula Sahakari Sakhar Karkhana Ltd." is a power capacity expansion grid connected cogeneration project. It is implemented by M/s Mula Sahakari Sakhar Karkhana Ltd and involves the installation of a new power plant having rated capacity of 16 MW, which is operated next to the existing equipments to fulfil the steam and power requirement of the sugar mill and the surplus power has been exported to the integrated NEWNE grid on and from 11/12/2006 /P05/, /P06/, (=VCS starting date).

The section 7.6 of "VCS guidance document: VCS Project registration and VCU Issuance Process (Ver 1.1)" requires

<sup>1</sup> As per VCS, Verified Emission Reductions (VERs) are considered to be VCUs only after successful registration in an approved VCU Registry

that "VCS 2007 validations shall be completed within two years of the project start date, or shall be completed or contracted before 19 November 2008. In relation to contracts entered into before 19 November 2008, validation shall be completed by 19 November 2009 and proof of contracting prior to 19 November 2008 shall be provided. The validation contract of this project activity in between validator and PP is signed on 18/11/2008 /P28/ i.e. within the time limit mentioned as per VCSA above.

The starting date of this project activity is 11/12/2006 /P05/, /P06/ and the validation of this project is completed on 19/11/2009 /B08/. Hence, this project activity fulfils the above VCSA requirement.

As per the VCS program updates dated 21 January 2010 the changes to the definition of "Proof of Title" and requirements with respect to evidencing proof of "Right of use" the validated documents of Proof of Title i.e. EPA /P12/, /P25/ is matching with the evidencing proof for Right of Use "a right of use arising or granted under statute, regulation or decree by a competent authority" i.e. the right of PP to use the ERs arises due to this project activity provided by MSEDCL EPA. Hence, it fulfils the definition of Right of Use with evidencing proof /P25/.

The rated installed capacity of the project activity is 16 MW (as per section 3.30(Specification for generator) at page no. 59 of the contract agreement for 16 MW steam Turbine Generator). The project activity is generating electricity for the in-house consumption of Sugar plant at the same time exporting the surplus electricity to Grid during the reported monitoring period 01/01/2007 to 31/12/2008(inclusive of both the days).

The project activity has been implemented as described in the approved VCS PD, in particular, Sections 1, 3.2, 3.3, 3.4 of the approved VCS PD/B02/. The project utilizes bagasse generated in the sugar mill. The project uses a double extraction cum condensing type turbo generator coupled with a high pressure boiler. The boiler has a steam generation capacity of 80 tones per hour at a pressure of 67 kg/cm<sup>2</sup> and a temperature of 495 +/-5 °C.

The project activity is in continuous operation during the reported monitoring period, 01/01/2007 to 31/12/2008(inclusive both days). The project activity is located at Village-Sonai, Taluka - Newasa, District Ahmednagar, Maharashtra, 414105, India.

The steam from the 16 MW turbine extractions (of the project activity) is fulfilling the steam requirement of the Sugar mill. All the bagasse generated in the sugar plant is utilized in the project activity. The validated ex-ante grid emission factor (0.80 tCO<sub>2</sub>e/MWh /B02/) of integrated NEWNE grid is applied for the calculation of baseline emission and emission reduction of this monitoring period.

Power generated from the turbo generator is at 11 kV and this is being stepped up to 132 kV at the sub-station before being sent to the grid.

During the reported monitoring period 01/01/2007 to 31/12/2008(inclusive both days) the project activity has reduced 19,316 tCO<sub>2</sub>e.

#### **1.4 Level of assurance**

The verification report is based on VCS PD, Validation report and Monitoring report with supporting documents made available to the verifier and information collected through performing interviews and during the on-site assessment. The verification opinion is assured provided the credibility of all above.

## **2 Methodology**

The verification of the project was carried out from February 2010 to September 2010.

On-site validation and verification	2010-02-17 to 2010-02-19
(Final) Reporting	2010-11-16

The verification consists of the following steps:

- A desk review of the VCS PD , Validation report, Monitoring report and supporting documents with the use of the relevant sections of a customised protocol according to the VCS 2007.1;
- A desk review of the Monitoring Report and additional supporting documents which were submitted by the PP. The relevant sections of the above mentioned customised protocol according to the VCS 2007.1 were used;
- Verification audit planning;
- On-Site assessment;

- Background investigation and follow-up interviews with personnel of the project developer; and
- Verification reporting (Draft Verification Report and Final Verification Report).

The criteria of this verification include the relevant rules and steps as set out in the VCS 2007.1 and VCSA rules.

### 3 Verification Findings

The findings of verification are summarised in table 3-1:

Table 3-1: Summary of CAR, FAR and CR issued

Verification topic (Cp VCS Verification Report Template)	No. of CAR	No. of FAR	No. of CR
Remaining issues, including any material discrepancy, from previous validation (Sec 3.1).	00	00	00
Project Implementation (Sec 3.2).	00	00	04
Completeness of Monitoring (Sec 3.3).	06	00	06
Accuracy of Emission Reduction Calculations (Sec 3.4).	03	00	05
Quality of Evidence to Determine Emission Reductions (Sec 3.5).	00	00	00
Management and Operational System (Sec 3.6).	01	00	01
<b>SUM</b>	<b>10</b>	<b>00</b>	<b>16</b>

For an in-depth analysis/evaluation of all CARs and CRs can be referred to the below sections from 3.1 to 3.6.

#### **3.1 Remaining issues, including any material discrepancy, from previous validation**

The raised CARs and CRs were successfully closed during the validation of the project design. There are no remaining issues.



### 3.2 Project Implementation

The project activity by M/s Mula Sahakari Sakhar Karkhana Ltd. is a large-scale project involving installation of 16 MW Co-generation plant within the premises of Sugar Mill of M/s Mula Sahakari Sakhar Karkhana Ltd. The main purpose of the project activity is to full-fill the sugar mill in-house steam and electricity requirement and export the surplus electricity to the grid. The fuel used in this 16 MW cogeneration plant is bagasse a by product of the Sugar Production process. This project activity is operated next to the existing equipments. The verification team have checked the same during the site visit and found that the project has been implemented as described in section 1.4, 1.7 and 1.9 of the approved VCS PD. However, during the site visit and document review CR-01 to CR-04 were raised by the verification team.

The project activity has been commissioned on 11<sup>th</sup> December 2006 as per the Monitoring report, Verification team has raised CR 01 on the same and asked PP to submit the proof of starting date of commercial operation. PP has submitted the proof of the start date of the commercial operation of the project /P05/, /P06/. The verification team has checked the documents and found the date is correct and in line with the date written on the Monitoring Report. Hence CR 01 has been successfully closed.

It was not clear from the write up in the Monitoring Report /P01/ (page no.5) where the prevailing condition of the electricity generation in the NEWNE grid was explained. The context and usage of this particular sentence was not clear under this section, hence the Verification team has raised CR 02 in this regard. PP has appropriately modified the write up in the monitoring report /P02/ and the same was checked found OK. Hence CR 02 has been closed.

The monitoring report /P01/ (page no.5) has indicated the electricity generation of 59.83 million kWh annually which is contradicting the actual electricity generation from the project in the reported monitoring period. In this context Verification team has raised CR 03 to clarify whether the indicated electricity generation is based on the designed capacity of the plant or the actual electricity generation during the reported Monitoring period. PP has appropriately modified the write-up in the revised Monitoring Report /P02/ and also clarified that the 59.83 million kWh of electricity annually is based on designed capacity of the project as per the approved VCS PD. The justification and the revision in the Monitoring

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Report has been found correct and appropriate, hence CR 03 has been closed.

It was observed from section 2 of the monitoring report /P01/ that the project activity was commissioned on 11/12/2006 and operational, where as write-up in section 6.2, page 8 of the MR has indicated the project as proposed project activity which is contradictory. In this regard verification team has raised CR 04 to clarify the same. PP has appropriately reworded the write-up in the Monitoring Report, which is found correct and represents the exact situation of the reported monitoring period as well. Hence CR 04 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p><b>CR 01</b> As per section 2, page 3 of the MR, the project activity was commissioned on 11/12/2006. PP is requested to provide the valid supporting document in this context.</p>	<p>/P01/</p>	<p>Yes, the project activity was commissioned on 11/12/2006, which is start date of the VCS project activity as well. The proof of start of commercial operation to demonstrate the same has been submitted to the DOE.</p>	<p>--</p>	<p>OK, PP has provided the documentary proof (log book of TG operation) for the start date of the commercial operation /P05/. The same was checked and the date mentioned in the submitted document is inline with the date mentioned</p>

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
				in the Monitoring Report, hence the CR 01 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<b>CR 02</b> As mentioned in section 5, page 4 of the MR, "The prevailing condition ..... connected thermal power plant" is out of context with respect to this monitoring period. The information in the MR should be specific to the monitoring period.	/P01/	The statement written was a generic statement and it is not related to the reported monitoring period and the same has been removed from the revised version of monitoring report.	Section 5 of monitoring report.	OK, required correction has been done in the Section 5 of monitoring report and the same is found appropriate, hence CR 02 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<b>CR 03</b> The annual generation capacity of the project activity	/P01/	The annual generation provided in section	Section 5 of monitoring Report.	Ok, PP has appropriately

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
as mentioned in section 5 of this MR is 59.83 million kWh. It is unclear whether the mentioned generation capacity (= 59.83 million kWh) corresponds to the design capacity of the project activity.		5 of the MR i.e. 59.83 million kWh is based on the design capacity of the project plant as per the approved VCS PD. This is not the actual generation for the reported monitoring period and now been removed from the revised Monitoring report.		corrected the write up in the section 5 of the Monitoring Report, the same was checked and found correct. Furthermore, it was also verified the value mentioned in /P01/ i.e. 59.83 million kWh was based on the designed capacity of the plant as per the approved VCS PD, hence the CR 03 has been closed.

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
CR 04				

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
From section 2 of the MR/P01/ the project activity was commissioned on 11/12/2006 and operational. However the statement mentioned in section 6.2, page 8 "The <b>proposed</b> project activity ..... Consumption for the project" is contradictory.	/P01/	The statement in section 6.2 of the Monitoring report has appropriately corrected to present the actual situation of the project during reported monitoring period.	Section 6.2 of Monitoring Report.	OK, write up in the section 6.2 of the revised Monitoring Report has been appropriately reworded by the PP. Hence CR 04 has been closed.

### 3.3 Completeness of Monitoring

The monitoring report /P02/ is in line with the requirements of the approved monitoring plan/B02/ and with the applied and approved consolidated methodology ACM0006 version 09.

However during the course of verification, the verification team has raised CAR-01 to CAR-06 and CR-05 to CR-10 on the issues which were either not clear or requires further documentation.

From the Monitoring Report /P01/, actual monitoring plan which is implemented was not clear and it was also not clear whether it is as per the approved Monitoring plan /B02/ or not. In this regard CR 05 has been raised. The justification and correction made by the PP in Monitoring Report is found appropriate and it also represent the actual monitoring plan implemented by the PP for the project activity and the same was verified at the time of site visit interviews/I02/. Hence CR 05 has been closed.

Reporting frequency and the description as per the table 01 of monitoring report /P01/ for the parameter  $EG_{\text{project plant},y}$  and  $EG_{\text{total},y}$  respectively were not clearly written and contradicting the actual scenario (as observed during the

site visit) and as per the approved VCS PD. For the same CR 06 and CR 07 has been raised to clarify the recording frequency and description of the monitoring parameter  $EG_{\text{project plant},y}$  and  $EG_{\text{total},y}$  respectively. PP has corrected the recording frequency of the  $EG_{\text{project plant},y}$  and the description of the  $EG_{\text{total},y}$  in the monitoring report /P02/. The correction in the revised document /P02/ has been checked by the verification team and found correct and in line with the approved VCS PD /B02/. Hence CR 06 and CR 07 have been closed.

Furthermore the description under "Recording Frequency" for  $EG_{\text{total},y}$  in table 1, page 12 "Daily at the plant and monthly by the **state utility**" does not comply the description of  $EG_{\text{total},y}$  in the approved VCD PD (Refer section 3.2 page 35 of the PD). State utility is not responsible for monitoring of electricity generation from the project, instead the responsibility lies with the "MSSKL Plant operators and shift engineer". In this context CR 08 has been raised. In the revised Monitoring report /P02/, the description has been corrected and the same has been checked and deemed ok. Hence CR 08 has been closed.

The calculation procedure for the parameter  $EG_y$  was not clear from the monitoring report/P01/ and the same is also not inline with the requirement of approved consolidated methodology. As per the applied methodology i.e. ACM0006, ver 09, equation 15(b) minimum of the electricity values between  $EG_{\text{project plant},y}$  and the  $EG_{\text{total},y} - EG_{\text{historic},3yr}/3$  should be used for the calculation of  $EG_y$  for the corresponding year. The draft monitoring report/P01/ failed to describe the same and it was also not clear, whether it has been calculated as per the above mentioned equation of the approved consolidated methodology or not. Furthermore table 1 (write up under comment) of the monitoring report was also incorrectly described. In this regard CAR 1 has been raised. Acting on the CAR 01, PP has appropriately and transparently presented the calculation approach based on the formula mentioned in the eq. 15(b) of the ACM0006, version 09 in the revised Monitoring Report /P02/ and emission reduction excel sheet /P04/. The calculation approach has been checked both in the Monitoring report /P02/ and emission reduction excel sheet /P04/ and found correct and in line with the methodological requirement. Hence CAR 01 has been successfully closed.

Furthermore, it was found that the details of the meters under the heading "Metering Instrument Number & description" for the measurement of the parameters "Gross Weight of Juice" and "Weight of added water" i.e.

"Calibration certificate of juice tank" and "Calibration certificate of water tank" is unclear in the draft monitoring report /P01/. In this context CAR 02 has been raised and in the response, PP has corrected the Monitoring equipment description for the parameter "Gross Weight of Juice" and "Weight of added water" under the revised heading "Measuring Instrument Serial Number" in the revised monitoring report /P02/. The correction has been checked by the verification team and found ok; hence CAR 02 has been closed.

In the appendix 1 of the Monitoring report, PP has given the electricity balance of the project activity by summarizing the Gross electricity generation, export, import, auxiliary consumption and subsequently net electricity generation from the project. It is not clear why the values of export and import has been provided for, as the Net electricity generation by the project, as per the approved VCS PD and corresponding spread sheet is calculated based on Gross generation minus auxiliary consumption. As per the registered PD only the relevant information have to be provided. In this context CAR 03 has been raised. PP has revised the MR /P02/ accordingly and presented only the relevant information. Hence CAR 03 has been closed.

Furthermore, in the appendix 1 of the Monitoring report PP has provided the operation details of the project activity in days. Verification team has raised CAR 04 to include the same in hourly basis. PP has included the operating details of the plant on hourly basis. Verification team has checked the information provided in the revised Monitoring report /P02/, against the submitted document/P07/(3) and found the same correct, hence CAR 04 has been closed.

The total bagasse generated from the sugar plant in a year as per the approved VCS PD is as per the below mentioned enumeration.

Total Bagasse (MT) produced from the sugar industry =  
 Weight of cane (MT) + Weight of added water (MT) - Gross weight of juice (MT)

PP has provided month-wise bagasse production details in appendix 1 of the Monitoring period; however the Reporting frequency of the same is on annual basis as per the approved VCS PD. Verification team has raised CAR 05 in this regard to include the same in year wise in MT/year as per the approved monitoring plan, the same has been

reported annually by the PP and found correct, hence CAR 05 has been closed.

As per the Monitoring report appendix 1 PP has provided the Bagasse generation details from the Sugar plant along with Bagasse saved in the particular year. The bagasse saved in a particular year i.e. 2007 and 2008 was written as 0 MT. The verification team has raised CR 09 for the credible documentary evidence for the same and to provide and substantiate the fact that how the start-up has been done, as initially it has no saved bagasse. The justification and document provided by the PP address the issue raised and the same is deemed to be OK. For detail closure of this CR, please refer to the table below.

As per the approved monitoring plan Gross Calorific Value of different fossil fuels used in a year  $y$  for the calculation of grid emission factor,  $(GCV_{i,y})$  has been considered as Monitoring Parameter, however the Monitoring report does not address the same. The verification team has raised CAR 06 to address the same in MR. In the revised Monitoring Report/P02/, PP has included this parameter under table 1 and also provided the monitored value of  $GCV_{i,y}$ , which is as follows:

Fossil Fuel	GCV (kcal/kg)
Coal	3,755
Gas	8,800
Oil	10,100
Diesel	10,500
Naphtha	11,300

The verification team has checked the value  $GCV_{i,y}$ , which is as per the latest available version of CEA database (Version 05) <http://www.cea.nic.in/planning/c%20and%20e/government%20of%20india%20website.htm>. Hence required correction has been made by the PP and CAR 06 has been closed.

Furthermore the unit, description and method of calculation of  $Q_{Tot,proj,y}$  was not clear from the draft monitoring report and requires further elaboration in accordance with approved VCS PD and the methodology ACM0006, version 09. Verification team has raised CR 10 in this regard. In the response, PP has clarified that  $Q_{Tot,proj,y}$  has been monitored as per the approved monitoring plan only and also corrected the unit of this parameter in the revised monitoring report/P02/. The same was checked and found correct, hence CR 10 has been closed.



The details of the CARs and CRs under this section has been summarised in the table below.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p><b>CR 05</b></p> <p>The monitoring of the parameter should refer and comply the monitoring plan of the approved VCD PD. However the description provided in the MR, section 6.2, page 7 "As per the ISO 14064-2, ..... Managing data quality", it is unclear whether PP has referred the monitoring plan of the approved VCD PD.</p>	/P01/	<p>Yes, the PP has used approved monitoring plan for the monitoring of the parameters used for the estimations of emission reductions from the project. The reference of the ISO 14064-2 has been provided in the approved monitoring plan as well. Furthermore the VCS project manual for the project is attached which clearly mention the monitoring structure</p>	Section 6.2 of Monitoring Report.	<p>The verification team has received the monitoring manual /P14/ prepared by the PP for the present VCS project. From the document review and site visit, verification team confirmed that monitoring plan of the project activity is as per the registered monitoring plan. Also, the description provided in the Monitoring report</p>

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
		of the project and the same has been fully complied for the reported monitoring period as well.		is inline with the approved VCS PD and the same is found appropriately applied for the project activity for the reported monitoring period, hence the CR 05 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<b>CR 06</b> EG <sub>project plant,y</sub> is "The net quantity of electricity generation as a result of the project activity during the year y." (= gross generation - auxiliary consumption). However under the description of "Recording Frequency" in Table 1 for EG <sub>project plant,y</sub> , it has referred to	/P01/	Yes, The net quantity of electricity generation as a result of the project activity during the year y has been calculated based on the	Table 1 of Monitoring Report.	Verification team has checked the revised Monitoring Report /P02/ provided by the PP. the verification team has also verified that only the wrong

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p>the meter utilised for recording the export to the grid. A part of energy produced in the project activity is consumed in the sugar plant and the auxiliary and the remaining part is exported to grid, which differs from the net generation. Therefore the reference provided for <math>EG_{\text{project plant,y}}</math> under "Recording Frequency" in table - 1 is incorrect.</p>		<p>measured parameter gross electricity generation and auxiliary consumption. Since, <math>EG_{\text{project plant,y}}</math> is used in the emission reduction calculation, export of electricity is not a relevant parameter for the present case, hence the required correction has been made under Table 1 of the revised monitoring report.</p>		<p>reference of the meter was given however the calculation approach for <math>EG_{\text{project plant,y}}</math> is according to the approach given in the table (for <math>EG_{\text{project plant,y}}</math>) under the section 3.2 of the registered VCS PD /B02/. The required changes has been done in the revised document, hence CR 06 has been closed.</p>

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
CR 07				

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
The <u>description</u> of $EG_{total,y}$ in <u>table 1</u> , page 12 of the MR "Net quantity of electricity generated in all power plants at the project site" <u>differs</u> with the description "Net quantity of electricity generated in all power plants at the project site, generated from firing the same type(s) of biomass residues as in the project plant, including the new power plant installed as part of the project activity and any previously existing plants, during the year y" of the same parameter ( $EG_{total,y}$ ) in <u>section 3.3</u> , page 40 of the approved VCD PD.	/P01/	The description of $EG_{total,y}$ in table 1 has been corrected in the revised Monitoring Report and the same is now inline with description mentioned in section 3.3 of the approved VCS PD.	Table 1 of Monitoring Report.	Verification team has checked the revised Monitoring Report /P02/ provided by the PP and the required changes has been done in the revised document, hence CR 07 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<b>CR 08</b> The description under "Recording Frequency" for $EG_{total,y}$ in table 1,	/P01/	The required correction has been	Table 1 of Monitoring Report.	PP has appropriately revised

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
page 12 "Daily at the plant and monthly by the state utility" does not comply the description of $EG_{total,y}$ in the approved VCD PD (Refer section 3.2 page 35 of the PD). i.e. state utility is not responsible for monitoring of , instead the responsibility lies with the "MSSKL Plant operators and shift engineer". PP need to do the necessary correction.		made under Table 1 of the revised monitoring report and the description is corrected appropriately.		the monitoring report. The description provided for the recording frequency for the parameter $EG_{total,y}$ in table 1 of the revised monitoring report is correct and inline with the approved VCS PD. The same has also verified from the site visit. Hence CR 08 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<b>CAR 01</b> The description under "Comment" for $EG_{total,y}$ in table 1, page 12	/P01/	The Description under the	Table 1 of Monitoring Report.	Verification team has reviewed

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p>of MR "As per the methodology ACM 0006, version 09 minimum of the <math>EG_y</math> value should be taken for the calculation of emission reduction" does not corresponds to equation (15b) of the applied methodology, ACM 0006, ver 09 (Cp page 34 and 35 of the applied meth. Instead "<math>EG_y</math> corresponds to the lower value between (a) the net quantity of electricity generated in the new power plant that is installed as part of the project activity (<math>EG_{project\ plant,y}</math>) and (b) the difference between the total net electricity generation from firing the same type(s) of biomass residues at the project site (<math>EG_{total,y}</math>) and the historical generation of the existing power plant(s) (<math>EG_{historic,3yr}</math>), based on the three most recent years". PP needs to make the necessary</p>		<p>comment of table 1 of the Monitoring Report has been appropriately corrected considering the eq. 15b of the methodology. Also <math>EG_{historic,3yr}</math> has been included in the table of the revised monitoring report as per the registered PD</p> <p>Moreover, According to equation (15b) of the applied methodology, ACM 0006, ver 09, "<math>EG_y</math> should corresponds to the lower value between:</p> <p>(a) the</p>		<p>the revised monitoring report and the description under table 1 of the monitoring report corrected by the PP. Also PP has transparently presented the calculation approach for parameter <math>EG_y</math>, in line with eq. 15 b of the methodology. The verification team has checked the calculation approach in the revised MR/P02/ and found correct and inline with the</p>

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p>correction.</p> <p>And also the details mentioned in the MR, page 43 "So, the minimum value of <math>EG_y</math> has been used for the calculation of Emission reduction from the project." Should be corrected accordingly.</p>		<p>net quantity of electricity generated in the new power plant that is installed as part of the project activity (<math>EG_{\text{project plant},y}</math>) and (b) the difference between the total net electricity generation from firing the same type(s) of biomass residues at the project site (<math>EG_{\text{total},y}</math>) and the historical generation of the existing power plant(s) (<math>EG_{\text{historic},3y_r}</math>), based on the three most</p>		<p>Registered PD /B02/. Hence CAR 01 has been successfully closed.</p>

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
		<p>recent years". Hence minimum of the above mentioned (a) and (b) has been used for the calculation of incremental increase of electricity generation from the project and the same has been transparently mentioned in the calculation procedure of the revised monitoring report as well as in the revised emission reduction excel sheet.</p>		



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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p><b>CAR 02</b></p> <p>The details of the meters under the heading "Metering Instrument Number &amp; description" for the measurement of the parameters "Gross weight of Juice" and "Weight of added water" i.e. "Calibration certificate of juice tank" and "Calibration certificate of water tank" is unclear. PP is requested to provide the correct details.</p>	/P01/	<p>The details of the calibration in table 3 of the Monitoring Report has been corrected, please refer to the revised section of the Monitoring Report.</p>	Table 3 of Monitoring Report.	<p>The details of the meters under the heading "Metering Instrument Number &amp; description" for the measurement of the parameters "Gross weight of Juice" and "Weight of added water" has been appropriately corrected in the revised document/P02. Hence CAR 02 has been closed.</p>

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p><b>CAR 03</b></p> <p>It is unclear that the export and import values of electricity as</p>	/P01/	<p>Yes, export and import of the</p>	Appendix 1 of Monitoring Report.	<p>Verification team has checked</p>

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p>given in Appendix -1 for the parameter <math>EG_{project\ plant,y}</math> is the electricity exported / imported to / from the grid (=State utility).</p> <p><math>EG_{project\ plant,y}</math> is "The net quantity of electricity generation as a result of the project activity during the year y" (= gross generation - auxiliary consumption). The estimation of <math>EG_{project\ plant,y}</math> does not required the monitoring of Export and Import electricity to the grid (Cp section 3.2 and 3.3 of the PD). PP should provide only the relevant information as per the approved Monitoring plan.</p>		<p>electricity is not a part of the monitoring plan and the Monitored parameter i.e. <math>EG_{project\ plant,y}</math>, <math>EG_{total,y}</math> and <math>EG_{historic, 3yr}</math> are not dependent on the import and export of the electricity. The same has now been removed from the revised Monitoring report for better transparency.</p>		<p>the revised monitoring report and found that appropriate changes has been done by the PP acting on the CAR, hence CAR 03 has been closed.</p>

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p><b>CAR 04</b> The "month-wise operating details" in Appendix 1, page 32 should be</p>	/P01/	The operating details of the	Appendix 1 of Monitoring Report.	PP has included the operating

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
represented in hourly basis as the energy generated and consumption (Auxiliary consumption) is represented as hourly function (i.e. kWh)		project have now been provided in hourly terms. Please refer to the revised Monitoring Report.		details of the project plant in hourly format in the revised monitoring report, the same has been checked against the submitted document/ P07/(3). Hence CAR 04 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<b>CAR 05</b> The unit of measurement for "Weight of Cane", "Weight of Added Water" and "Gross Weight of Juice" as per approved PD is MT/Year (Cp page 44 and 45 of PD). However the yearly data of the above mentioned parameters are not provided in the MR (Refer Appendix 1, page 37 of MR).	/P01/	The yearly value of the monitoring parameter "Weight of Cane", "Weight of Added Water" and "Gross Weight of Juice" has been provided in appendix 1	Appendix 1 of Monitoring Report.	PP has provided the yearly data for the parameters "Weight of Cane", "Weight of Added Water" and "Gross Weight of Juice" in Appendix

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
		of the Monitoring report inline with the provisions made under approved VCS PD.		1 of the revised monitoring report/P02/. Furthermore verification team has also checked the Quantity register/P07/(4) and found the values for these parameters correct. Hence CAR 05 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<b>CR 09</b> The amount of bagasse saved for the year 2007, 2008 (till 31/12/2008) as per the MR is ZERO (Refer Appendix 1, page 37 of MR). PP needs to demonstrate the	/P01/	The justification for this CR contains two fold. The crushing season usually starts	Appendix 1 of Monitoring Report.	Verification team has checked the Challan receipt (generated after weighing

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p>same with credible evidence.</p> <p>Also PP needs to clarify how the boilers are started during the next season in-case there is no bagasse left from the previous season.</p>		<p>from October to June whereas for the quantification of the biomass quantity for Carbon credit project is based on calendar year format i.e. Jan-Dec., the bagasse saved mentioned in version 1 of the MR is correct as the end of the year i.e. December, the saved bagasse is zero. The following table illustrates quantity of saved bagasse during end of crushing season which is relevant to the</p>		<p>of saved bagasse) /P31/ and found that the statement on saved bagasse at the end of crushing season is correct, however it is also confirmed that at the end of calendar year the quantity of saved Bagasse is zero only as whatever bagasse quantity generated by the sugar mill is being used in all power plants at the site. For start up purpose in 2007-08 season there was bagasse</p>

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion						
		<p>reported monitoring period.</p> <table border="1" data-bbox="787 478 966 619"> <thead> <tr> <th>Season</th> <th>Saved Bagasse (MT)</th> </tr> </thead> <tbody> <tr> <td>06-07</td> <td>200</td> </tr> <tr> <td>07-08</td> <td>0</td> </tr> </tbody> </table> <p>Source: Challan receipt</p> <p>As evident from the above table that the PP had sufficient quantity of bagasse for 2007-08 start up. As there was no saved bagasse in 2007-08 crushing season, start up for 2008-09 has been done based on following way. In following season, only existing boilers at site were operated on the fuel wood</p>	Season	Saved Bagasse (MT)	06-07	200	07-08	0		<p>available to the PP, for 2008-09 start up no saved bagasse was available. The justification provided by the PP in the response of this CR has been checked against the submitted i.e. sample copy of log book for both project plant and the existing boilers/P 07/ and it is confirmed that the PP has started operation of the 80 TPH boiler (from 04/11/2007 and</p>
Season	Saved Bagasse (MT)									
06-07	200									
07-08	0									

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
		<p>(since for these boilers fuel wood can be used) and was clarified during the course of validation, after few days when the sugar plant runs on these existing boilers and produced enough bagasse to run the project plant, then only 80 TPH boiler was started and afterwards the process was smoothed and the project plant was able to operated. The sample copy of log-books for the boiler</p>		<p>14/11/2008 for the season 2007-08 and 2008-09 respectively) only after few days of operation of the existing boilers (all existing boilers (2X25 TPH and 35 TPH) started from 26/10/2007 and 05/11/2008 for the season 2007-08 and 2008-09 respectively), when sufficient quantity of bagasse was available to the plant. Hence the justification provided</p>

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
		<p>start-up has been submitted to the DOE.</p>		<p>by the PP is convincing. Furthermore, verification team has also referred to the CAR 3.3 of the validation report in which the usage of the fuel wood has been clearly justified by the PP and it was also clarified at that time by the manufacturer /P29/of the project plant boiler that it is not designed to use firewood logs. Hence based on above, CR 09 has</p>



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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
				been closed.

CAR/CL/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
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<p><b>CAR 06</b>                      Gross Calorific Value of different fossil fuels used in a year <math>y</math>, (<math>GCV_{i,y}</math>) is a monitoring parameter (Cp page 46 of PD). However the MR does not address this parameter.</p>	/P01/	<p>Yes, the <math>GCV_{i,y}</math> is a monitoring parameter and the same has now been included as a monitoring parameter in table 1 and appendix 1 of the revised Monitoring report.</p>	<p>Table 1 and appendix 1 of Monitoring Report.</p>	<p>In the revised Monitoring Report/P02/, PP has included <math>GCV_{i,y}</math> under table 1 as a monitoring parameter and also provided the monitored value of <math>GCV_{i,y}</math> in appendix 1. The same was checked against the reference provided i.e. CEA database version 05/W03/ and found correct. Hence CAR 06 has</p>
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VCS 2007.1 Verification Report

CAR/CL/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
				been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p><b>CR 10</b></p> <p>According to the PD (Page 38), <math>Q_{Tot,proj,y}</math> should be monitored on daily basis. As only the yearly value (TJ/year) is mentioned in the MR (Cp Appendix 1 page 41), PP needs to transparent describe how the daily monitoring is done and procedure of estimating the yearly value from the daily measurement data.</p> <p>Also the unit mentioned in the MR (TJ/year) differs form the unit of monitoring (GJ/year) in the PD (Cp page 43 of PD).</p>	/P01/	<p><math>Q_{Tot,proj,y}</math> is calculated on a daily basis, based on the difference of enthalpy of the generated steam and feed water as mentioned in the approved VCS PD. The summarization of the <math>Q_{Tot,proj,y}</math> on a yearly basis is provided in the Monitoring report as including daily records for the entire monitoring</p>	Appendix 1 of Monitoring Report.	<p>Verification team is in receipt of the excel sheet /P30/containing the entire calculation on a daily basis for the parameter <math>Q_{Tot,proj,y}</math> along with the sample copy of log book(start and end of the month)/P07/(05,06).</p> <p>Verification team based on above document review and on site</p>

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
		<p>period in the monitoring report is not possible, however the excel sheet containing the entire calculation on a daily basis is attached with response along with the sample copy of log book(start and end of the month) to justify the fact that the monitoring of <math>Q_{Tot,proj,y}</math> is done on a daily basis as per the approved VCS PD. The unit of the parameter is also changed as per the approved VCS PD.</p>		<p>verification confirms that the monitoring of <math>Q_{tot,proj,y}</math> is done on a daily basis and it is inline with the approved monitoring plan and hence the CR 10 has been closed.</p>

### 3.4 Accuracy of Emission Reduction Calculations

The calculation of the GHG emissions has been done as per ACM0006, Version 09. The emission reduction  $ER_y$  by the project activity during a given year  $y$  has been calculated as per equation 1 of the applied methodology.

$$ER_y = ER_{heat,y} + ER_{electricity,y} + BE_{biomass} - PE_y - L_y$$

For the present project activity there is no project emissions for the present monitoring period and the reasons for the same are as below:

- a. The PP has not used any fossil fuel for the present monitoring period and hence the project emissions due to use of fossil fuel is considered to be zero, the same has been verified during the onsite visit and document review from RT-8c /P27/ (which has been submitted to the government body and a reliable and credible source for the sugar industry of India).
- b. There is no biomass transportation involved as the bagasse requirement is fulfilled by the sugar plant only. This was verified during site visit and and document review /P07/.

Hence  $PE_y$  for the present monitoring period is 0 and the same is deemed to be OK and verified during the course of verification.

Scenario 13 of ACM0006, version 09 does not call for determination of leakages. Hence  $L_y$  is zero and deemed to be ok.

#### Emission reductions due to displacement of electricity

$$ER_{electricity,y} = EG_y \cdot EF_{electricity,y}$$

Where:

$ER_{electricity,y}$  = Emission reductions due to displacement of electricity during the year  $y$  (tCO<sub>2</sub>/yr)

$EG_y$  = Net quantity of increased electricity generation as a result of the project activity (incremental to baseline generation) during the year  $y$  (MWh)

$EF_{electricity,y}$  = CO<sub>2</sub> emission factor for the electricity displaced due to the project activity during the year  $y$  (tCO<sub>2</sub>/MWh)

The grid emission factor of 0.80 tCO<sub>2</sub>/MWh, determined ex-ante has been applied. The emission factor for project

activity is as per guidance of ACM 0006 / version 09, in line with the requirements of ACM 0002 / Version 09 where combined margin of build margin and operating margin are used. MSSKL has calculated emission factor for NEWNE grid of India taking source data from "CO2 Baseline Database for Indian Power Sector (Version 4.0) "published by Central Electricity Authority and the results has been validated during the course of validation. Furthermore, as per the approved monitoring plan Gross Calorific Value of different fossil fuels used in a year  $y$  for the calculation of grid emission factor,  $(GCV_{i,y})$  has been considered as Monitoring Parameter. The verification team has checked the value  $GCV_{i,y}$ , which is as per the latest available version of CEA database (Version 05) <http://www.cea.nic.in/planning/c%20and%20e/government%20of%20india%20website.htm>. It was verified that the values of  $GCV_{i,y}$ , is same as mentioned in the approved VCS PD, which has been used for the calculation of grid emission factor.

$EG_y$  for the present case, which falls under scenario 13 of the approved consolidated methodology has been calculated in accordance with the following formula:

$$EG_y = \text{MIN} \left\{ \begin{array}{l} EG_{\text{projectplant}y} \\ EG_{\text{total}y} - \frac{EG_{\text{historic3yr}}}{3} \end{array} \right\} - \epsilon_{\text{el,otherplant}(s)} \cdot \frac{1}{3.6} \cdot \sum_k BF_{k,y} \cdot NCV_k$$

Where:

$EG_y$  = Net quantity of increased electricity generation as a result of the project activity (incremental to baseline generation) during the year  $y$  (MWh)

$EG_{\text{project plant},y}$  = Net quantity of electricity generated in the project plant during the year  $y$  (MWh)

$e_{\text{el,otherplants}}$  = Average net energy efficiency of electricity generation in (the) other power plant(s) that would use the biomass residues fired in the project plant in the absence of the project activity ( $MWh_{\text{el}}/MWh_{\text{biomass}}$ )

$EG_{\text{total},y}$  = Net quantity of electricity generated in all power plants at the project site, generated from firing the same type(s) of biomass residues as in the project plant, including the new power plant installed as part of the project activity and any previously existing

plants, during the year  $y$  (MWh/yr)

$EG_{historic, 3yr}$  = Net quantity of electricity generated during the most recent three years in all power plants at the project site, generated from firing the same type(s) of biomass residues as in the project plant (MWh)

$BF_{k,y}$  = Quantity of biomass residue type  $k$  combusted in the project plant during the year  $y$  (tons of dry matter or liter)

$NCV_k$  = Net calorific value of the biomass residue type  $k$  (GJ/ton of dry matter or GJ/liter)

PP has appropriately and transparently presented all the above parameter for the calculation of  $EG_y$  in the monitoring report and in the emission reduction excel sheet. The Net quantity of increased electricity generation as a result of the project activity (incremental to baseline generation) during the year  $y$  (MWh) is dependent (as evident from the above mentioned formula) on the parameters like  $EG_{project\ plant,y}$ ,  $e_{el,otherplants}$ ,  $EG_{total,y}$ ,  $EG_{historic,3yr}$ ,  $BF_{k,y}$  and  $NCV_k$  and the verification team has checked the emission reduction calculation and all the parameters by following means:

- **Parameters**  $EG_{project\ plant,y}$ ,  $EG_{total,y}$ , and  $EG_{historic,3yr}$ , - Verification team has checked gross generation details of project plant and existing power plant required for  $EG_{total,y}$ , and  $EG_{historic,3yr}$ , against the submitted documents log books/P07/(1),(2) and verified the same inline as mentioned in the Monitoring Report/P02/. However it was found that the value of gross electricity generation from the project plant was different from the log book details. In this regard Verification team has raised CAR 08. PP has appropriately corrected the values of gross electricity generation from the project activity in the revised emission reduction spread sheet/P04/ and revised monitoring report/P02/, the verification team has re-checked the revised submission against the submitted documents, log book /P07/(1),(2) and found the same correct, hence CAR 09 has been closed.

The calculation procedure for the net electricity generated is deemed to be ok, as it deducted the auxiliary consumption from the gross generation figure. It was found during the course of document review that PP has not included the auxiliary consumption of 16 TG while deriving the net electricity generation from the project plant. For the same Verification team has raised CAR 07 in this regard. PP has appropriately included the auxiliary consumption of the boiler and TG in the calculation of the net electricity generated by the project activity and the

same has been re-checked against the submitted documents, log books/P07/(7) and found correct. All the meters associated with the gross electricity generation and auxiliary consumption (auxiliary consumption meter is only for project plant) at the site, associated with the project plant and the existing plants were periodically calibrated as per the approved monitoring plan and details of the same has been transparently mentioned in the Monitoring report. The details of calibration has been checked against the submitted documents/P10/ and found ok. However one of the Auxiliary meter was not included in the monitoring report/P02/ and this has been raised under same CAR 07. PP has appropriately included the details of calibration and the meter details in the revised Monitoring Report. The verification team has verified the same during the site visit. Hence CAR 07 has been closed.

The calculation approach opted for the net electricity generation from the existing plant was not clear in the draft monitoring report/P01/, as there were no auxiliary consumption meter for the existing boilers and TG and in this context CR 13 has been raised to clarify the approach opted for auxiliary consumption of the existing power plant. Acting on the CR, PP has responded that for the estimation of VCUs, PP has used 100% connected load for the determination of the auxiliary consumption of the existing plants as per the approved VCS PD and Validation Report. The same has been clearly described in the revised Monitoring Report/P02/ and emission reduction spread sheet/P04/. Hence the CR 13 has been closed. Furthermore the installation of the auxiliary meter will be checked during next periodic verification as per the Validation Report.

Verification team has raised CR 15 to ensure that there was no change in the energy meters for the existing power plants and asked about the credible evidences that all the energy meter were available prior to the start date of the monitoring period. In the response PP has submitted the calibration certificates/P10/ of the electricity generation meters installed at the existing power plants, from the submitted document verification team has reached to a conclusion that these meters were in existence prior to the start date of monitoring period, and hence the CR 15 has been closed.

- $e_{el,reference\ plant}$  - Average net energy efficiency of electricity generation in the reference power plant that would use the biomass residues fired in the project plant in the absence of the project activity ( $MWh_{el}/MWh_{biomass}$ ), , determined ex-ante (Value=0.06) has been validated during

the course of validation and PP has used correct ex-ante value for the same. Hence this is deemed to be ok.

**$BF_{k,y}$**  - Quantity of biomass residue type  $k$  combusted in the project plant during the year  $y$ .

The steam to fuel ratio has been used to determine the quantity of bagasse combusted in the project activity boiler. However it was not clear from the draft Monitoring report /P01/, that whether the bagasse combusted in the project plant (i.e.  $BF_{k,y}$ ) is consistent with the approach mentioned in approved VCS PD or not. Furthermore the unit of the bagasse consumption was not included in the Monitoring Report/P01/. In this context CR 14 has been raised. Accordingly PP has justified the approach for the calculation of  $BF_{k,y}$  in line with the approved VCS PD and also included the unit of the parameter in the revised Monitoring Report/P02/ and the justification mentions that  $BF_{k,y}$  has been calculated based on the ex-ante bagasse to steam ratio of 2.32 and the PP has used the same for determination of bagasse combusted in the project plant. The validation team has verified the steam generation of the project activity boiler from the boiler log book /P07/. Also checked all the calibration details of the steam flow meter used for this purpose and found ok, there were no uncertainty observed in the results of calibration of these steam flow meters and errors were found within range and deemed to be appropriate. Hence, the justification and the revised document deemed to be appropriate and CR 14 has been closed. Verification team has come to the conclusion that the method used for the calculation of  **$BF_{k,y}$**  is correct.

Furthermore it was observed that the end date for the season 2006-07 was 06.06.2007 (Cp R.T.8.(C) for the season 07-08) however the 80 TPH boiler was operated till 23.07.2007(Cp Log-book). Also in the monitoring report/P01/, under the monitoring parameter  $BF_{k,y}$  steam production for the month of July 2007 was NIL. Moreover it was also not clear that how the bagasse consumption for the month of July 2007 (during off-season operation) was measured. The verification team has raised CAR 09 in this context. Acting on the CAR, PP has appropriately given the justification that during the off-season, 80 TPH boiler was operated on the saved bagasse which was weighted by the weigh bridges at the end of the season. The verification team has verified the chalan dated 06.06.2007 at the end of the season. Also the PP has corrected the monitoring parameter "steam production" for the month of July 2007 in the revised monitoring report/P02/ and in the



corresponding excel sheet. Hence CAR 09 has been successfully closed.

• **Net calorific value of the biomass residue type k (GJ/ton of dry matter or GJ/liter)  $NCV_k$** - As per the approved VCS PD,  $NCV_k$  has been calculated by using the following formula :

$$N.C.V. = 4250 - 1200*s - 4850*w \text{ kcal/kg of bagasse}$$

Where, s= pol%.

W= Moisture content.

PP has transparently presented the same in the Monitoring report and has provided the relevant documents (laboratory records and manual)/P07/ (4), /P26/ to the verification team. All these records (for pol% and moisture content) were reviewed by the verification team and found correct. PP has also provided the calibration certificate of quartz plate used in the polarimeter and the result of the calibration is found acceptable. It was observed that the results of the NCV of the bagasse is in the range 3550 kcal/kg and the same has been crosschecked with other relevant information like publication /B07/ and found the value of monitored parameter appropriate and correct.

The verification team checked the spread sheet programming in line with the logic of emission reduction calculation and application of monitored data, emission factor and found it consistent to the approved VCS PD and as per applied methodology i.e. ACM0006, Version 09. It was verified that the above mentioned methodology has been correctly and accurately applied in calculating the total emission reductions and the emission reduction calculation is accurate and conservative.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<b>CR 11</b> <i>Section 6.2, page 9 para 2 mentioned "All the monitoring equipments ..... And in case of malfunctioning it will be replaced"</i>	/P01/	The reported Monitoring period is 01/01/2007 to 31/12/2008 (inclusive	Section 6.2 of Monitoring Report.	OK, PP has modified the relevant section of the monitorin

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p><i>immediately or sent for calibration.</i>" PP needs to clarify is any malfunctioning of monitoring equipment happened during this monitoring period. In case of any malfunctioning of monitoring equipment in this monitoring period, PP needs to transparently present the details in the MR.</p>		<p>both days) and during this period there was no malfunctioning happened for any of the measuring equipment, hence the statement is generic and has been removed from the revised Monitoring Report. Entire write up in the section 6.2 of the revised Monitoring Report has been reworded for the reported monitoring period only.</p>		<p>g report. Verification team has checked the submitted documents i.e. calibration certificates/P10/ and found that there were no instances of malfunctioning of the meter happened during the reported monitoring period, as all the monitoring equipments were calibrated at regular interval only. The result of calibration also reveals that the monitoring</p>

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
				instruments were within the permissible limit of error for each instrument, hence CR 11 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p><b>CAR 07</b>                      As per table of Instrument Specification in approved VCD PD (Page 81) there are two meters installed for measurement of auxiliary power consumption in the project activity. However table 3 of the MR refers only one auxiliary meter (SR. No. 97897/94310-2406). PP needs to transparently present all the meter details (Including Meter S. No, Accuracy Class. Multiplication factor etc) which are required for</p>	/P01/	<p>Yes, there are two auxiliary meters for project activity for the measurement of auxiliary power consumption. Both the meters have now been included in the table 3 of the revised Monitoring Report. Furthermore in the same table</p>	Table 3 of Monitoring Report.	<p>OK, verification team has checked that PP has included the auxiliary consumption of both boiler and TG in the calculation of the net electricity generated by the project activity and the</p>

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p>measurement of monitoring data as per approved VCD PD. The values of both the auxiliary meters are required to consider for calculation of emission reduction.</p>		<p>all necessary information like Meter S. No, Accuracy Class. Multiplication factor has been included. Also the, auxiliary consumption for the both the meters has been included in the revised excel sheet and Monitoring report for the calculation of EG<sub>project</sub> plant, y. Please refer to the revised emission reduction calculation sheet and Monitoring report for the further clarificat</p>		<p>value of the auxiliary consumption has been checked against the submitted documents , log books/P07 / (7).The details of the meters and its accuracy class ,multiplication factor of the calibration for the electricity generation meters has also been included by the PP in the revised Monitoring Report/P02/ and hence based on these correction in the</p>

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
		ion on the above points.		revised monitoring report CAR 07 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p><b>CR 12</b></p> <p>The calibration details (date of calibration) provided in table 3 of the MR should cover the entire monitoring period (01/01/2007 to 31/12/2008). PP should also mention the result of each calibration for all the monitoring instruments.</p> <p>Furthermore during the document review the verification team has found that the calibrations of the Juice tank, water tank and the weight bridges were not done annually (Cp section 3.3 of the approved VCS PD) and were delayed. The details of the delayed calibration are as</p>	/P01/	<p>The calibration details of the monitoring equipments provided in the Monitoring Report covers the entire monitoring period. Adding further, the results of each calibration for all the monitoring instruments for the entire monitoring period has now been included in the revised monitoring</p>	--	<p>The verification team has checked that the calibration for the monitoring equipments given under the table 3 of the MR covers to the entire monitoring period. However there is delay in the calibration of the Juice tank, water tank and weight bridges</p>

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p>follows</p> <p>1. For the weight bridge F 78007 calibration was delayed by 12 days from the scheduled date of calibration 10.09.2008, in 2008.</p> <p>2. For the weight bridge F 78010 calibration was delayed by 10 days from the scheduled date of calibration 11.09.2008, in 2008.</p> <p>3. For the weight bridge F 78009 calibration was delayed by 12 days from the scheduled date of calibration 08.09.2010, in 2008.</p> <p>4. For the weight bridge F 78008 calibration was delayed by 12 days from the scheduled date of calibration 10.09.2008, in 2008.</p> <p>5. For juice tank, calibration was delayed by 2 days from the scheduled date of calibration 04.12.2007 in 2007 and was delayed by 11 days from the</p>		<p>report.</p> <p>Yes, the PP accepts that there is delay in the calibration of the Juice tank, water tank and weight bridges. Which is beyond the control of the PP as the same has been done by the Weights and Measures Department (Government of Maharashtra)</p> <p>Despite of the delay in calibration of all the weigh bridges, water tank and juice tank, calibration report do not reveals</p>		<p>during the monitoring period. The PP has given the justification that the calibration of the Juice tank, water tank and weight bridges were done by the Weights and Measures Department (Government of Maharashtra) which is not under the control of the PP. However despite of the delay in calibration of identified equipment the errors are</p>

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p>scheduled date of calibration 07.12.2008 in 2008.</p> <p>6. For imbibition water tank, calibration was delayed by 2 days from the scheduled date of calibration 04.12.2007 in 2007 and was delayed by 11 days from the scheduled date of calibration 07.12.2008 in 2008.</p> <p>The PP has to clarify how the conservative estimate was done for the respective parameter in view of the delayed calibration.</p>		<p>errors beyond the specified limits.</p> <p>And all the weigh bridges, Juice tank and water tank were working satisfactorily during the season 2007-08 and 2008-09.</p>		<p>within limits.</p> <p>The verification team has found that the response by the PP is quite satisfactory.</p> <p>The details of calibration results has been checked against the submitted document i.e. calibration certificates/P10/ and found correct Hence, CR 12 has been closed.</p>

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p><b>CR 13</b></p> <p>It is unclear how the values of auxiliary consumption in</p>	/P01/	The auxiliary consumption for the	Appendix 1 of Monitoring Report.	The approach opted for the

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p>Appendix 1, page 33 of the MR (e.g. 381550 kWh for 2.5 MW TG for Jan-07) is calculated with respect to Annex 6 of the approved VCS PD. PP should transparently provide the details of calculation of auxiliary consumption for 2.5 MW and 1.5 MW TG as per Annex 6 of the PD.</p>		<p>existing power plants i.e. 1.5 &amp; 2.5 MW TG has been calculated as per the annex 6 of the approved VCS PD, since there were no auxiliary meters for these plants during the reported monitoring period. The same has now been clearly presented in a transparent manner in appendix 1 of the revised Monitoring report.</p>		<p>calculation of auxiliary consumption (rated capacity of all the motor has been taken) for the reported monitoring period is correct and conservative as the rated capacity of the motor is always higher than the actual power consumption of the equipment attached to the motor. The same has been detailed during the course of validation as well. PP has transparently</p>



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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
				mentioned the approach in the revised monitoring report and hence the CR 13 has been closed. Furthermore, the installation of auxiliary meter at existing power plants i.e. 1.5 & 2.5 MW power plant will be checked during the next verification. Hence CR 13 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<b>CR 14</b> It is unclear how the values of Bagasse consumption in	/P02/	The procedure for the calculation	Appendix 1 of Monitoring Report.	The justification provided

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p>project plant (BF<sub>k,y</sub>) as mentioned in Appendix 1, page 36 (Eg 11885 for Jan-07), confirms to the procedure mentioned in annex 2 of the approved PD.</p> <p>Also the unit of the values are not mentioned. PP to provide the units of all the values for all the parameters in consistent with the PD.</p>		<p>n of bagasse consumption in project plant (BF<sub>k,y</sub>) is as per the annex 2 of the approved VCS PD. Bagasse consumed in the project plant is back-calculated based on the ex-ante steam to fuel ratio as per the annex 2 of the approved VCS PD.</p> <p>Furthermore the unit of the values are also provided in the revised version of the monitoring report. Please refer to Appendix 1 of the</p>		<p>by the PP for measurement of bagasse is acceptable as it confirms to the approach mentioned in the section 2 of the VCS PD. This approach is based on steam/fuel ratio, which was fixed ex-ante as 2.32 during the course of validation. PP has also provided the steam generation details in form of log book/P07/(5) to the verification team, the same has been checked</p>

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
		Monitoring report.		and found correct. The calibration certificates of the flow meter used for the purpose to measure the steam generation has been provided and found acceptable. PP has also included the unit of bagasse consumption in the revised Monitoring report/P02/ and hence CR 14 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<b>CAR 08</b> The value of EG <sub>y</sub>	/P01/	Acting on	Monitoring	Verificat

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p>given in the MR differs from the corresponding value in the log book. This needs to be corrected in the Emission reduction excel sheet and Monitoring Report.</p>		<p>the CAR raised by the DOE, the required correction has been made in the revised version of the Monitoring Report and emission reduction excel sheet. The value of EG<sub>y</sub>( based on the calculation i.e. Gross-auxiliary consumption) is corrected as per the log book records i.e. The relevant copy of the log-book has been submitted to the DOE.</p>	<p>Report</p>	<p>ion team has checked the revised documents i.e. revised Monitoring report/P02/ and emission reduction excel sheet/P04/ and found that PP has appropriately corrected the values of gross electricity generation from the project activity and the same is now inline with the submitted document i.e. log book /P07/ (1). Hence CAR 08 has</p>

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
				been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p><b>CR 15</b></p> <p>PP should demonstrate with credible evidence that the details of the energy meters provided in the MR (Cp Table 3 Page 21 of MR), which was also verified during the site visit is the one which are installed on or before 01/01/2007 (start date of monitoring period).</p>	/P01/	<p>Yes, the energy meters as mentioned in MR were in existence prior to the first day of the reported monitoring period. The evidence to demonstrate the same i.e. calibration records of these meters prior to 01/01/2007 has been submitted to the DOE.</p>	Table 3 of Monitoring Report.	<p>Verification team has checked the calibration records of the meters of the existing power plant and these calibrated certificate reveals that the same meter as mentioned in the monitoring report were in existence prior to the start of the monitoring period, hence verification team</p>

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
				has reached to a conclusion that these meters were in existence prior to the reported monitoring period as well. Hence CR 15 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<b>CAR 09</b> The end date for the season 2006-07 is 06/06/07(Cp R.T.8.(C) for the season 07-08), however the project activity boiler (80 TPH boiler) was operated till 23 July 07(Cp Log-book) (for the season 2006-07). However on page 36 of the monitoring report/P01/, under the monitoring parameter $BF_{k,y}$ steam production for the month of	/P01/	Yes, the end date for the season 2006-07 is 06/06/07. At the end of the season the save bagasse was weighted on weigh bridge which can be verified from the chalan	Appendix 1 of Revised Monitoring Report.	The verification team has verified the chalan dated 08.06.2006 which shows that bagasse was saved at the end of the season and also cross

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<p>July 07 is NIL. PP need to clarify the same and also transparently present how the bagasse consumption for the month of July 07 (during off-season operation) is measured.</p>		<p>receipt dated 08.06.2006 (generated after the weighing of bagasse). Hence, During the off-season (till 23/07/2006) 80 TPH boiler was operated on the saved bagasse.</p> <p>Also the steam production (on page 36 of the monitoring report, under the monitoring parameter <math>BF_{k,y}</math>) for the month of July 07 was nil by mistake, which has been now corrected in the revised monitoring report. According to page 41 of the VCS approved</p>		<p>verified with the letter sent by the Co-gen department (chief engineer and works manager of co-gen department) to the chief chemist on the same date 08.06.07.</p> <p>The verification team has also verified correction done by the PP for the steam production for the month of July 07 in the revised monitoring report/P02/. The PP has given the justification that how the</p>

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CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
		<p>PD, during the off-season, the save bagasse weighted on weigh bridge and same weighted bagasse has been consumed by the project activity during off season which can be verified from the save bagasse and the opening balance for the next season.</p> <p>The same has been corrected in the relevant section of the revised Monitoring report</p>		<p>bagasse consumption was measured during the off-season. The verification team has checked the revised Monitoring report and found that the PP has included the Bagasse consumption in Appendix-I of the revised monitoring report according to the approved VCS PD. hence the CAR has been closed.</p>



**3.5 Quality of Evidence to Determine Emission Reductions**

The calibration for all the monitoring equipments (covering the reported monitoring period) has been done according to the registered VCS PD and has been submitted to the DOE.

No CAR/ CR has been raised.

**3.6 Management and Operational System**

The management and operational system for the project activity implemented by the PP is capable to monitor the emission reduction. During the site visit interviews the verification team has checked the training procedures and assessed the competency of the responsible people. The allocation of roles and responsibilities was also assessed and found to be sufficient. An operational structure has been established with responsibilities clearly identified and documented inline with the Management and Operational System delineated in the approved VCS PD and the same has been assessed during the site visit and found OK. The procedures for the day to day monitoring were confirmed during the site visit interviews.

However, the flow chart of the operation and management structure in section 6.2 of the Monitoring report was not readable and the verification team has raised CR 16 in this regard. PP has included a clearly legible flow chart in the revised monitoring report/P02/ and hence CR 16 has been closed.

Furthermore, the PP has not included the QA/QC procedure as mentioned in the approved VCS PD and also it was not clear from the draft Monitoring report/P01/ that whether the PP has applied the same QA/QC procedure which has been mentioned in the approved VCS PD or not, CAR 11 has been raised in this regard. Appropriate correction has been made in the revised monitoring report/P02/ and hence CAR 10 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<b>CR 16</b> The flow chart for "Operation and Management Structure" in	/P01/	The flow chart for "Operation and	Section 6.2 of Monitoring Report.	Ok, the desired correction has

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
section 6.2, page 9 is not clear (Not Readable). PP should provide the Operation and Management Structure in a clear and transparent manner.		Management Structure" in section 6.2 of the Monitoring report has been revised to make it more legible, please refer to the revised monitoring report.		been made in the revised Monitoring report and the flow chart of the "Operation and Management Structure" is now legible, hence CR 16 has been closed.

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
<b>CAR 10</b> Section 8 of the MR should address the QA/QC systems, which was implemented in this monitoring period. However this section has referred to section 3.4 of the approved VCS PD. It was found that section 3.4 of the approved VCS PD address the QA/QC system which management has intended to implement in the	/P01/	QA/QC systems for the reported monitoring period is as per the approved VCS PD only, however acting on the CAR raised by the DOE, the entire write up of section 8 of the	Section 8 of the Monitoring Report	The QA/QC system for the project activity has been reframed by the PP in the revised monitoring report. Furthermore, during the site visit interview /I01/, /I0

CAR/CR/FAR	Reference	Summary of project owner response	Revised sections (as applicable)	Conclusion
monitoring period and not what the management has actually implemented. Hence PP needs to provide the details of the QA/QC system which MSSKL has actually implemented in this monitoring period.		monitoring report has been reframed, which clearly addresses to the present monitoring period. Please refer to the revised section of the Monitoring report for the further details.		2/, it was verified that PP has appropriately implemented the QA/QC systems as per the section 3.4 of the approved VCS PD and hence CAR 10 has been closed.

#### 4 Verification conclusion

- *The scope of the verification relates to the Monitoring Report submitted to verification team.*
- *The period of the verification covers 01/01/2007 to 31/12/2008 (inclusive of both the days).*
- *Conclusions of the verification, including the verified amount of emission reductions for the given period are 19,316 tCO<sub>2e</sub>*
- *Reporting period: From 01-01-2007 to 31-12-2008 (inclusive of the days).*

*Verified emission in the above reporting period:*

<i>Project emissions</i>	<i>00</i>	<i>t CO<sub>2</sub> equivalents</i>
<i>Baseline emissions</i>	<b><i>19,316</i></b>	<i>t CO<sub>2</sub> equivalents</i>
<i>Emission reductions</i>	<b><i>19,316</i></b>	<i>t CO<sub>2</sub> equivalent</i>

**Annex 1:  
Abbreviations**

Abbreviation	Full Form
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CR	Clarification Request
DOE	Designated Operational Entity
ER	Emission Reduction
EPA	Energy Purchase Order
GHG	Greenhouse Gases
GWh	Gigawatt Hour
kcal/kg	Kilo calorie per kilogram
kg	Kilogram
kJ	Kilo Joule
kV	Kilo Volt
kW	Kilo Watt
kWh	Kilo Watt Hour
MERC	Maharashtra Electricity Regulatory Commission
MoV	Means of Verification
MR	Monitoring report
MSEDCL	Maharashtra State Electrical Distribution Company Ltd
MSSKL	Mula Sahakari Sakhar Karkhana Ltd
MT	Metric ton
MW	Mega Watt
MWh	Mega Watt hour
PD	Project Document
PP	Project Proponent
tCO <sub>2</sub>	Tonnes Carbon dioxide
TG	Turbo Generator
TPH	Tons per hour
UNFCCC	United Nations Framework Convention on Climate Change

## Annex -2 (Reference)

## Documents provided by the project proponent

Reference	Documents
/P01/	Draft Monitoring report version 01 dated 05/02/2010
/P02/	Final Monitoring report version 03 dated 15/11/2010
/P03/	Calculation Excel sheet corresponding to /P01/
/P04/	Calculation Excel sheet corresponding to /P02/
/P05/	Proof of start date of the project activity.
/P06/	Proof of the start date of commercial operation of the project activity.
/P07/	<ol style="list-style-type: none"> <li>1. Sample copy of log book (16 MW co-gen log book) for gross electricity generation details.</li> <li>2. Sample copy of log book (Daily Electric Energy Generation and Consumption Report Book) for gross electricity generation details of 1.5 &amp; 2.5 MW TG.</li> <li>3. Copy of log book (16 MW Cogen Tripping Register) for outage details of turbo generator during the reported monitoring period.</li> <li>4. Copy of log book(Quantity Register) for the details of Added Water, Cane crushed, Gross Mixed Juice, Total Bagasse generation, moisture and Pol% of the bagasse during the reported monitoring period</li> <li>5. Sample copy of log book (Steam Flow Meter Reading Register) for Steam Generation details all boilers.</li> <li>6. Sample copy of log book (Boiler Log-book for Boiler NO.MR 13323) for details of steam parameters, Pressure, Temperature and outage details of 80 TPH boiler.</li> <li>7. Sample copy of log book(Auxiliary Log book for 16 MW TG and project plant boiler) for auxiliary consumption details</li> </ol>
/P08/	Monthly monitoring reports of power plant operations.
/P09/	Proof of meter readings on the start date and end day of monitoring period of each meter for the Project Activity as per the approved monitoring plan.
/P10/	Calibration certificate (showing the traceability of the master meter to National Physical Laboratory or a NABL certified Laboratory) including pre-installation calibration certificate (wherever applicable) of all the meters during the reported monitoring period (01/01/2007 - 31/07/2009)
/P11/	Calibration Procedures/Standard, and meter detail for all meters, covering the monitoring period.
/P12/	Copy of Energy purchase agreement signed between project promoter (Mula Sahakari Sakhar Karkhana Ltd)

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	and MSEB.
/P13/	List of all the Meters with their unique identification number of (with Loc No./details), make, meter serial number, meter standard of each meter.
/P14/	Company internal monitoring procedure / manual describing the QA/QC procedures, roles and responsibilities of company personal for delegation of VCS project responsibilities.
/P15/	Proof of training and competency of the project operators
/P16/	Internal Audit Report (Minutes of the quarterly reviewing meeting)
/P17/	Extract of manual of all the major equipment (boiler and turbine) and all meters/measuring equipment clearly indicate their specifications/technical details.
/P18/	List of all auxiliary drives (with drive specification, motor rating and connected MCC name) within the project boundary with respective auxiliary meter.
/P19/	Single line diagram of the electrical system, showing the power plants (Project activity and existing power plants) and evacuation system
/P20/	Piping and Instrumentation Diagram of the project activity.
/P21/	Statutory Clearance: No objection letter issued by respective electricity utilities to PP / Promoters for installation of the project activity
/P22/	Extract of operation and maintenance record(Boiler Log-book for Boiler NO.MR 13323 and 16 MW Cogen Tripping Register) of Boiler and TG.
/P23/	Annual reports of MSSKL for 2007, 2008 and 2009
/P24/	Photographs of the following: 1. Project activity and existing power plants. 2. All meters
/P25/	Proof of title (= Right of use as per definition of VCS Program Update dated 21 January 2010)for the project activity (as per section 8.1 of the validated VCS PD = B02)
/P26/	Procedure for analysis of moisture% and pol%.
/P27/	R.T.8.(C) for the season 2007-08, 2008-09
/P28/	Copy of VCS validation and verification contract dated 18/11/2008 with TÜV Rheinland (for the compliance of para 1 of VCS Policy Announcement dated 10 Sep' 2008).
/P29/	Letter from M/s Walchandngar Industries Ltd for non-usage of wood logs in the boiler.
/P30/	Excel sheet containing calculation of Qtot,proj,y on a daily basis for the reported monitoring period.
/P31/	Challan from the MSSKL for the remaining bagasse at

the end of the season 2006-07 and 2007-08.

#### Background investigation and assessment documents

Reference	Documents
/B01/	Applied baseline and monitoring methodology ,i.e, ACM0006 Ver. 09: " <b>Consolidated methodology for electricity generation from biomass residues</b> "
/B02/	Registered VCS PD for the project: "16.0 MW bagasse based cogeneration project at Ahmadnagar, Maharashtra by M/s Mula Sahakari Sakhar Karkhana Ltd." available on the VCS project database.
/B03/	Validation Report for VSC project "16.0 MW bagasse based cogeneration project at Ahmadnagar, Maharashtra by M/s Mula Sahakari Sakhar Karkhana Ltd." issued by TUV Rheinland (India) Pvt. Ltd.
/B04/	Voluntary Carbon Standard 2007.1; Program Guidelines; VCSA Rules ;and VCS Guidance Document.
/B05/	ISO 14064-2: ISO 14064-3.
/B06/	GHG Protocol for Project accounting Chap 7
/B07/	Thermax report for the value of NCV of Bone dry biomass residue, page No 29.
/B08/	Validation statement

#### Websites used

Reference	Link	Organisation
/W01/	<a href="http://www.mercindia.org.in">http://www.mercindia.org.in</a>	Maharashtra Electricity Regulatory Commission
/W02/	<a href="http://www.mahatransco.in/related_links.shtm">http://www.mahatransco.in/related_links.shtm</a>	Maharashtra State Electricity Distribution Company Limited (MSEDCL)
/W03/	<a href="http://www.cea.nic.in/">http://www.cea.nic.in/</a>	Central Electricity Authority
/W04/	<a href="http://cdm.unfccc.int/">http://cdm.unfccc.int/</a>	United Nations Framework Convention on Climate Change
/W05/	<a href="http://www.v-c-s.org">www.v-c-s.org</a>	Voluntary Carbon Standard

**Interviewed Persons**

Reference	Name	Organisation / Function
/I01/	Mr. Anant Ladukar	MITCON Consultancy Services Limited
/I02/	Mr. S. T. Choudhary	Mula Sahakari Sakhar Karkhana Ltd
/I02/	Mr. D. T. Gadakh	Mula Sahakari Sakhar Karkhana Ltd
/I02/	Mr. M. P. Bhorkade	Mula Sahakari Sakhar Karkhana Ltd