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

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**Shreyans Industries Limited (SIL)  
Methane Recovery from waste  
water generated from wheat straw  
wash at Paper manufacturing unit  
of Shreyans Industries Limited (SIL)**

**UNFCCC Ref. No. 0935**

**SGS Climate Change Programme**

SGS United Kingdom Ltd  
SGS House  
217-221 London Road  
Camberley Surrey  
GU15 3EY  
United Kingdom

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<b>Project Title:</b>			
Methane recovery from waste water generated from wheat straw wash at Paper manufacturing unit of Shreyans Industries Limited (SIL)			
<b>Organisation:</b>		<b>Client:</b>	
SGS United Kingdom Limited		Shreyans Industries Limited (SIL)	
<b>Subject:</b>			
Validation Opinion for Revision of Registered Monitoring Plan			
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<b>Validation Team:</b>			
Nayan Jyoti Deka – Lead Assessor		<input checked="" type="checkbox"/> No Distribution (without permission from the Client or responsible organisational unit)	
Nitin Babber – Assessor & Local Assessor			
Ashok Kumar Gautam – Expert			
<b>Technical Review:</b>		<b>Trainee Technical Reviewer:</b>	
Date: 10-02-2011		Name: NA	
Name: Kaviraj Singh		<input type="checkbox"/> Limited Distribution	
<b>Authorised Signatory:</b>			
Name: Siddharth Yadav		<input type="checkbox"/> Unrestricted Distribution	
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## Abbreviations

BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Developed Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
COD	Chemical Oxygen Demand
DOE	Designated operational Entity
EB	Executive Board
ER	Emission Reduction
FAR	Forward Action Request
MP	Monitoring Plan
PDD	Project Design Document
PE	Project Emissions
PP	Project Participant
RMP	Revised Monitoring Plan
SIL	Shreyanse Industry Limited
SSC	Small Scale
UNFCCC	United Nations Framework Convention on Climate Change

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## 1. Validation Opinion

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

SGS United Kingdom Ltd has been contracted by Shreyans Industries Limited (SIL) to perform such a validation of the revision of monitoring plan according to the procedure detailed in Annex 28 to EB 49 meeting report; the registered monitoring plan is part of the PDD of registered CDM project Methane recovery from waste water generated from wheat straw wash at Paper manufacturing unit of Shreyans Industries Limited (SIL) and UNFCCC ref. no. 0935. The purpose of a validation is to have an independent third party assessment of the revision of monitoring plan. In particular, the level of accuracy and/or completeness in the proposed revision of the monitoring plan, and the conformity with approved monitoring methodology applicable to the project activity.

By applying the proposed revision of monitoring plan,

- The data unit of *CDD (inlet)* (D.3.2) & *COD (outlet)* (D.3.3) has been corrected from *Mg/litre* to *mg/litre* in the monitoring plan.
- The unit of “ *electricity consumption* ” (D.3.4) has been changed from *million KWh* to *KWh* in the monitoring plan
- “ *Volume of Biogas* ” (D.3.7) has been changed to “ *Volume of Biogas fuelled* ”. Also, the Data unit has been changed from “*m<sup>3</sup>*” to *NM<sup>3</sup>/hr*”.
- “ *Quantity of Biogas fuelled* ” (D.3.8) has been included instead of “ *Quantity of Biogas* ” in the revised Monitoring Plan.
- “ *Methane quantity fuelled* ” (D.3.9) has been included in the monitoring plan instead of “ *methane quantity generated* ”
- “ *Volume of Biogas flared* ” (D.3.10) has been included instead of “ *Biogas fuelled* ” as one of the monitoring parameter in the revised Monitoring Plan which was not defined in the registered PDD.
- The “ *fraction of methane in Biogas Flared/ Fuelled* ” (D.3.11) has been included as one of the monitoring parameter in the revised Monitoring Plan which was not defined in the registered PDD.
- PP has also included the information about the flare.
- Further information on the ex-post emission reduction calculation has been included.

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

Furthermore, we confirm that:

- (a) the proposed revision points have been described, and an assessment has been provided to substantiate the reasons for each of the proposed revision points of the registered monitoring plan, using objective evidence;
- (b) the proposed revision of the monitoring plan ensures that the level of accuracy or completeness in the monitoring and verification process is not reduced as a result of the revisions;
- (c) the proposed revision of the monitoring plan is in accordance with the approved monitoring methodology applicable to the project activity whilst ensuring the conservativeness of the emission reductions calculation.
- (d) project activity is undergoing first verification

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



A handwritten signature in blue ink, appearing to read 'Siddharth', is written over a diagonal blue line that extends from the bottom left towards the top right.

Signature:

Name: Siddharth Yadav

Date: 11-02-2011

## **2. Introduction**

### **2.1 Objective**

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

SGS United Kingdom Ltd has been contracted by Shreyans Industries Limited (SIL) to perform such a validation of the revision of monitoring plan according to the procedure detailed in Annex 28 to EB 49 meeting report; the registered monitoring plan is part of the PDD of registered CDM project Methane recovery from waste water generated from wheat straw wash at Paper manufacturing unit of Shreyans Industries Limited (SIL) and UNFCCC ref. no 0935. The purpose of a validation is to have an independent third party assessment of the revision of monitoring plan. In particular, the level of accuracy or completeness in the proposed revision of the monitoring plan, and the conformity with the approved monitoring methodology applicable to the project activity.

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

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

### **2.2 Scope**

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

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

### **2.3 GHG Project Description**

Refer to <http://cdm.unfccc.int/Projects/DB/SGS-UKL1171466454.8/view>, the project web page. There is no change in the project activity description. The project was registered on 02<sup>nd</sup> April 2007 under UNFCCC ref. no 0935.

### 3. Methodology

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

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

A site visit was carried out to verify assumptions in the baseline.

#### 3.2 Use of the Validation Protocol

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

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

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

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

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

#### 3.3 Findings

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

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

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

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



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

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

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

### **3.4 Internal Quality Control**

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

## 4. Validation Findings

### 4.1 Application of Monitoring Methodology and Monitoring Plan

#### Type of Revision

The revision of monitoring plan is a result of

a recommendation by the DOE as mentioned in section D.3.2, D.3.3, D.3.7, D.3.8, D.3.9, D.3.10 & D.3.11. The brief explanations of changes are as mentioned below

- The data unit for “COD(inlet)” & “COD(outlet)” has been corrected to mg/litre from Mg/liter
- The data unit of “Electricity consumption” has been corrected to “KWh” from “Million KWh”.
- Section D. 3. 7 have been revised to include “Volume of biogas fuelled” instead of “Volume of biogas”.
- Section D. 3.8 has been revised to include “Quantity of biogas fuelled” instead of “Quantity of biogas”
- Section D. 3.9 has been revised to include “Methane quantity fuelled instead of ” Methane quantity generated “
- Section D. 3.10 has been revised to include “Volume of Biogas flared” instead of “Biogas fuelled”
- The “*fraction of methane in Biogas Flared/ Fuelled*”(D.3.11) has been included as one of the monitoring parameter.
- The information about the flare has also been included in the monitoring plan.
- Further information on the ex-post emission reduction calculation of the project activity has been included

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

**COD (inlet) (D.3.2)** – The data unit of *CDD (inlet)* has been corrected from ‘Mg/litre’ to ‘mg/litre’ in the revised monitoring plan. *COD (Inlet)* is a measure of methane generation potential of untreated waste water and is essential for calculating both baseline and project emissions. Analysis is done in laboratory for measurement on a daily basis at the plant location and reported in the plant records/log books. The monitoring equipments and procedure used for measuring the parameter is tested half yearly by a third party in order to ensure the highest level of accuracy in the monitoring procedure. This change is not effecting the ER calculation. Thus, the revision in the monitoring plan was found to be satisfactory

**COD (outlet)(D.3.3)** - The data unit of *CDD (outlet)* has been corrected from ‘Mg/litre’ to ‘mg/litre’ in the revised monitoring plan. *COD (outlet)* is a measure of methane generation potential of treated waste water from digester and is essential for calculating project emissions. Analysis is done in laboratory for measurement on a daily basis at the plant location and reported in the plant records/log books. The monitoring equipments and procedure used for measuring the parameter is tested half yearly by a third party in order to ensure the highest level of accuracy in the monitoring procedure. This change is not effecting the ER calculation. Thus, the revision in the monitoring plan was found to be satisfactory

**“Electricity consumption” (D.3.4):** - In the registered monitoring Plan “*The electricity consumption*” was erroneously written as “Million KWh” whereas in actual practice the meter is giving the reading in “KWh”. Therefore, the revised monitoring plan has been changed from “Million KWh” to “KWh” for the data unit of this parameter . Electricity consumption is measured by meters provided at plant and the same would be reported in the plant records/log books. The monitoring equipment used for measuring the parameter is calibrated annually in order to ensure the highest level of accuracy in the monitoring process. This change is not effecting the ER calculation. Thus, the revision in the monitoring plan was found to be satisfactory

**“Volume of Biogas Fuelled”(D.3.7):** In the registered monitoring Plan “*Volume of gas*” was one of the parameter in which unit of measurement was mentioned as M<sup>3</sup>, however, it was not clear, whether this parameter is related to volume of biogas fuelled or flared or recovered. In the revised monitoring plan “*Volume of Biogas Fuelled*” has been included as one of the monitoring parameter. This is measurement continuously by using orifice flow meter and unit of measurement will be Nm<sup>3</sup>/Day. Daily values will be reported in Plant records and log books. Flow meter will be calibrated annually. This change is not effecting

the ER calculation. Thus, the revision to include "*Volume of Biogas Fuelled*" instead of "*Volume of gas*" brings more transparency in the monitoring plan and it was found to be satisfactory

**"Quantity of Biogas Fuelled"(D.3.8):** In the registered monitoring Plan "*Quantity of Gas*" was one of the parameter. The same was mentioned as the measured parameter and the unit of measurement was mentioned as Tons, however, it was not clear, whether this parameter is related to volume of biogas fuelled or flared or recovered.. Moreover in actual practice, biogas fuelled is not directly measured in tons as this is the calculated value. This parameter has been corrected to "*Quantity of Biogas Fuelled*" in the revised monitoring plan as the calculated parameter. "*Quantity of biogas fuelled*" is computed from its volume and density (which is calculated from its temperature and pressure conditions) and the same is reported in the plant records/log books. This change is not effecting the ER calculation. . Thus, the revision to include "*Quantity of Biogas Fuelled*" instead of "*Quantity of Gas*" brings more transparency in the monitoring plan and it was found to be satisfactory.

**"Methane Quantity Fuelled"(D.3.9):** In the registered monitoring Plan "*Methane Quantity*" was one of the parameter however, it was not clear, whether this parameter is related to volume of biogas fuelled or flared or recovered. This parameter has been corrected to "*Methane Quantity fuelled*" in the revised monitoring plan. This is a calculated value which is based on the % of methane in the biogas being fuelled and the quantity of the biogas fuelled. Its values will be reported in Tons. Methane fraction is measured in laboratory with the gas chromatograph installed at the plant location and the same reported in the plant records/log books. There is provision to check fraction of methane at both fuelling and flaring stage as lines of both these points are connected to the gas chromatograph Meter. This change is not effecting the ER calculation. Thus, the revision to include "*Methane Quantity Fuelled*" instead of "*Methane Quantity*" brings more transparency in the monitoring plan and it was found to be satisfactory

**"Volume of Biogas Flared"(D.3.10):** "*Volume of biogas flared*" will be measured by using orifice flow meters. Its unit of measurement will be Nm<sup>3</sup>/day. Daily values will be reported in Plant records and log books. Flowmeter will be calibrated annually. Daily values will be reported in Plant records and log books. Flowmeter. This change is not effecting the ER calculation. Thus, the revision for inclusion of "*Volume of biogas flared*" in section D.3.10 in the monitoring plan was found to be satisfactory

**"Fraction of the methane in Biogas fuelled/Flared "(D.3.11)** "*Fraction of methane fuelled/flared*" is measured for calculating the weight of methane fuelled/flared. Methane fraction is measured with the gas chromatograph installed at the plant location and the same would be reported in the plant records/log books. There is provision to check fraction of methane at both fuelling and flaring stage as lines of both these points are connected to the gas chromatograph Meter. The statistical analysis on 95% confidence level will be carried out for the periodic monitoring of the methane fraction. Gas chromatograph will be calibrated annually. The same was already being monitored but was not clearly mentioned in the monitoring Plan as a separate parameter. This change is not effecting the ER calculation. Thus, the revision for inclusion of "*Fraction of methane fuelled/flared*" in section D.3.11. in the monitoring plan was found to be satisfactory.

**Description of flare.** – In the project activity, an open flare system has been employed for flaring the biogas in case of exigencies. For the project activity, the flare efficiency will be taken as 0%, and hence, monitoring for continuous operation of the flare system is not required, because, the flare in the project activity is negligibly small, as the total gas generated in the project activity is utilized in two boilers out of which at least one is continuously in operation. Also, monitoring whether the gas flared is burnt properly or not is not feasible. Hence, continuous monitoring of the flare efficiency is not possible. However, to be on the conservative side, the flare efficiency in the project activity is assumed to be zero, and the entire flared gas would be subtracted from the gas generated to calculate gas fuelled in the project activity and the same would be utilized for calculation of CER generated. It is noteworthy, that the project has been registered on version 3 of AMS III H and the project is claiming ER on the Methane avoidance only,

#### **The Ex post emission reductions calculation: -**

The Ex post emission reductions calculation for the project activity is based on the lowest value of the following,

(i) The amount of biogas fuelled or flared in the project activity during the crediting period that is monitored ex post;

(ii) Ex post calculated baseline, project and leakage emissions based on actual monitored data (monitoring of the parameters like volume of waste water flow, COD inlet and COD outlet to the system, along with other ex-ante fixed parameters) for the project activity.

The above approach for emission reduction calculation for the project activity will result in a conservative estimation of project activity emission reduction, because in any case, the project activity will be claiming Emission Reduction on the lower values achieved out of the above two approaches.

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

As the project is registered with the methodology AMS III.H version 03 dated 28<sup>th</sup> July 2006. As per its paragraph 11 monitoring requirement is that in all cases the amount of the methane recovered and flared or fuelled should be monitored ex-ante using continuous flow meter. However SSC WG response on clarification number SSC\_376 is also referred in which it is stated that if the biogas flared and fuelled (or utilized) is being continuously monitored separately, then the total flow of recovered biogas need not be monitored separately. Thus monitoring of the biogas being flared and fuelled will suffice the monitoring requirement of the methodology.

As per Para 10, of AMS III H, version 3, for case(ii) *“introduction of methane recovery and combustion unit to an existing anaerobic wastewater or sludge treatment system, the project activity emission reductions will be measured directly. They consist of the amount of methane recovered and fuelled or flared, which will be monitored ex-post.”* In the project activity, Ex post emission reductions calculations are based on the lowest value of “amount of methane fuelled or flared in the project activity” or “Ex post calculated baseline, project and leakage emissions based on actual monitored data”, which is a more conservative approach and hence accepted by DOE.

Since the biogas fuelled or flared does not change with the revised monitoring plan, hence there is no change in the Emission Reduction Calculation. Hence there is no possible impact on the Emission Reduction Calculation for the project activity by applying the revised monitoring plan.

The monitoring plan of the registered PDD requires changes that are permanent in nature, and it has not been considered under change in project activity design as they have been indicated in the registered PDD. Taking guidance from EB43 paragraph 58, these changes (in monitoring plan) will affect the rest of the crediting period, the attached revision in monitoring plan is found to improve the accuracy of emission reductions and would apply conservativeness in their determination.

CAR#01 was raised to substantiate the following;

- PP is requested to clarify why the monitoring of Temperature and pressure of the gas has been omitted in the revised monitoring plan.
- PP is also requested to clarify why no monitoring of sludge is being done for the calculation of  $PE_{y,s,final}$  &  $ME_{y,s,untreated}$
- PP is requested to kindly mention the version no. & date in the RMP. Also, requested to provide the RMP, both in clean mode & track change mode.

*Sufficient information as discussed below was provided by the PP –*

- The pressure and temperature used for conversion of m<sup>3</sup> to Nm<sup>3</sup> is 1 Atmosphere Pressure and 0<sup>o</sup> C Temperature. The same can be confirmed from the flowmeter manual and found to be satisfactory. Further, the pressure and temperature monitoring has been included in the revised monitoring plan.
- PP responded that the Sludge generated at bio gas plant is discharged through digester overflow to ETP inlet where the effluent stream is treated further employing Activated Sludge Process to meet the standards as laid down by PPCB. The same system was employed in the baseline activity and hence, the methane emission from the decay of the final sludge generated by the treatment systems has been neglected for the project activity.

- The RMP document has been modified to include the version no. and date of the document. Also the track change and clean version for the document has been provided and same has been checked and found to be correct.

PP has provided sufficient information which has been duly assessed by the assessment team and found to be satisfactory. Thus, CAR#01 was closed.

CAR#02 was raised for the following issues as discussed below –

- As mentioned in the RMP ‘the flare efficiency for the project activity will be taken as 50%, when the flare will be operational and 0%, in case the flare is not operational.’ However from the revised monitoring plan it is not clear that how this will be monitored whether flare is operational or not. PP is requested to clarify the same.
- PP is also requested to clarify about the data monitoring, data archiving & QA/QC procedure for the flare efficiency monitoring

Sufficient information as discussed below has been obtained from the PP-

- The flare employed in the project activity is an open flare system. According to the methodological tool “Tool to determine project emissions from flaring gases containing methane”, Annex 13, EB 28, page 2, “In case of open flares, the flare efficiency cannot be measured in a reliable manner (i.e. external air will be mixed and will dilute the remaining methane) and a default value of 50% is to be used provided that it can be demonstrated that the flare is operational (e.g. through a flame detection system reporting electronically on continuous basis). If the flare is not operational the default value to be adopted for flare efficiency is 0%.” For the project activity, the flare efficiency will be taken as 0%, and hence, monitoring for continuous operation of the flare system is not required. The flare in the project activity is negligibly small, as the total gas generated in the project activity is utilized in two boilers out of which at least one is continuously in operation. Also, monitoring whether the gas flared is burnt properly or not, is not feasible. Hence, continuous monitoring of the flare efficiency is not possible. However, to be on the conservative side, the flare efficiency in the project activity is assumed to be zero, and the entire flared gas would be subtracted from the gas generated to calculate gas fuelled in the project activity and the same would be utilized for calculation of CER generated.
- As stated in the point(a) above, the data monitoring, data archiving & QA/QC procedure for continuous operation of the flare system is not required and it was found to be reasonable.

PP has provided sufficient information which has been duly assessed by the assessment team and found to be satisfactory. Thus, CAR#02 was closed.

CL#03 was raised due to the following issues as described below –

- PP to clarify about the possible impact on Emission Reduction Calculation by applying the revised monitoring plan.
- PP is requested to clarify why Annex-4 is not included in the revised monitoring Plan.

Sufficient information as described below has been obtained from the PP –

- There is no possible impact on the Emission Reduction Calculation for the project activity by applying the revised monitoring plan. Ex post emission reductions calculation for the project activity is based on the lowest value of “amount of biogas fuelled or flared in the project activity” or “Ex post calculated baseline, project and leakage emissions based on actual monitored data”, which is a more conservative approach. Since the biogas fuelled or flared does not change with the revised monitoring plan, hence there is no change in the Emission Reduction Calculation.
- The Annex - 4 pertaining to the Monitoring Information for the project activity was not included in the registered PDD. All the relevant and necessary information was included under section D.3 and D.4 and the same has been revised in the RMP document.

The clarification about the possible impact on Emission Reduction Calculation by applying the revised monitoring plan which has been found to be satisfactory. Also, clarification of Annex-4 has been provided by the PP which is acceptable.

PP has provided sufficient information which has been duly assessed by the assessment team and found to be satisfactory Thus, CL03 was closed.

CL#04 was raised to substantiate the following information –

- (a) QA/QC procedures are to be explained clearly in the revised monitoring plan. Data monitoring, archiving and reporting procedure about the additional parameters included in the RMP are not clearly described.
- (b) PP is requested to provide the information on monitoring equipment and respective positioning in order to safeguard a proper installation.
- (c) PP is requested to clarify about procedures identified for calibration of monitoring equipment

Sufficient information as described below has been obtained from the PP –

- (a) QA/QC procedures for the monitored parameters have been elaborately explained in the revised monitoring plan. Data monitoring, archiving and reporting procedure about the additional parameters are also included in the RMP, with clear and elaborate description. RMP has been checked and found that QA/QC procedure and Data monitoring, archiving and reporting procedure about the additional parameters included in the RMP.
- (b) The line diagram describing the respective positioning of the monitoring equipments have been provided as Attachment 4. Attachment 4, line diagram has been checked and found to be ok.
- (c) The calibration frequency and procedures have been included in the revised monitoring plan and same has been checked found to be satisfactory.

PP has provided sufficient information which has been duly assessed by the assessment team and found to be satisfactory Thus, CL#04 was closed.

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

## 4.2 Findings of Previous Verification Reports

Presently the first verification is ongoing and there has been no FAR raised at the time of validation.

## 5. List of Persons Interviewed

Date of site visit	Name	Position	Short description of subject discussed
14.07.2009- 15.07.2009	K.N. Tiwari	General Manager(R & D )	Issues related to Monitoring and Technology



## 6. Document References

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

- /1/ Revised Monitoring Plan 1.2, dated - 09<sup>th</sup> August 2010.
- /1.1/ Revised Monitoring Plan, 1.3, dated – 04/10/2010
- /1.2/ Revised Monitoring Plan 1.4, dated – 08/10/ 2010.
- /1.3/ Revised Monitoring Plan 1.5, dated – 08/02/ 2011.

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):

- /2/ Registered PDD version 05 dated 05<sup>th</sup> February 2007,
- /3/ Validation Report, 12<sup>th</sup> Feb 2007)
- /4/ Methodology AMS.IIIH Version 03
- /5/ Gas Flowmeter manual



## Annex 1: Validation Protocols

Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
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Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
<b>A.1. General Requirements</b> <i>(Note that the sections A.1.1- A.1.4 may be completed after the other sections are completed)</i>				
A.1.1. Is the revision in the monitoring plan based on a decision by the CDM EB	EB49, Annex 29	DR	No, the revision in monitoring plan is not based on a decision by the CDM EB.	Y
A.1.2. Is the revision based on a decision by CDM EB but also additional revisions are proposed by the PP/DOE	EB49, Annex 29	DR	No, the revision in monitoring plan is not based on a decision by the CDM EB .This is basically proposed by DOE.	Y
A.1.3. Is the need for revision in monitoring plan spotted during the first monitoring period?	EB49, Annex 29 Project page on UNFCCC website	DR	Presently verification of the first monitoring period is being done..	Y
A.1.4. Is the revised monitoring plan complete and does the revised monitoring plan follow the registered PDD template?	Registered PDD	DR	No, the revised monitoring plan is not complete  PP is requested to clarify why the monitoring of Temperature and pressure of the gas has been omitted in the revised monitoring plan  The revised monitoring plan follows the registered PDD template.	CAR #01( a) closed
A.1.5. Has the revised monitoring plan submitted in track change mode for each of the revision point (issue)?	Revised monitoring plan	DR	Yes, The revised monitoring plan has been submitted by the proponent in track change mode for each of the revision point (issue).	Y
A.1.6. is there an objective evidence for each of the proposed revision point (issue)?		SV/DR	The proposed revision points were identified by the verification team during the site visit.	Y

Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
A.1.7. Does the revised monitoring plan also include the Annex 4?	Registered PDD	DR	No, the revised monitoring plan does not include the Annex 4 . Annex-4 has not been included. . However all the monitoring information and emission reductions related information i.e., section D included in the revised monitoring plan.	<b>CL# 3(b)</b>  <b>Closed</b>
A.1.8. Does the revised monitoring plan lead/associate to any kind of change in the project registered design?	Registered PDD & EB48 Annex 66-67	DR	No, the revised monitoring plan does not lead/associate to any kind of change in the project registered design	Y
<b>A.2. Data and Parameters Monitored</b>				
A.2.1. Does the revised monitoring plan in the PDD comply with the approved methodology provided for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period?	VVM Para. 91a/91d/121 Revised MP Section B.7 EB49, annex 2, para 9	DR	<p>In the revised monitoring plan following parameters have been included.</p> <p>Fraction of methane Fuelled and the Volume of Biogas generated PP has included the more transparent discussion about the following parameters. Volume of biogas flared , Volume of biogas fuelled, Methane quantity Fuelled Quantity of the Biogas fuelled&amp; Methane quantity Fuelled</p> <ul style="list-style-type: none"> <li>PP is also requested to clarify why there is no monitoring of sludge is being done for the calculation of PE<sub>y,s,final</sub> &amp; ME<sub>y,s,untreated</sub></li> <li>PP is requested to include the information about the data archiving procedure and monitoring frequency of the flare efficiency in the revised monitoring plan.</li> <li>As mentioned in the RMP , the flare efficiency for the project activity will be taken as 50%, when the flare will be operational and 0%, in case the flare is not operational. However from monitoring plan it is not clear that how this will be checked whether flare is operational or not . PP is requested to clarify about the data monitoring, data archiving &amp; QA/QC procedure for the flare efficiency monitoring.</li> </ul>	CAR#01(b) Closed CAR#2(a) Closed CAR#2(b) Closed

Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs

Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
A.2.2. Are the changes in the monitoring plan inline to the applied methodology and tool?	AMS.III.H Version 03	DR	Subject to closure of pending CARs/CLs. The proposed revision in monitoring plan is found to be inline with the applied methodology, AMS III H, version 3.	Pending CARs/CLs. Closed.
A.2.3. Are the changes affecting the ER calculation (directly/indirectly)?	Revised MP	DR	PP to clarify about the possible impact on Emission Reduction Calculation by applying the revised monitoring plan.	CL#03(a) Closed
A.2.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	RMP Section B.7	DR	Information given for each monitoring variable is sufficient to ensure the verification of a proper implementation of the monitoring Plan.	Y
A.2.5. Has there been an issuance with the original monitoring plan of the registered PDD in the past?	Project page on UNFCCC website	DR	No, There has been no issuance with the original monitoring plan of the registered PDD in the past	Y
A.2.6. If so how did the identified gaps affect the ER calculations for the monitoring periods in the past?			Not applicable	
A.2.7. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	RMP Section – B.7	DR	The information given for each monitoring variable by the presented table is sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records. Subject to closure of pending CARs/CLs.	Pending CARs/CLs. Closed
A.2.8. Is the monitoring approach in	RMP Section-	DR	PP is requested to clarify why there is no Annex-4 included in the revised monitoring Plan.	CL#3(b) Closed

Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	B.7			
A.2.9. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.	Revised MP Section -B.7	DR	All parameters related to Project emissions and related formulae are taken care in the revised monitoring Plan.	Y
<b>A.3. Quality Control (QC) and Quality Assurance (QA) Procedures</b>				
A.3.1. Is the selection of data undergoing quality control and quality assurance procedures complete?	VVM Para. 121	DR	QA/QC procedures are to be explained clearly in the revised monitoring plan.	CL#4(a) closed
A.3.2. in case, a revision is proposed, the impact of the revision should be assessed and it not result in reduced level of accuracy and completeness in the monitoring and verification process	EB49, annex 2, para 9		Subject to the pending CAR/CL  It has been assessed that proposed revision in monitoring plan will not result in reduced level of accuracy and completeness in the monitoring and verification process	Y
A.3.3. Are quality control procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?	VVM Para 121	DR	It has to be assessed the proposed revision in monitoring Plan safeguards the proper operations of all data capture, data analysis and data compilation systems to be employed by the project participants.	Y

Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
A.3.4. Is it ensured that data will be bound to national or internal reference standards?	VVM Para. 86d	DR	It has been assessed that monitoring data will be clearly reproducible and comparable and will not be dependent on site-specific adjustments.	Y
<b>A.4. Operational and Management Structure</b>				
A.4.1. Is the authority and responsibility of project management clearly described?	PDD Section B.7.2 /Annex 4	DR	Authority and responsibility of project management is clearly described.	Y
A.4.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD Section B.7.2/Annex 4	DR	Authority ,responsibility for registration ,monitoring measurement and reporting is clearly described	Y
<b>A.5. Monitoring Plan (Annex 4)</b>				
A.5.1. Does the monitoring plan completely describe all measures to be implemented for monitoring all parameter required, including measures to be implemented for ensuring data quality?	VVM Para. 122b	DR	PP is requested to clarify why Annex-4 is not included in the revised monitoring Plan.	CL#3(b) closed
A.5.2. Does the monitoring plan provide information on monitoring equipment and respective positioning in order to safeguard a proper installation?	VVM Para. 122b	DR	PP is requested to clarify about the information on monitoring equipment and respective positioning in order to safeguard a proper installation.	CL#4(b) closed
A.5.3. Is there any change proposed in the specifications of the monitoring equipment or their	EB49, annex 2, para 9	SV	There is no change proposed in the specifications of the monitoring equipment or their positioning or installation	Y

Checklist Question	Reference	MoV*	Comments	Conclusion/ CARs/CLs
positioning or installation then the impact of the change due to revision should be assessed and it not result in reduced level of accuracy and completeness in the monitoring and verification process				
A.5.4. Are procedures identified for calibration of monitoring equipment?	VVM Para. 122a-c	DR	PP is requested to clarify about procedures identified for calibration of monitoring equipment.	CL#4(c) closed
A.5.5. Is there any change proposed in the calibration procedures, if yes then the impact of the change due to revision should not result in reduced level of accuracy and completeness in the monitoring and verification process	EB49, annex 2, para 9		No there is no change proposed in the calibration procedures	Y
A.5.6. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	VVM Para. 122a-c	DR	PP has internal CDM monitoring team which is responsible for the overall monitoring and management of the project. Daily monitoring data will be reported to the CDM controller. CDM controller will be reporting on daily basis to the chairman CDM monitoring committee. Through chairman CDM monitoring committee monthly reports are sent to the ED and CEO. Further ED and CEO send the reports to the managing director. Hence the procedure for data handling and reporting is well defined.	Y
A.5.7. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	VVM Para. 122a-c	DR	PP has internal CDM monitoring team which is responsible for the overall monitoring and management of the project. Project performance review are done at different hierarchy levels.	Y

## Annex 2: Overview of Findings

### Findings Overview

Findings from verification of **Methane recovery from waste water generated from wheat straw wash at Paper manufacturing unit of Shreyans Industries Limited (SIL)**

Each Table below represents a finding from the verification assessment. The findings are numbered consecutively, approximately in the order that they have been identified and irrespective of the nature of the findings, for eg.: CAR #1, CAR #2, CL #3, FAR #4 etc.

Description of Table:

Type	Findings are either Corrective Action Requests (CARs), Clarification Requests (CLs), and Forward Action Request (FARs). A CAR is raised if one of the following occurs: <ul style="list-style-type: none"> <li>(a) Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;</li> <li>(b) Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;</li> <li>(c) Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.</li> </ul> A Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. A FAR is raised during verification for actions if the monitoring and reporting require attention and/or adjustment for the next verification period. All CARs and CLs raised by the DOE during verification shall be resolved prior to submitting a request for issuance.
Lead Assessor	Details the content of the finding
Comments	
Ref	Refers to the item number in the Verification Protocol
Response	Please insert response to finding, starting with the date of entry.

**Please Note:** This is an open list and more findings may be added as verification progresses. Responses to each Finding and relevant associated documentation should be recorded in this form by the Client and send back to the Lead Assessor in one submission to SGS.

SGS reserves the right to review the associated fees and timeline if:

- more than one response submission is received from the Client
- a finding (CL/CAR), raised by the Lead Assessor prior to Technical Review stage, is not closed within 30 days of notification to the Client by SGS.

Rows for comments and further response will be appended to the table until the Findings has been addressed to the satisfaction of the Lead Assessor.

#### Findings Overview Summary

	CARs	CLs	FARs
Total Number raised	2	2	0

**Deadline for submission of Response by Client<sup>1</sup>: 07/06/2010, 14/07/2010**

<sup>1</sup> Response to all findings with relevant associated documentation to be sent to SGS in one submission.



Date:	24/05/2010	Raised by:	Nayan Jyoti Deka/Nitin Babber		
Type:	CAR	Number:	01	Reference:	AU4/RMP/AMSIIIH ver03
<b>Lead Assessor Comment:</b>			<b>Date:</b> 24/05/2010		
<ul style="list-style-type: none"> <li>PP is requested to clarify why the monitoring of Temperature and pressure of the gas has been omitted in the revised monitoring plan.</li> <li>PP is also requested to clarify why there is no monitoring of sludge is being done for the calculation of <math>PE_{y,s,final}</math> &amp; <math>ME_{y,s,untreated}</math></li> </ul> <p>PP is requested to kindly mention the version no. &amp; date in the RMP. Also, PP is requested to kindly provide the RMP, both in clean mode &amp; track change mode.</p>					
<b>Project Participant Response:</b>			<b>Date:</b> 10/06/2010		
<ul style="list-style-type: none"> <li>The monitoring of temperature and pressure of the biogas fuelled has been omitted from the revised monitoring plan as the temperature and pressure of a gas are required for computation of volume of the gas at normal pressure and temperature conditions from the actual gas conditions. Since the gas flow meters employed in the project activity measure gas flow in terms of Nm<sup>3</sup>, hence the monitoring of temperature and pressure conditions of the gas separately is not required. Hence the same has been removed from the revised monitoring plan.</li> <li>Sludge generated at bio gas plant is discharged through digester overflow to ETP inlet where the effluent stream is treated further employing Activated Sludge Process to meet the standards as laid down by PPCB. The same system was employed in the baseline activity and hence, the methane emission from the decay of the final sludge generated by the treatment systems has been neglected for the project activity.</li> <li>The RMP document has been modified to include the version no. and date of the document. Also the track change and clean version for the document has been provided to the DOE as Attachment 1 &amp; 2.</li> </ul>					
<b>Documentation Provided as Evidence by Project Participant:</b>					
Attachment 1: Revised Monitoring Plan – ver01_track changes					
Attachment 2: Revised Monitoring Plan – ver01_clean					
<b>Information Verified by Lead Assessor:</b>					
<p>(a) Clarification on monitoring of temperature and pressure of gas is still not correct.</p> <p>(b) Information on no monitoring of sludge is found to be acceptable.</p> <p>(c) Revised RMP has been checked. PP has provided the RMP in both clean mode as well as track change mode.</p>					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
<p>(a) The revision in monitoring plan should not compromise on the conservativeness and accuracy, so same need to be retained in the monitoring plan. PP is requested to update the monitoring plan with temperature and pressure monitoring of the gas as these values will be required for crosschecking of the gas volume data. PP is also requested to define what reference temperature and pressure is being used while converting the gas volume from M<sup>3</sup> to NM<sup>3</sup>. Thus, CAR01(a) is open</p> <p>(b) As Sludge handling system in baseline and project scenario are same so the methane emission from the decay of the decay of the sludge is being correctly neglected. Hence the CAR1(b) is closed.</p> <p>(c) Required information (Version number and date) has been included in the Revised version of the RMP hence the CAR1(c) is closed.</p>					
<b>Project Participant Response:</b>			<b>Date:</b> 13/07/2010		
(a) The pressure and temperature used for conversion of m <sup>3</sup> to Nm <sup>3</sup> is 1 Atmosphere Pressure and 0 <sup>0</sup> C Temperature. The same can be confirmed from the flowmeter manual attached as Attachment 3. Further, the pressure and temperature monitoring has been included in the revised monitoring plan.					
<b>Documentation Provided by Project Participant:</b>					
Attachment 3: Flowmeter manual.					
<b>Information Verified by Lead Assessor:</b>					
Response provided by PP has been duly verified by the assessment team.					

<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	<b>Date:</b> 24/08/2010
In the revised monitoring Plan PP has included the monitoring of Pressure and Temperature And also clarified about the Pressure and Temperature values used for the conversion of m3 to NM3. The same has been checked with the flowmeter manual and found correct. Hence the CAR #01(a) is closed out.	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 24/08/2010

Date:	24/05/2010	Raised by:	Nayan Jyoti Deka/Nitin Babber		
Type:	CAR	Number:	02	Reference:	AU4/RMP/AMSIH ver03
Lead Assessor Comment:				Date: 24/05/2010	
(a) As mentioned in the RMP 'the flare efficiency for the project activity will be taken as 50%, when the flare will be operational and 0%, in case the flare is not operational.' However from the revised monitoring plan it is not clear that how this will be monitored whether flare is operational or not. PP is requested to clarify the same.					
(b) PP is also requested to clarify about the data monitoring, data archiving & QA/QC procedure for the flare efficiency monitoring					
Project Participant Response:				Date: 10/06/2010	
(a) The flare employed in the project activity is an open flare system. According to the methodological tool "Tool to determine project emissions from flaring gases containing methane", Annex 13, EB 28, page 2, "In case of open flares, the flare efficiency cannot be measured in a reliable manner (i.e. external air will be mixed and will dilute the remaining methane) and a default value of 50% is to be used provided that it can be demonstrated that the flare is operational (e.g. through a flame detection system reporting electronically on continuous basis). If the flare is not operational the default value to be adopted for flare efficiency is 0%."					
For the project activity, the flare efficiency will be taken as 0%, and hence, monitoring for continuous operation of the flare system is not required.					
(b) As stated in the point above, the data monitoring, data archiving & QA/QC procedure for continuous operation of the flare system is not required.					
Documentation Provided as Evidence by Project Participant:					
-					
Information Verified by Lead Assessor:					
(a) Information provided by the PP was found to be acceptable.					
(b) Information provided by the PP was found to be reasonable and acceptable.					
Reasoning for not Acceptance or Acceptance and Close Out:					
(a) As per methodology AMS III.H version 03 Para 8 flare efficiency is to be monitored .PP is requested to again clarify why the flare efficiency is not being monitored and is being considered as zero.					
Please also explain the impact of this assumption on emission reduction calculation. Thus, CAR 02(a) open.					
(b) Pending to closure of CAR02 (a).					
Project Participant Response:				Date: 13/07/2010	
(a) The flare in the project activity is negligibly small, as the total gas generated in the project activity is utilized in two boilers out of which at least one is continuously in operation. Also, monitoring whether the gas flared is burnt properly or not is not feasible. Hence, continuous monitoring of the flare efficiency is not possible. However, to be on the conservative side, the flare efficiency in the project activity is assumed to be zero, and the entire flared gas would be subtracted from the gas generated to calculate gas fueled in the project activity and the same would be utilized for calculation of CER generated.					
(b) As stated in the point above, the data monitoring, data archiving & QA/QC procedure for continuous operation of the flare system is not required.					
Documentation Provided by Project Participant:					
Response as mentioned above					
Information Verified by Lead Assessor:					
Response provided by PP has been duly verified by the assessment team					

<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	<b>Date:</b> 24/08/2010
As flare efficiency is being considered as zero so the entire flared gas would be subtracted from the gas generated. This value will be used for the emission reduction calculation which will provide the most conservative value. Hence the response provided is acceptable and the CAR# 02 is closed out.	
<b>Acceptance and Close out by Lead Assessor:</b>	<b>Date:</b> 24/08/2010

Date:	24/05/2010	Raised by:	Nayan Jyoti Deka/Nitin Babber		
Type:	CL	Number:	03	Reference:	AU4/RMP/AMSIH ver03
<b>Lead Assessor Comment:</b>				<b>Date:</b> 24/05/2010	
(a) PP to clarify about the possible impact on Emission Reduction Calculation by applying the revised monitoring plan.					
(b) PP is requested to clarify why Annex-4 is not included in the revised monitoring Plan.					
<b>Project Participant Response:</b>				<b>Date:</b> 10/06/2010	
(a) There is no possible impact on the Emission Reduction Calculation for the project activity by applying the revised monitoring plan. Ex post emission reductions calculation for the project activity is based on the lowest value of “amount of biogas fuelled or flared in the project activity” or “Ex post calculated baseline, project and leakage emissions based on actual monitored data”, which is a more conservative approach. Since the biogas fuelled or flared does not change with the revised monitoring plan, hence there is no change in the Emission Reduction Calculation.					
(b) The Annex - 4 pertaining to the Monitoring Information for the project activity was not included in the registered PDD. All the relevant and necessary information was included under section D.3 and D.4 and the same has been revised in the RMP document.					
<b>Documentation Provided as Evidence by Project Participant:</b>					
-					
<b>Information Verified by Lead Assessor:</b>					
(a) As per revised monitoring plan Emission Reduction Calculations would be cross verified by the amount of biogas fuelled or flared in the project activity. Hence the RMP will improve the accuracy and reliability of the monitoring system hence the CL3 (a) is being closed.					
(b) Annex-4 was not present in the version of the PDD in which the project was registered. However, same information has been correctly included under section D.3 & D.4 in the RMP. Hence the CL3 (b) is closed.					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
PP has provided the clarification about the possible impact on Emission Reduction Calculation by applying the revised monitoring plan which has been found to be satisfactory. Also, clarification of Annex-4 has been provided by the PP which is acceptable. Thus, CL03 was closed.					
<b>Acceptance and Close out by Lead Assessor:</b>				<b>Date:</b> 30/06/2010	

Date:	24/05/2010	Raised by:	Nayan Jyoti Deka/Nitin Babber		
Type:	CL	Number:	04	Reference:	AU4/RMP/AMSIIIH ver03
<b>Lead Assessor Comment:</b>				<b>Date:</b> 24/05/2010	
<p>(a) QA/QC procedures are to be explained clearly in the revised monitoring plan. Data monitoring, archiving and reporting procedure about the additional parameters included in the RMP are not clearly described.</p> <p>(b) PP is requested to provide the information on monitoring equipment and respective positioning in order to safeguard a proper installation.</p> <p>(c) PP is requested to clarify about procedures identified for calibration of monitoring equipment</p>					
<b>Project Participant Response:</b>				<b>Date:</b> 10/06/2010	
<p>(a) QA/QC procedures for the monitored parameters have been elaborately explained in the revised monitoring plan. Data monitoring, archiving and reporting procedure about the additional parameters are also included in the RMP, with clear and elaborate description.</p> <p>(b) The line diagram describing the respective positioning of the monitoring equipments have been provided as Attachment 4.</p> <p>(c) The calibration frequency and procedures have been included in the revised monitoring plan.</p>					
<b>Documentation Provided as Evidence by Project Participant:</b>					
<i>Attachment 4: Line Diagram depicting the positioning of meters and metering arrangements.</i>					
<b>Information Verified by Lead Assessor:</b>					
<p>(a) RMP has been checked and found that QA/QC procedure and Data monitoring, archiving and reporting procedure about the additional parameters included in the RMP.</p> <p>(b) Attachment 4, line diagram has been checked and found to be ok; however, same information has to be describing in the RMP.</p> <p>(c) Calibration frequency and procedures are included in the RMP.</p>					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
<p>(b) PP is requested to include the information on monitoring equipment and respective positioning in the Revised Monitoring Plan also.</p> <p>Thus, CL04 is open.</p>					
<b>Project Participant Response:</b>				<b>Date:</b> 13/07/2010	
<p>(a) The information on monitoring equipment and respective positioning has been incorporated in the revised Monitoring Plan.</p>					
<b>Documentation Provided by Project Participant:</b>					
Revised Monitoring Plan					
<b>Information Verified by Lead Assessor:</b>					
Revised Monitoring Plan					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>				<b>Date:</b> 26/08/2010	
<p>PP has included the information on monitoring equipment and respective positioning in the Revised Monitoring Plan. Hence the CL#4 is closed out.</p>					
<b>Acceptance and Close out by Lead Assessor:</b>				<b>Date:</b> 26/08/2010	

## Statement of Competence

Name: Jyoti Deka, Nayan

### Status

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

### Scopes of Expertise

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

Approved Member of Staff by:

Siddharth Yadav

Date:

28/10/2009

## Statement of Competence

Name: Babber, Nitin

### Status

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

### Scopes of Expertise

<b>1. Energy Industries (renewable / non-renewable)</b>	<input type="checkbox"/>
<i>Sub scope(s):</i>	
<b>2. Energy Distribution</b>	<input type="checkbox"/>
<i>Sub scope(s):</i>	
<b>3. Energy Demand</b>	<input checked="" type="checkbox"/>
<i>Sub scope(s): Energy Efficiency in Thermal Application systems and Energy Efficiency in Electrical Application systems</i>	
<b>4. Manufacturing</b>	<input type="checkbox"/>
<i>Sub scope(s):</i>	
<b>5. Chemical Industry</b>	<input checked="" type="checkbox"/>
<i>Sub scope(s): CO2 substitution from fossil fuel or fuels of mineral origin</i>	
<b>6. Construction</b>	<input type="checkbox"/>
<i>Sub scope(s):</i>	
<b>7. Transport</b>	<input type="checkbox"/>
<i>Sub scope(s):</i>	
<b>8. Mining/Mineral Production</b>	<input type="checkbox"/>
<i>Sub scope(s):</i>	
<b>9. Metal Production</b>	<input type="checkbox"/>
<i>Sub scope(s):</i>	
<b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>	<input checked="" type="checkbox"/>
<i>Sub scope(s): Oil and Natural Gas - Natural Gas</i>	
<b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	<input type="checkbox"/>
<i>Sub scope(s):</i>	
<b>12. Solvent Use</b>	<input type="checkbox"/>
<i>Sub scope(s):</i>	
<b>13. Waste Handling and Disposal</b>	<input type="checkbox"/>
<i>Sub scope(s):</i>	
<b>14. Afforestation and Reforestation</b>	<input type="checkbox"/>
<i>Sub scope(s):</i>	
<b>15. Agriculture</b>	<input type="checkbox"/>
<i>Sub scope(s):</i>	

Approved Member of Staff by:

Siddharth Yadav

Date:

12 November 2009

## Statement of Competence

Name: Gautam, Ashok

### Status

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

### Scopes of Expertise

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

Approved Member of Staff by:

Siddharth Yadav

Date:

16/12/2009

## Statement of Competence

Name: Singh, Kaviraj

### Status

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

### Scopes of Expertise

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

Approved Member of Staff by:

Siddharth Yadav

Date:

16/12/2009



