

# VERIFICATION AND CERTIFICATION REPORT

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**Eco Carbon Pvt.Ltd.**

**India-FaL-G Brick and Blocks  
Project No.2**

**Monitoring Period 01/08/2011-31/03/2013 (Both  
days included)**

**(UN PA 4585)**

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**SGS Climate Change Programme**

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

<b>Date of Issue:</b>	<b>Project Number:</b>	
14/02/2014	CDM.VER1376 MP1	
<b>Project Title:</b>		
India-FaL-G Brick and Blocks Project No.2		
<b>Organisation:</b>	<b>Client:</b>	
SGS United Kingdom Limited	Eco Carbon Pvt.Ltd.	
<b>Publication of Monitoring Report:</b>		
<b>Monitoring Period:</b>	01/08/2011-31/03/2013 (Both the days included)	
First Monitoring Version and Date:	Version 1 dated 06/05/2013	
Final Monitoring Version and Date:	Version 7 dated 08/02/2014	
<b>Summary:</b>		
<p>SGS United Kingdom Ltd has performed the first periodic verification of the CDM project “<b>India-FaL-G Brick and Blocks Project No.2</b>”, with UNFCCC Ref. Number: 4585, registration date of 20/06/2011 and monitoring period from 01/08/2011-31/03/2013 (Both the days included). The verification includes confirming the implementation of the monitoring plan of the registered PDD version 4 dated 16/06/2011, revised PDD, version 7 dated 08/02/2014 and the application of the monitoring methodology as per AMS-III.Z, version 3. A site visit was conducted to verify the data submitted in the monitoring report. SGS confirms the following has been reviewed:</p> <ul style="list-style-type: none"> <li>(a) The registered PDD, including the monitoring plan and the corresponding validation report;</li> <li>(b) The revised PDD</li> <li>(c) The applied monitoring methodology, AMS-III.Z, version 3;</li> <li>(d) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;</li> <li>(e) All information and references relevant to the project activity’s resulting in emission reductions.</li> </ul> <p>The project activity uses “FaL-G technology” to produce bricks and blocks using fly ash, lime and gypsum as the key constituents. These FaL-G bricks and blocks replace the conventional sintered clay bricks as an alternative building material, thus avoiding the use of thermal energy by the use of the fossil fuel (coal), thus reducing the GHG emissions.</p> <p>SGS confirms that the project is implemented in accordance with the validated registered Project Design Document<sup>1/</sup> and revised Project Design Document (for changed elements) version 7<sup>1.3/</sup> dated 08/02/2014 being submitted along with the request for issuance. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information seen and evaluated we confirm that the implementation of the project has resulted in <b>15,727 tCO<sub>2</sub>e</b> emission reductions during period 01/08/2011-31/03/2013 (both days included).</p>		
<b>Subject:</b>		
CDM Verification		
<b>Verification Team:</b>		
Shivaji Chakraborty – Lead Assessor Sauvik Banerjee – Assessor Shivaji Chakraborty – Local Assessor Naveen Sharma – Sectoral Scope Expert (TA 4.1) Shivaji Chakraborty – Sectoral Scope Expert (TA 1.1)		<input checked="" type="checkbox"/> No Distribution (without permission from the Client or responsible organisational unit)
<b>Technical Review:</b>		
Date: 20-02-2014 Name: Ajoy Gupta		
<b>Authorised Signatory:</b>		<input type="checkbox"/> Limited Distribution
Name: Siddharth Yadav Date: 03/03/2014		
		<input type="checkbox"/> Unrestricted Distribution

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5	14/02/2014	72	

## Abbreviations

BMTPC	Building Materials & Technology Promotion Council
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CaO	Calcium Oxide
CDM EB	Executive Board of Clean Development Mechanism
CEA	Central Electricity Authority
CEF	Carbon Emission Factor
CER	Certified Emission Reductions
CL	Clarification Request
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
CoP	Conference of Parties
CTM	Compressive strength Testing Machine
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
ECPL	Eco Carbon Private Ltd.
ER	Emission Reductions
FaL-G	Fly ash, Lime and Gypsum
Gg	Giga gram
GHG	Green House Gas(es)
GWh	Giga Watt Hour
HP	Horse Power
IPCC	Intergovernmental Panel on Climate Change
KT	Kilo Tonne
MP	Monitoring Plan
MPa	Mega Pascal
MR	Monitoring Report
MT	Metric Tonne
MW	Mega Watt
MWh	Mega Watt Hour
MoP	Member of Parties
NABL	National Accreditation Board for Testing and Calibration Laboratories
NCV	Net Calorific Value
ODA	Official Development Assistance
OPC	Ordinary Portland Cement
PDD	Project Design Document
PE	Project Entity
PP	Project Participant
PRC	Post Registration Change
QA/QC	Quality Assurance/ Quality Control
RMP	Revision in Monitoring Plan
SPE	Sub Project Entity
tCO <sub>2</sub> e	Tonnes of carbon di-oxide equivalent
TERI	Tata Energy Research Institute
TJ	Tera Joule
TPH	Tonnes per Hour
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual
VVS	Validation and Verification Standard

## Table of Content

1. Introduction.....	6
1.1 Objective.....	6
1.2 Scope .....	6
1.3 Project Activity and Period Covered.....	6
2. Methodology .....	8
2.1 General Approach .....	8
2.2 Verification Team for this Assessment .....	8
2.3 Means of Verification.....	8
2.3.1 Review of Documentation .....	8
2.3.2 Site Visits.....	9
2.4 Reporting of Findings .....	9
2.5 Internal Quality Control .....	10
3. Verification Findings.....	11
3.1 Project Implementation.....	11
3.2 Post registration changes .....	20
3.2.1 Temporary deviations from registered monitoring plan or applied methodology.....	20
3.2.2 Corrections .....	20
3.2.3 Permanent changes from registered monitoring plan or applied methodology .....	21
3.2.4 Changes to project design of registered project activity .....	21
3.2.5 Changes to start date of crediting period .....	23
3.3 Remaining Issues, CAR's, FAR's from Previous Validation or Verification.....	23
3.4 Completeness and accuracy of Monitoring .....	23
3.4.1 Verification of monitoring of parameters .....	23
3.4.2 Verification of implementation of sampling plan .....	29
3.5 Accuracy of Equipment.....	29
3.6 Summary of compliance with the calibration frequency requirements for measuring instruments.....	32
3.7 Accuracy of Emission Reduction Calculations.....	32
3.8 Quality of Evidence to Determine Emission Reductions .....	36
3.9 Management and operational System and Quality Assurance.....	36
3.10 Data from External Sources.....	37
4. Calculation of Emission Reductions.....	38
5. Recommendations for Changes in the Monitoring Plan.....	41
6. Overview of Results .....	42
7. Verification and Certification Statement.....	44
8. Document References .....	45
9. Findings Overview .....	49
10. Statement of Competence.....	66
11. Photographic Evidence .....	72

## 1. Introduction

### 1.1 Objective

SGS United Kingdom Ltd has been contracted by M/s Eco Carbon Pvt. Ltd. to perform an independent verification of its CDM project “**India-FaL-G Brick and Blocks Project No.2**”. CDM projects must undergo periodic audits and verification of emission reductions as the basis for issuance of Certified Emission Reductions (CERs).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The emissions report conforms with the requirements of the monitoring plan in the revised PDD and the approved methodology; and
- The data reported are complete and transparent.

### 1.2 Scope

The scope of the verification is the independent and objective review and ex post determination of the monitored reductions in GHG emission by the project activity. The verification is based on the validated and registered project design document and the monitoring report. The project is assessed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

SGS has, based on the recommendations in the Validation and Verification Standard, employed a risk-based approach in the verification, focusing on the identification of significant reporting risks and the reliability of project monitoring.

Due professional care has been exercised and ethical conduct has been followed by the assessment team during the verification process. The verification report is a fair presentation of the verification activity.

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

### 1.3 Project Activity and Period Covered

This engagement covers emissions and emission reductions from anthropogenic sources of greenhouse gases included within the project boundary of the following project and period.

Title of Project Activity:	India-FaL-G Brick and Blocks Project No.2
UNFCCC Registration Number:	4585
Monitoring Period Covered in this Report:	01/08/2011-31/03/2013 (Both the days included)
Project Participants:	<p>Host Country:</p> <p>India: Eco Carbon Pvt. Ltd.</p> <p>Annex I Country:</p> <p>Italy: Government of Italy- Ministry of the Environment, Land and Sea</p> <p>Netherlands: Netherland's Ministry of Infrastructure and the Environment (IenM)</p> <p>Luxembourg: Ministry of Sustainable Development and Infrastructure</p> <p>Germany: BASF SE;KfW</p> <p>Denmark: DONG Naturgas A/S; Danish Ministry of Climate, Energy and Building; Maersk Olie og Gas AS; Nordjysk Elhandel A/S; Aalborg Portland A/S</p>

	<p>Sweden: Goteborg Energi AB</p> <p>Belgium: Wallon Region; Wallon Air and Climate Agency; Bruxelles Environment-IBGE</p> <p>Finland: Ruuki Metals Oy</p> <p>Spain: EDP-Energias de Portugal, SA; Endesa Generacion, SA; Gas-Natural SDG,SA; Hidroelectrica del Cantabrico, SA; Kingdom of Spain- Ministry of the Agriculture; Food and Environment &amp; Ministry of Economy and Competetiveness</p> <p>Japan: Fujifilm Corporation; Idemitsu Kosan Co.Ltd; JX Nippon Oil &amp; Energy Corporation; The Okinawa Electric Power Corporation, Incorporated</p> <p>Austria: Kommunalkredit Public Consulting GmbH</p> <p>Norway: Statoil ASA</p> <p>Switzerland:Schweizerische Ruckversicherungsgesellschafts AG (Swiss RE)</p>									
Bilateral and Multilateral Funds:	<p>Community Development Carbon Fund (CDCF)</p> <p>Managing company: International Bank for Reconstruction and Development (IBRD) as Trustee of the Community Development Carbon Fund (CDCF)</p>									
Location of the Project Activity:	<p>The project activity is located in one district of Tamil Nadu and six districts of Andhra Pradesh, India.</p> <table border="1"> <thead> <tr> <th>State</th><th>District</th></tr> </thead> <tbody> <tr> <td>Tamil Nadu</td><td>Kanchipuram</td></tr> <tr> <td rowspan="4">Andhra Pradesh</td><td>Prakasam</td></tr> <tr> <td>Krishna</td></tr> <tr> <td>East Godavari</td></tr> <tr> <td>Visakhapatnam</td></tr> </tbody> </table>	State	District	Tamil Nadu	Kanchipuram	Andhra Pradesh	Prakasam	Krishna	East Godavari	Visakhapatnam
State	District									
Tamil Nadu	Kanchipuram									
Andhra Pradesh	Prakasam									
	Krishna									
	East Godavari									
	Visakhapatnam									

The CDM project activity involves the manufacturing of bricks and blocks via “FaL-G technology” as alternative building materials, in which the bricks and blocks are being manufactured using Fly ash, lime and Gypsum, which is an available source from waste and by-products of industries. The technology works with hydration chemistry among fly ash-lime-gypsum. The manufacturing of bricks through FaL-G technology involves two approaches: “FaL-G in lime route” and “FaL-G in OPC route” and such manufacturing does not involve any sort of energy intensive processes or equipment. Thus the FaL-G bricks and blocks replace the conventional burnt clay bricks as the alternative building materials, which in turn require an energy intensive sintering process. Therefore the project activity avoids GHG emissions by avoiding the use of the conventional sintering processes. Using the conventional sintering process as a baseline the project activity achieves real, measurable and verifiable GHG emissions on account of the implementation of FaL-G based bricks and blocks manufacturing process.

## 2. Methodology

### 2.1 General Approach

SGS performs the verification work using a Periodic Verification Checklist prepared following the VVS. The Periodic Verification Checklist describes the verification approach and the sampling plan.

The checklist gives the assessment team a full understanding of:

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the monitoring report.

Using the Periodic Verification Checklist, SGS verified the implementation of the monitoring plan and the data presented in the Monitoring Report for the period in question. This involved a site visit and a desk review of the monitoring report. This verification report describes the findings of this assessment.

Only verification activities undertaken after the publication of the monitoring report on the UNFCCC CDM website were used as a basis for SGS to conclude our verification and submit a request for issuance of CERs to the Board.

### 2.2 Verification Team for this Assessment

A team of competency has been selected to perform the verification of the project.

Name	Role
Shivaji Chakraborty	Lead Assessor, Local Assessor and Sectoral Scope Expert (TA 1.1).
Sauvik Banerjee	Assessor
Naveen Sharma	Sectoral Scope Expert (TA 4.1)

### 2.3 Means of Verification

#### 2.3.1 Review of Documentation

The validated registered PDD, revised PDD and the monitoring report submitted by the client and additional background documents related to the project performance were reviewed. A complete list of all documents reviewed is attached in section 8 of this report.



### 2.3.2 Site Visits

As part of the verification, the following on-site inspections have been performed by the assessment team.

<b>Location:</b> 1st Floor, 32-10-55, INSWAREB Lab Building, Shri Venkateswara Colony, Sheila Nagar, Visakhapatnam, Andhra Pradesh-530012 Also, the following SPEs were checked during on site assessment: 1. NRK Infra System Pvt.Ltd. 2. Sagar Quality Bricks 3. Varalakshmi Fly Ash Bricks 4. Golden Bricks Industries 5. Sai Niveditha Brick Industries 6. Koneru Fly ash Products 7. Anaparthi Reddy Fal-G Brick Industry 8. Sai Lakshmi FaL-G Bricks 9. Sri Sai Kripa Innovative Building Materials Industries	
<b>Date:</b> 04/06/2013 – 06/06/2013	
Coverage:	Source of Information / Persons Interviewed
Verification of monitoring and data handling procedure (reporting, recording and data archiving)	Mr. N.Kalidas (Executive Director, ECPL) Dr. N.Bhanumatidas (Managing Director, ECPL)
Site visit: Inspection of infrastructure and equipments, calibration, maintenance, personnel training.  Detailed review of project activity and verification of monitoring procedures implementation, Monitored data verification. Interview of persons involved in project monitoring	Mr. N.Kalidas (Executive Director, ECPL) Dr. N.Bhanumatidas (Managing Director, ECPL) Ms. E.A.R.I.S Sowmya (Carbon Inspector, ECPL) Ms. M. Priyadarsini (Project Coordinator, ECPL)

### 2.4 Reporting of Findings

As an outcome of the verification 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 team shall raise a Clarification Request (CL) specifying what additional information is required.

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

- I. Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- II. Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- III. Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;

- IV. Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants

The verification process may be halted until this information has been made available to comply with the requirements of the CDM Executive Board. Failure to address a CL may result in a CAR. Information or clarifications provided as a result of a CL may also lead to a CAR.

A clarification request (CL) will be raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CLs raised during verification shall be resolved prior to submitting a request for issuance.

Corrective Action Requests and Clarification Requests are raised in the Periodic Verification Checklist. The Project Developer is given the opportunity to “close” outstanding CARs and respond to CLs.

Forward Action Requests (FARs) may be raised during verification for actions where the monitoring and reporting require attention and/or adjustment for the next verification period, which are for the benefit of future projects and future verification activities. These have no impact upon the completion of the verification activity.

All CARs, CLs and FARs for this verification period are included in this report.

## **2.5 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 Review Team. The task of the Technical Review Team 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.

### **Technical Review Team**

<b>Name</b>	<b>Role</b>
Ajoy Gupta	Technical Reviewer
Kartar Narang	Sectoral Scope expert TA 4.1
Tarit Roy	Sectoral Scope expert TA 1.1

### 3. Verification Findings

#### 3.1 Project Implementation

The CDM project activity involves the manufacturing of bricks and blocks via “FaL-G technology” as alternative building materials, in which the bricks and blocks are being manufactured using Fly ash, lime and Gypsum as inputs which is an available source from waste and by-products of industries. The technology works with hydration chemistry among fly ash-lime-gypsum. The manufacturing of bricks through FaL-G technology involves two approaches: “FaL-G in lime route” and “FaL-G in OPC route”. The proportions of lime and gypsum are dependent upon the chemical constituents and the behavior of fly ash. The technology is thus custom built with process parameters to yield a product of superior technical virtues.

The bricks produced through this technology do not have to undergo the sintering process unlike conventional burnt clay brick manufacturing and thus avoids the usage of fossil fuels to generate the thermal energy required for the sintering process. The product hardens in the FaL-G process following the chemical reactions that undergo in cement technology. Thus, the project avoids the use energy intensive process and fossil fuel consumption that would have otherwise been used in the conventional burnt clay brick production as the baseline.

The project has been implemented as per the registered PDD<sup>/1/</sup> and the revised PDD version 7 dated 08/02/2014<sup>/1.4/</sup> (being submitted along with this RFI).

This is the first periodic verification of the project activity and the project activity was checked and found to be implemented, equipments installed and operated in accordance with the applied approved methodology, registered PDD<sup>/1/</sup> and the revised PDD version 7 dated 08/02/2014<sup>/1.4/</sup> and hence is accepted by the assessment team.

The start date of the project activity is 01/06/2004<sup>/19/</sup>. The same was checked against application for Permanent Registration Certificate of the SPE for Sri Varalakshmi Fly Ash Bricks which contains the date of SPE being included from 01/06/2004 which was found to be the earliest date of all the SPEs present and thus accepted as the 1<sup>st</sup> date of commencement of the project activity. This was further cross checked with the original copy of the Permanent Registration Certificate<sup>/20/</sup> of the SPE Sri Varalakshmi Fly Ash Bricks which was issued on 03/02/2005 and was also found to be the 1<sup>st</sup> Permanent Registration Certificate of all the SPEs involved in the project activity.

The project is fully operational as described in the registered<sup>/1/</sup> and revised<sup>/1.3/</sup> PDDs however, the project design change in the revised PDD is being submitted along with the request for issuance as per the provision of Appendix 1 of CDM Project Standard version 05.0. Originally, the registered CDM project activity was a bundle of 11 FaL-G plants independently owned and operated by Sub-Project Entities (SPEs). However at the post registration phase, two units have been excluded from the bundle. One of the unit (ID no: AP/VZM/II/11) have been excluded from the bundle due to the non-compliance of the internal documents and another unit (vide ID No. AP/GTR/II/6) has opted to withdraw from the registered bundled project voluntarily. These exclusions of two FaL-G plants were checked by the assessment team with reference to objective documentary evidences<sup>/28/</sup> made available by the PP during on site assessment and found to be consistent and thus, the bundle for the current monitoring period including 9 SPEs was found to be justified and acceptable. The project boundaries and all the equipments were checked and found to be in line with the registered PDD<sup>/1/</sup> and the revised PDD version 7 dated 08/02/2014<sup>/1.4/</sup> (being submitted along with this RFI). All the units were checked during the site visit to ensure they have obtained relevant statutory permits for operation.

The project boundaries and all the equipments were checked and found to be in line with the registered PDD<sup>/1/</sup> and revised PDD version 7 dated 08/02/2014<sup>/1.4/</sup>.

The total quantity of emission reductions achieved by the project is the difference between the emissions due to the production of specific volume (m<sup>3</sup>) of bricks and blocks produced in the project, and the emissions that would have occurred due to the production of equal volume of clay bricks. The GHG emission reduction achieved is real, measurable and verifiable on account of the implementation of the project activity.

This is the first periodic verification of the bundled project activity and the project activity was checked and found to be implemented, equipments installed and operated in accordance with the applied approved

methodology, registered PDD<sup>/1/</sup> and the revised PDD version 7 dated 08/02/2014<sup>/1.4/</sup> and hence is accepted by the assessment team.

Originally, the registered CDM project activity was a bundle of 11 plants independently owned and operated by Sub-Project Entities (SPEs). However, two units were found to be excluded from the bundle. One of the unit ID no: AP/VZM/II/11 was excluded from the bundle due to the non-compliance of the internal documents and another unit vide ID No. AP/GTR/II/6 has opted to withdraw from the project voluntarily. The project boundaries and all the equipments were checked and found to be in line with the registered PDD<sup>/1/</sup> and revised PDD<sup>/1.3/</sup>. All the 9 units were checked during the site visit to ensure they have obtained relevant statutory permits for operation.

The project activity consists of 9 SPEs. All the 9 SPEs were checked physically and found to be fully commissioned. The start date of commercial operation of each of the SPE as verified against the SSI registration<sup>/29/</sup> details is as follows:

Sl.no.	Name of the SPE	Commencement of Production as per SSI Registration	Means of Verification
1	NRK Infra System Pvt. Ltd.	10/03/2005	SSI registration dated 10/03/2005 was checked and found consistent.
2	Sagar Quality Bricks	09/12/2004	SSI registration dated 09/12/2004 was checked and found consistent.
3	Sri Varalakshmi Fly Ash Bricks	04/12/2004	SSI registration dated 04/12/2004 was checked and found consistent.
4	Golden Bricks Industries	19/04/2006	SSI registration dated 19/04/2006 was checked and found consistent.
5	Sai Niveditha Brick Industries	13/04/2006	SSI registration dated 13/04/2006 was checked and found consistent.
6	Koneru Fly ash Products	17/02/2005	SSI registration dated 17/02/2005 was checked and found consistent.
7	Anaparthi Reddy Fal-G Brick industry	01/01/2005	SSI registration dated 01/01/2005 was checked and found consistent.
8	Sai Lakshmi FaL-G Bricks	02/04/2006	SSI registration dated 02/04/2006 was checked and found consistent.
9	Sri Saikripa Innovative Building Materials Industries	30/11/2004	SSI registration dated 30/11/2004 was checked and found consistent.

The following has been checked to verify the applicability of the methodology to the project activity.

Technology/ Measures as per the approved methodology, AMS-III.Z. version 3 <sup>71</sup>	Applicability/ Means of Verification
<p><i>The methodology comprises one or more technology/measures listed below in brick production facilities:</i></p> <ul style="list-style-type: none"> <li>• <i>Shift to an alternative brick production technology/process; or</i></li> <li>• <i>Complete/Partial substitution of fossil fuels with renewable biomass (including solid biomass residues such as sawdust and food industry organic liquid residues); or</i></li> <li>• <i>Complete/partial substitution of high carbon fossil fuels with low carbon fossil fuels</i></li> </ul>	<p>The project activity is the implementation of an alternative brick production technology/ process where the bricks are produced with fly ash, lime/cement and gypsum in contrast to the conventional burnt clay brick manufacturing through energy intensive sintering process.</p> <p>The same was checked by the assessment team during site visit and found to be consistent.</p>
<p><i>Fuel substitution and associated activities may also result in improved energy efficiency of existing facility; however project activities primarily aimed at emission reductions from energy efficiency measures shall apply AMS-II.D “Energy efficiency and fuel switching measures for industrial facilities”. Thus, the methodology is applicable for the production of:</i></p> <ul style="list-style-type: none"> <li>• <i>Bricks that are the same in the project and baseline cases; or</i></li> <li>• <i>Bricks that are different in the project case versus the baseline case due to a change(s) in raw materials, use of different additives, and/or production process changes resulting in reduced use or avoidance of fossil fuels for forming, sintering (firing) or drying or other applications in the facility as long as it can be demonstrated that the service level of the project brick is comparable to that of the baseline brick. Examples include pressed mud blocks (soil blocks) with cement or lime stabilization and other ‘unburned’ bricks that attain strength due to fly ash, lime/cement and gypsum chemistry.</i></li> </ul>	<p>The bricks used in the FaL-G process attain strength due to fly ash, lime/cement and gypsum chemistry. The FaL-G technology differs from the conventional brick making technology in the selection of raw materials and the elimination of the sintering part of the conventional brick making process due to hydration chemistry among fly ash-lime-gypsum.</p> <p>The same was checked by the assessment team during site visit and found to be consistent.</p>
<p><i>The measures may replace, modify or retrofit systems in existing facilities or be installed in a new facility.</i></p>	<p>The project activity is a bundle of 9 SPEs which are all Greenfield projects.</p> <p>The same was checked by the assessment team during site visit and found to be consistent.</p>
<p><i>New facilities (Greenfield projects) and project activities involving capacity additions are only eligible if they comply with the related and relevant requirements in the General Guidance for SSC methodologies..</i></p>	<p>The project activity is a bundle of 9 SPEs which are all Greenfield projects.</p> <p>The same was checked by the assessment team during site visit and found to be consistent.</p>
<p><i>The requirements concerning demonstration of the remaining lifetime of the replaced equipment shall be</i></p>	<p>The project activity is a bundle of 9 SPEs which are all Greenfield projects. There is no SPE which is</p>

<p><i>met as described in the “General Guidelines for SSC CDM methodologies”. If the remaining lifetime of the affected systems increases due to the project activity, the crediting period shall be limited to the estimated remaining lifetime, i.e. the time when the affected systems would have been replaced in the absence of the project activity.</i></p>	<p>involved in retrofit or modification of an existing system and hence the criterion of the remaining lifetime is not applicable here.</p> <p>The same was checked by the assessment team during site visit and found to be consistent.</p>
<p><i>In the case of existing facilities, this category is only applicable if it can be demonstrated, with historical data, that for at least three year prior to the project implementation, only fossil fuel (no renewable biomass) was used in the brick production systems, which are being modified or retrofitted.</i></p>	<p>The project activity is a bundle of 9 SPEs which are all Greenfield projects and not existing facilities. Hence, this criterion is not applicable here.</p> <p>The same was checked by the assessment team during site visit and found to be consistent.</p>
<p><i>In the case of project activities involving changes in raw materials (including additives), it shall be demonstrated that additive materials are abundant in the country/region, according to the following procedures:</i></p> <p><b>Step 1:</b> <i>using relevant literature and/or interviews with experts, a list of raw materials to be utilized is prepared based on the historic and/or present consumption of such raw materials.</i></p> <p><b>Step 2:</b> <i>the current supply situation for each type of raw material to be utilized is assessed and their surplus availability is demonstrated using one of the approaches below:</i></p> <ul style="list-style-type: none"> <li>• <i>Approach 1: demonstrate that the raw materials to be utilized, in the region of the project activity, are not fully utilized. For this purpose, demonstrate that the quantity of material is at least 25% greater than the demand for such materials or the availability of alternative materials for at least one year prior to the project implementation;</i></li> <li>• <i>Approach 2: demonstrate that suppliers of the raw materials to be utilized, in the region of the project activity, are not able to sell all of their supply of these materials. For this purpose, project participants shall demonstrate that a representative sample of suppliers of the raw materials to be utilized, in the region, had a surplus of materials (e.g. at the end of the period during which the raw material is sold) that they could not sell and that is not utilized.</i></li> </ul>	<p>The bricks used in the FaL-G process attain strength due to hydration chemistry among fly ash-lime-gypsum. The FaL-G technology differs from the conventional brick making technology in the selection of raw materials and the elimination of the sintering part of the conventional burnt clay brick making process. The raw materials used in the project activity are abundant in the region and the country.</p> <p>The same was checked by the assessment team during site visit and found to be consistent. The availability of the same was further cross-checked against the document published by Government of India<sup>/18/</sup> and found to be consistent.</p>
<p><i>This methodology is applicable under the following conditions:</i></p> <p>(a) <i>The service level of project brick shall be comparable to or better than the baseline brick, i.e. the</i></p>	<p>a) The average range of compressive strength of baseline bricks is 3 to 6 MPa against which FaL-G brick and blocks give compressive strength of 6 to 12 MPa.</p>



<p><i>bricks produced in the brick production facility during the crediting period shall meet or exceed the performance level of the baseline bricks (in terms of, for example dry compressive strength, wet compressive strength, density). An appropriate national standard shall be used to identify the strength class of the bricks; bricks that have compressive strengths lower than the lowest class bricks in the standard are not eligible under this methodology. Project bricks are tested in nationally approved laboratories at six-month intervals (at a minimum) and test certificates on compressive strength are made available for verification;</i></p> <p><i>(b) The existing facilities involving modification and/or replacement shall not influence the production capacity beyond <math>\pm 10\%</math> of the baseline capacity unless it is demonstrated that the baseline for the added capacity is the same as that for the existing capacity in accordance with paragraph 4 above</i></p> <p><i>(c) Measures are limited to those that result in emission reductions of less than or equal to 60 kt CO<sub>2</sub> equivalent annually</i></p>	<p>The same was cross-checked against the publicly available data by BMTPC, Ministry of Housing &amp; Urban Poverty Alleviation, Government of India (<a href="http://www.bmtpc.org/DataFiles/CMS/file/01_Flyash_Brick1.pdf">http://www.bmtpc.org/DataFiles/CMS/file/01_Flyash_Brick1.pdf</a>)<sup>/21/</sup> by the assessment team and found to be consistent.</p> <p>b) The project does not involve any modification and/or replacement of any existing facility</p>
<p><i>This methodology is not applicable if local regulations require the use of the proposed technologies or raw materials for the manufacturing of bricks unless widespread non compliance (i.e. less than 50% of brick production activities in the country comply) of the local regulation evidenced.</i></p>	<p>The general non-compliance of the flyash utilisation in brick manufacturing process as per Flyash Notification by MoEF, Govt. Of India, was further justifiable from the public domain document <a href="http://moef.nic.in/downloads/public-information/MoEF-IIFM-thermal-power-plants.pdf">http://moef.nic.in/downloads/public-information/MoEF-IIFM-thermal-power-plants.pdf</a><sup>/22/</sup></p> <p>Further the review of following public domain documents and articles also reveals the low usage of fly ash in brick manufacturing and as such the non compliance of the local regulation can be accepted.</p> <p><a href="http://www.bvmengineering.ac.in/docs/published%20papers/civilstruct/Civil/101004.pdf">http://www.bvmengineering.ac.in/docs/published%20papers/civilstruct/Civil/101004.pdf</a><sup>/23/</sup></p> <p><a href="http://www.business-standard.com/india/news/brick-makers-seek-exemptiongreen-guidelines/188758/">http://www.business-standard.com/india/news/brick-makers-seek-exemptiongreen-guidelines/188758/</a><sup>/24/</sup></p> <p><a href="http://www.mse.ac.in/completed/proj-flyash.htm">http://www.mse.ac.in/completed/proj-flyash.htm</a><sup>/25/</sup></p> <p><a href="http://www.icjonline.com/forum/point_of_view.pdf">http://www.icjonline.com/forum/point_of_view.pdf</a><sup>/26/</sup></p> <p>The independent Report – Policy, institutional and legal barriers to economic utilisation of fly ash prepared by TERI (TERI Report No. 2006RD25) <a href="http://www.teriin.org/upfiles/projects/TOC/2006RD25_20101126122811.pdf">www.teriin.org/upfiles/projects/TOC/2006RD25_20101126122811.pdf</a><sup>/27/</sup> was checked and on page 5 the scope of ash usage has been indicated. Further on page 7, the barriers to ash utilisation in specific scopes have been included which indicates that</p>

	<p>although fly ash is abundant, utility of the same in the brick sector is low due to high production of clay bricks as compared to fly ash based bricks.</p> <p>Thus there is enormous non compliance in this sector with regard to the local regulation which is widespread. Thus this condition can be considered to be not applicable.</p>
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Based on the *ex-ante* estimated emission reductions calculation, the estimated emission reduction value for the 9 FaL-G bricks/blocks manufacturing units for the tenure of current monitoring period (1 year and 8 months) was 13,336 tCO<sub>2</sub>. In contrast to that, the actual emission reduction has been verified as 15,727 tCO<sub>2</sub> for the monitoring period 01/08/2011 – 31/03/2013 (1 year and 8 months). The difference in the expected and actual emission reduction values were justified by the PP based on the actual production achieved during current monitoring period vis-à-vis the production quantity considered in the *ex-ante* estimation. It has been verified that the during current monitoring period cumulatively 24% increased production has been achieved in contrast to the *ex-ante* estimations and the increased productions are attributed due to the variables like market demand, FaL-G units performance and worker's availability. The reasoning towards increased production was found to be reasonable and justified, thus accepted.

### Discussion of CAR/CL

Under section A.3 of the webhosted MR<sup>/2.i/</sup>, version 1 in the list of the project participants, the column that stated if the party involved wished to be considered as the PP, there were a number of countries that have an incorrect answer as per the information on the UN project page.

There were incorrect PP company names mentioned under section A.3 of the webhosted MR<sup>/2.i/</sup>:

- The Spanish PP shown in the MR is 'Ministry of Environment and Rural and Marine Affairs; Ministry of Economy and Finance' but the PP name should be 'Kingdom of Spain – Ministry of the Agriculture, Food and Environment & Ministry of Economy and Competitiveness'.
- The Belgium PP shown in the MR is 'Walloon Region Ministry of the EnvironmentBruxelles Environment – IBGE' but the PP name on the UNFCCC page is 2 different names 'Walloon Region: Walloon Air and Climate Agency' and 'Bruxelles Environment – IBGE'.
- The Japanese PP mentioned in the MR 'Daiwa Securities Capital Market Co.Ltd' is not listed as a PP on the UNFCCC project page.
- The Norwegian PP in the MR 'Statkraft Carbon Invest AS' is not listed as a PP on the UNFCCC project page.
- Section A.3 also mentions Canada as a PP, but on the UNFCCC project page, Canada is not shown as a PP.

Thus the PP was requested to clarify in accordance with VVS, version 5.0 paragraph 225<sup>/4/</sup>.

The PP was requested to clarify the why the name of all the PPs was not included on page 1 of the MR<sup>/2.i/</sup>. The PP was also requested to clarify that why all dates in the webhosted Monitoring report, version1<sup>/2.i/</sup> was not reported in DD/MM/YYYY format as per the requirement of EB 75 Annex 7.

In addition the following inconsistencies were observed in the MR<sup>/2.ii/</sup>. Thus CAR01 was further extended to request PP for further correction:

- Registration date mentioned on page 1 as "1 20/06/2011" which was found erroneous.
- General description of the project activity in section A.1 did not include the number and details of the bundled FaL-G units under the project activity and relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.) as per the requirement of MR Form Completion Guideline, Version 04 CDM-EB75-A07<sup>/30/</sup>.
- Under section A.2, the PP did not present location of the project activity description as per the requisite format of the MR Form Completion Guideline, Version 04 CDM-EB75-A07<sup>/30/</sup>. Furthermore,



the details referred to the appended Table 1 contained details of 11 SPEs, which was found contradictory with the revised project design corrected in the revised PDD.

- As per the requirement of MR Form Completion Guideline, Version 04 CDM-EB75-A07<sup>/30/</sup> for section A.4, the reference of the applied Methodological Tools was not been reported.
- The description under section B.1 related to implementation status of the project activity during the current monitoring period was found to be confusing between the no. (11 vs. 9) of bundled FaL-G plants. Further the correlation of the timeline April 2011 onwards, qualification of 11 units for earning credits till March 2011, along with the current monitoring period (01/08/2011-31/03/2013) and revised project design under revised PDD was non-transparent. The PP was requested to justify the actual status of implementation and starting date of operation for each site.
- As per the requirement of MR Form Completion Guideline, Version 04 CDM-EB75-A07<sup>/30/</sup> for section B.2.4, the version number and the completion date of the revised PDD had not been mentioned. The PP was requested to clarify the same.
- There was no such “Figure II” found showing the monitoring points under section C. Furthermore, as per MR Form Completion Guideline, Version 04 CDM-EB75-A07<sup>/30/</sup>, the diagrams of the monitoring system and the information flow had not been included under this Section.

**CAR01** was raised in this regard.

In response, the PP clarified in the updated and revised monitoring report, version 1 dated 06/05/2013<sup>/2.ii/</sup> (the PP did not change the version or date of the MR) was checked under section A.3 of the MR<sup>/2.ii/</sup> in the list of the project participants, the column that states if the party involved wishes to be considered as a PP, the countries have been found to be correctly included as per the information on the UNFCCC project page. The updated and revised monitoring report, version 1 dated 06/05/2013 was checked and found to include the PP company names mentioned under section A.3 of the MR<sup>/2.iv/</sup> correctly in line with the UNFCCC project page. The same was found to be in line with VVS, version 5 paragraph 225<sup>/4/</sup> and hence is accepted by the assessment team.

In the revised MR<sup>/2.ii/</sup> the PP has further included the name of all project participants and all the dates has been updated, which was checked and found to be in DD/MM/YYYY format as per the requirement of EB 75 Annex 7 and hence is accepted by the assessment team.

Further, the PP clarified and corrected the MR<sup>/2.iv/</sup> on the following aspects:

- The registration date on page 1 had been corrected in the revised MR, version 4<sup>/2.iv/</sup> dated 31/10/2013 which was checked and found to be consistent with the UNFCCC webpage and hence is accepted by the assessment team.
- The general description of the project activity description in section A.1 was found to include the numbers and details of the bundled FaL-G units under the project activity and relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.) under table-1 at the end of the MR, version 4, page 26. The same was found to be in line with MR Form Completion Guideline, Version 04 CDM-EB75-A07<sup>/30/</sup> and hence is accepted by the assessment team.
- The host party of the project had been correctly mentioned under section A.2 of the revised MR, version 4 dated 31/10/2013. The number of SPEs mentioned under table 2 was found to be consistent with the revised project design corrected in the revised PDD and hence is accepted.
- All the applied methodological tools have now been included with the detailed referencing which was found to be consistent with the MR Form Completion Guideline, Version 04 CDM-EB75-A07<sup>/30/</sup> and hence is accepted.
- The start date of the project activity as 01/06/2004 was found to be included correctly in the revised MR, version 4. As per the MR Form Completion Guideline, Version 04 CDM-EB75-A07<sup>/30/</sup> and hence is accepted.
- The version and the completion date of the revised PDD had been mentioned correctly and transparently in the revised MR, version 4<sup>/2.iv/</sup> and hence is accepted by the assessment team.
- The schematic diagram showing detailed monitoring points, details of monitoring system and organisational structure showing information flow had been included correctly and transparently in

the revised MR, version 4<sup>/2.iv/</sup> as Figure-II and Figure –III respectively at the end of the MR and hence are accepted by the assessment team.

On further reviewing of the MR version 4<sup>/2.iv/</sup>, there was inconsistencies observed with regards to the name of the PP and UNFCCC webpage. Further, the PP was requested to clarify on the inconsistency on page 7 under section B.2.2 of the MR, version 4<sup>/2.iv/</sup> as there was a correction made in the revised PDD with regard to the crediting period date and the inclusion of the version of VVS throughout the MR. Also on page 9 and page 15 (footnote-1) of the MR, version 4, a web link was referenced which was not found to have any relevant information with regards to the project.

In response, the PP had corrected the name of the PP along with small corrections in the formatting in the revised MR, version 5 dated 17/01/2014 which was checked against the UNFCCC webpage and was found consistent by the assessment team. The PP had also made a correction in the revised MR, version 5 dated 17/01/2014 under section B.2.2 which was checked against the revised PDD. Furthermore, the PP had applied the correct version of VVS, version 5.0 throughout the revised MR, version 5 dated 17/01/2014 and hence is accepted. The weblink on page 9 and page 15 (footnote-1) of the MR, version 5 dated 17/01/2014 was checked and was found to be corrected. Further corrections were done in (MR version 06 dated 25/01/2014) with regard to the involvement of CDCF as Bilateral and Multilateral Fund which was found to be consistent with the UNFCCC webpage and thus accepted. Thus, **CAR01** was satisfactorily closed by the assessment team.

**CAR02** was raised due to the following points and gaps in the MR<sup>/2.i/</sup>:

- The webhosted MR had not reported transparently the calibration details such as due date of calibration, any earlier calibration before March 2011, delay in calibration for the period if any, for the respective energy meters used to measure the parameter  $EC_{PJ,i,y}$  as per the requirement of paragraph 234-238 of VVS, version 5.0<sup>/4/</sup>.
- To get clarity with regard to the test certificates of bricks and provide details on who has conducted the test, the date of conducting the test.
- To clarify with regard to the internal audits being conducted and the frequency of internal audit and who conducts the internal audits
- Flow diagram with metering location as per the requirement of EB 54 Annex 34 was absent in the PDD.

Further, **CAR02** was extended due to the following inconsistent and insufficient information reported in the MR<sup>/2.iii/</sup>:

- The PP was requested to clarify whether this parameter  $P_{PJ,y}$  was directly monitored based on daily brick production number or Calculated based on other primary data.
- The conversion factor used to convert the brick production in numbers to cubic meter had not been reported. Please also confirm whether the QA/QC approach as per the registered monitoring plan had been conducted in actual during the current monitoring period.
- In Table 2, the energy meters replaced and new meter deployed for AP/PSM/II/3 and AP/VSP/II/10 sites, the respective timeline (date) and reason for such replacement and installation had not been reported.
- The PP was requested to clarify on the accuracy Class of the energy meters specified for SPE AP/EG/II/8 and AP/EG/II/9 as the same was not found to be consistent with regards to the energy meters verified by the assessment team during the site visit.
- The Accuracy Class for the energy meters AP/VSP/II/10 was not been reported.

- At the end of table 2, the accuracy class and calibration date and next due date for a "Sub meter" did not include energy meter serial number and moreover it was not found clear that under which SPE site this Sub meter was involved and whether that meter is directly involved for power metering.
- The PP was requested to clarify what is the actual monitoring/measurement and recording frequency for on-site diesel consumption and how the same is in line with the registered monitoring plan. The QA/QC procedure description was not found consistent with registered monitoring plan.
- The PP was requested to clarify why the compressive strength results for the current monitoring period had not reported in the MR
- The statement mentioned in section D.3 was not found to correlate with the requirement of MR Form Completion Guideline, Version 04 CDM-EB75-A07<sup>/30/</sup>; as none of the monitoring parameters reported under Section D.2 of the MR had followed the sampling plan approach as per the registered PDD<sup>/1/</sup> and revised PDD<sup>/1.3/</sup>. The PP was requested to clarify this issue.

In response, the PP included the accuracy details of the monitoring equipments along with exact serial numbers of meters used in the project activity mentioned in the MR version 1 dated 06/05/2013<sup>/2.ii/</sup> (The PP did not change the version or date of the MR based on findings) under section D.2 and also in the annexure Table 2, transparently along with their calibration details as per the requirement of paragraph 234-237 of VVS, version 5.0<sup>/4/</sup> and EB 75 Annex 7 and hence is accepted by the assessment team.

The PP included the calibration details of the energy meters in the MR version 1 dated 06/05/2013<sup>/2.ii/</sup> (The PP did not change the version or date of the MR based on findings) under section D.2 as per the requirement of paragraph 234-237 of VVS, version 5.0 and EB 75 Annex 7 and is thus accepted by the assessment team.

PP has also made the following corrections in the revised MR<sup>/2.iv/</sup> in response to the comments made:

- The parameter  $P_{PJ,y}$  is being calculated based on the number of the bricks produced and the volume of each brick. The same was found to be elaborated and duly clarified in the revised MR, version 4 under section D.2. The QA/QC approach as per the registered monitoring plan has been followed consistently during the current monitoring period and the same has been corrected in the revised MR, version 4 dated 31/10/2013<sup>/2.iv/</sup> and hence is accepted by the assessment team.
- The meter change details for SPE AP/PSM/II/3 and AP/VSP/II/10 sites, the respective timeline (date) and reason for such replacement and installation had been included transparently under table-3(a) at the end of the MR, version 4 dated 31/10/2013<sup>/2.iv/</sup> and hence is accepted by the assessment team.
- The relevant correction in accuracy class specified for SPE AP/EG/II/8 and AP/EG/II/9 was found to be done correctly in the revised MR, version 4 under table-3 and hence is accepted by the assessment team.
- The accuracy class of AP/VSP/II/10 had been included correctly under table-3 of the revised MR, version 4. The same was checked against the calibration certificate and was found consistent and hence is accepted by the assessment team.
- The serial number of the meter as per the calibration certificate dated 30/04/2012<sup>/15/</sup> refers L&G-TVE102/3 and the accuracy class as Class-1, which was found to be consistent with the revised MR, version 4 and hence accepted.
- The actual monitoring frequency for the parameter  $FC_y$  was found to be included transparently in the revised MR, version 4 on a daily basis. The QA/QC procedure description was found to be corrected in the revised MR, version 4. The same was checked against the registered monitoring plan and found to be consistent and hence is accepted by the assessment team.

- The detailed results of compressive strengths were found to be included transparently under table 4(a) and table 4(b) correctly. The same was checked against the respective compressive strength certificates<sup>/13/</sup> and found to be consistent and hence is accepted by the assessment team.
- The corrected statement related to sampling plan under section D.3 of the MR was checked and found to be corrected in the revised MR, version 4 which was found to be in line with the registered monitoring plan and MR completion guideline, version 04 CDM-EB75-A07<sup>/30/</sup> and hence is accepted by the assessment team.

Thus, **CAR02** was closed out satisfactorily by the assessment team.

### **3.2 Post registration changes**

There is post registration change in the form of changes in project design in the project activity i.e. two units out of total 11 FaL-G brick/block units in the registered PDD have been excluded from the project activity which falls under the provision of Paragraph 6 of Appendix 1 of CDM Project Standard, version 05 which does not require prior approval by the CDM EB. The revised PDD version 7 dated 08/02/2014<sup>/1.4/</sup> is being submitted along with this request for issuance.

The following changes have been made under the revised PDD<sup>/1.3/</sup> as per the provision of Appendix 1 of the CDM Project Standard version 05.0:

1. Number of FaL-G plants involved in the bundled project activity has been reduced from eleven to nine.
2. Due to the reduction of the FaL-G plants the relevant changes in production capacity of the project activity along with the ex-ante estimated emission reduction calculation has been also updated accordingly.
3. The start date of the crediting period has been updated and made consistent with the UNFCCC project view page.

It is to be noted that this project is registered under the previous regulatory framework (VVM track), and the old information is transferred to the new VVS track form to revise the PDD and the verification team confirms that the material (information) included in the new form is materially the same as the information in the registered PDD.

The same has also been confirmed during the on-site verification by the assessment team and discussed later in section 3.4.2 of this report.

#### **3.2.1 Temporary deviations from registered monitoring plan or applied methodology**

There are no temporary deviations from the registered monitoring plan or applied methodology in the project activity. The same has also been confirmed during the on-site verification by the assessment team.

#### **3.2.2 Corrections**

The start date of the crediting period has been updated and made consistent with the UNFCCC project view page. Further, the schematic diagram of FaL-G process under section A.3 of the PDD has been modified to include clarity on the location of power consumption metering between two consecutive steps of Storage of raw materials and Wet mixing in Roller Mixer; which was found consistent during the site visit made by the assessment team.

### 3.2.3 Permanent changes from registered monitoring plan or applied methodology

There are no permanent changes in the project activity from the registered monitoring plan or applied methodology. The same has also been confirmed during the on-site verification by the assessment team.

### 3.2.4 Changes to project design of registered project activity

The CDM project activity as per the registered PDD was a bundle of 11 plants owned and operated by individual Sub-Project Entities (SPEs). However at the post registration phase during March and June 2011, two units (SPE unit ID no: AP/VZM/II/11 and ID No. AP/GTR/II/6) have been excluded by the Project Entity from the bundle and data related to those two SPE units has been completely excluded from emission reduction calculation for the current monitoring period.

The SPE unit ID no: AP/VZM/II/11 (Sri Devi Building Material Industries at Andhra Pradesh) have been excluded from the bundle due to the non-compliance of the project related records as stipulated by the emission reduction transfer agreement for the project activity; which was checked against the letter of non-compliance issued to the SPE by ECPL dated 23/06/2011<sup>/34/</sup> and another unit ID No. AP/GTR/II/6 (Bhaskar Brick Industries at Andhra Pradesh) has opted to withdraw from the project, voluntarily; which was checked against the letter of withdrawal from the SPE to ECPL dated 27/03/2011<sup>/34/</sup> and found consistent. Withdrawal of these two SPEs (unit ID no: AP/VZM/II/11 and unit ID No. AP/GTR/II/6) from the project bundle has been self endorsed by the project entity M/s Eco Carbon Pvt. Ltd dated 22/06/2013<sup>/28/</sup> which was checked and found consistent by the assessment team. The project boundaries and all the equipments were checked and found to be in line with the registered PDD<sup>/1/</sup> and revised PDD<sup>/1.3/</sup>. All the 9 units were checked during the site visit to have obtained relevant statutory permits for operation. Thus, there is a change in the project design of the registered project activity.

As per the provisions laid down in Project Standard, version 05, "Appendix 1, Changes that do not require prior approval by the board", paragraph 6 was considered by the PP to demonstrate that there is no prior approval required for the change in the project design.

The Assessment team undertook step wise assessment of paragraph 6 to check if the justification provided by the PP was appropriate and acceptable.

As per paragraph 6 of Project Standard version 5.0:

Proposed or actual changes to the project design of a registered CDM project activity that do not adversely impact any of the following do not require prior approval by the Board:

Requirement as per paragraph 6 of Project Standard version 5.0	Justification and Means of Verification
(a) The applicability and application of the applied methodology under which the project activity has been registered;	The change in the project design of the registered project activity did not impact the applicability and application of the applied methodology (AMS-III.Z version 03) under which the project has been registered. The conformance of the same has already been discussed in the report under section 3.1 above and thus found to be in compliance of the requirements of the methodology. Due to the change in SPEs from 11 to 9, there is no applicability criterion which is affected. Documents related to the installations of the SPEs were checked it was found to be justifying all the applicability criteria of the methodology and thus accepted.
(b) The additionality of the project activity;	The assessment team checked the additionality demonstration of the registered PDD <sup>/1/</sup> . As per the registered PDD <sup>/1/</sup> , the project had justified the additionality of the project based on the following: 1) Barrier due to prevailing practice and

	<p>2) Technological barrier.</p> <p>1) <i>Barrier due to prevailing practices</i></p> <p>As per the registered PDD<sup>/1/</sup> and the validation report, the project is additional based on the prevailing practices. This demonstration is independent on the number of SPEs involved in the bundle and is an overall scenario of the market sector of the FaG bricks. The barrier demonstrated by the PP as per the registered PDD<sup>/1/</sup> is generic in nature and is independent of the size of the bundle. As such with the change of the number of SPEs there are no implications on the barrier as demonstrated by the PP as per the registered PDD<sup>/1/</sup>. The same was also checked by the assessment team during the on site visit and found consistent and thus accepted.</p> <p>2) <i>Technological barrier.</i></p> <p>As per the registered PDD<sup>/1/</sup> and the validation report, the project is additional based on the Technological Barrier. This demonstration is independent of the number of SPEs involved in the bundle and is a technology based demonstration of the FaG bricks over the other type of bricks available in the market. The barrier demonstrated by the PP as per the registered PDD<sup>/1/</sup> is generic in nature and is independent on the size of the bundle. As such with the change of the number of SPEs there are no implications on the barrier as demonstrated by the PP as per the registered PDD<sup>/1/</sup>. The same was also checked by the assessment team during the on site visit and found consistent and thus accepted</p>
(c) The scale of the project activity.	<p>The size of the bundle reduces from 11 to 9 SPEs. Due to this change of the capacity of the bundle, the estimated annual average emission reduction for the project activity is reduced from 11,294 tCO<sub>2</sub>e to 8,002 tCO<sub>2</sub>e. With this change of capacity of the project, the bundle project would not cross the limit of 60ktCO<sub>2</sub>e limit of small scale project activity and thus there is no scale change in the project. The aspect was checked for the applicability of the scale of the project activity and was found to be within the limits of small scale project activity i.e. 60ktCO<sub>2</sub>e and hence is accepted by the assessment team as having no effect on the scale of the project activity.</p>

Based on the assessments of all the three aspects, under the provisions of Appendix 1 of the CDM Project Standard version 5.0 have been found to be covered and thus it was concluded that there is no requirement of the prior approval of the project design change and the same has thus been included along with the MP1 submission. Revised PDD version 7 dated 08/02/2014<sup>/1.4/</sup> was checked and found to be consistently updated as per the changes in the project design and thus accepted.



### 3.2.5 Changes to start date of crediting period

There are no changes to the start date of crediting period in the project activity.

### 3.3 Remaining Issues, CAR's, FAR's from Previous Validation or Verification

There are no pending issues, CAR & FAR in validation and this is first previous verification.

### 3.4 Completeness and accuracy of Monitoring

#### 3.4.1 Verification of monitoring of parameters

Monitoring of reductions in GHG emissions to result from the registered project have been implemented in accordance with the monitoring plan contained in the registered PDD<sup>1/</sup> and revised PDD<sup>1.3/</sup>. The monitoring mechanism, including the data collection system, is effective and reliable.

#### Parameter 01: Production of bricks ( $P_{PJ,y}$ )

Monitoring Report, onsite checks Registered Monitoring Plan & Approved Methodology	Requirement in the applicable methodology and relevant EB Documents	Requirement in the registered monitoring plan	Implementation of the project	Conclusion on the compliance of the implementation with the monitoring plan & applicable methodology.
<b>Data/Parameter</b>	$P_{PJ,y}$	$P_{PJ,y}$	$P_{PJ,y}$	The nomenclature applied in the MR is in compliance with the registered monitoring plan.
<b>Description</b>	Production of bricks	Production of bricks	Production of bricks	The description applied in the MR is in compliance with the registered monitoring plan.
<b>Measured/Calculated /Default</b>	Calculated	Calculated	Calculated	The monitoring approach applied in the MR is in compliance with the registered monitoring plan. The same was further confirmed during the site visit against the stock registers.
<b>Source of data</b>	Stock registers of SPE	Stock registers of SPE	Stock registers of SPE	The source of data applied in the MR is in compliance with the registered monitoring plan. The same was further confirmed during the site visit against the stock registers.
<b>Monitoring equipment</b>	NA	NA	NA	As this is a calculated parameter as per the registered monitoring plan, this section is not applicable.
<b>Measuring/Reading/ Recording frequency</b>	Daily	Daily	Daily	The stock registers maintain a daily record of the brick productions. The same was also checked and confirmed

				during the site visit.
<b>Calculation method (if applicable)</b>	Number of bricks and blocks are converted to cubic meter	Number of bricks and blocks are converted to cubic meter	Number of bricks and blocks are converted to cubic meter	The calculation method used in the MR is in compliance with the registered monitoring plan. The same was checked against the daily stock registers and found to be consistent.
<b>QA/QC procedures</b>	Upon receipt of the monthly data on brick/block production from the plants, PE will review the data. The personnel of PE will make periodical visits to SPEs' plants to check the diligence of record keeping and the accuracy for ultimate diligence of emission computations.	Upon receipt of the monthly data on brick/block production from the plants, PE will review the data. The personnel of PE will make periodical visits to SPEs' plants to check the diligence of record keeping and the accuracy for ultimate diligence of emission computations.	Upon receipt of the monthly data on brick/block production from the plants, PE will review the data. The personnel of PE will make periodical visits to SPEs' plants to check the diligence of record keeping and the accuracy for ultimate diligence of emission computations.	The QA/QC approach used in the MR is in compliance with the registered monitoring plan. The same was checked during the site visit and found to be consistent.

## Parameter 02: Electricity consumption ( $EC_{PJ,i,y}$ )

Monitoring Report, onsite checks Registered Monitoring Plan & Approved Methodology	Requirement in the applicable methodology and relevant EB Documents	Requirement in the registered monitoring plan	Implementation of the project	Conclusion on the compliance of the implementation with the monitoring plan & applicable methodology.
<b>Data/Parameter</b>	$EC_{PJ,i,y}$	$EC_{PJ,i,y}$	$EC_{PJ,i,y}$	The nomenclature applied in the MR is in compliance with the registered monitoring plan.
<b>Description</b>	The electricity consumption	The electricity consumption	The electricity consumption	The description applied in the MR is in compliance with the registered monitoring plan.
<b>Measured/Calculated /Default</b>	Measured	Measured	Measured	The monitoring approach applied in the MR is in compliance with the registered monitoring plan. The same was further confirmed during the site visit against the stock registers.
<b>Source of data</b>	Electricity bills provided by the service provider (state electricity)	Electricity bills provided by the service provider (state electricity department).	Electricity bills provided by the service provider (state electricity department).	The source of data applied in the MR is in compliance with the registered monitoring plan. The same was



	department).			further confirmed during the site visit against the monthly electricity bills <sup>9/</sup> provided by the state electricity department.
<b>Monitoring equipment</b>	Electricity meter	Electricity meter	Electricity meter	As this is a measured parameter as per the registered monitoring plan. The same was checked during the site visit and found consistent.
<b>Measuring/Reading/Recording frequency</b>	Monthly/bimonthly	Monthly/bimonthly	Monthly/bimonthly	The measuring frequency mentioned in the MR is in compliance with the registered monitoring plan. The same was also checked and confirmed during the site visit.
<b>Calculation method (if applicable)</b>	NA	NA	NA	This is a measured parameter as per the registered monitoring plan. Hence, this section is not applicable here.
<b>QA/QC procedures</b>	SPEs submit to PE the electricity bill as provided by the Service Provider.  The information is verified and tallied with the records of SPE by the personnel of ECPL periodically. For this purpose ECPL personnel are imparted with in-house training	SPEs submit to PE the electricity bill as provided by the Service Provider.  The information is verified and tallied with the records of SPE by the personnel of ECPL periodically. For this purpose ECPL personnel are imparted with in-house training	SPEs submit to PE the electricity bill as provided by the Service Provider.  The information is verified and tallied with the records of SPE by the personnel of ECPL periodically. For this purpose ECPL personnel are imparted with in-house training	The QA/QC approach used in the MR is in compliance with the registered monitoring plan. The same was checked during the site visit and found to be consistent.

### Parameter 03: Consumption of diesel (FC<sub>y</sub>)

Monitoring Report, onsite checks  Registered Monitoring Plan & Approved Methodology	Requirement in the applicable methodology relevant Documents and EB	Requirement in the registered monitoring plan	Implementation of the project	Conclusion on the compliance of the implementation with the monitoring plan & applicable methodology.
<b>Data/Parameter</b>	FC <sub>y</sub>	FC <sub>y</sub>	FC <sub>y</sub>	The nomenclature applied in the MR is in compliance with the registered monitoring plan.
<b>Description</b>	Diesel consumption	Diesel consumption	Diesel consumption	The description of the parameter used in the MR is in compliance with the registered monitoring plan.

<b>Measured/Calculated /Default</b>	Measured	Measured	Measured	The measurement approach is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Source of data</b>	Stock register	Stock register	Stock register	The source of data is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Monitoring equipment</b>	Monitoring of daily fossil fuel consumption of production facility.	Monitoring of daily fossil fuel consumption of production facility.	Monitoring of daily diesel consumption through diesel tanks with level gauge	The monitoring equipment is in compliance with the requirement of applied methodology and registered monitoring plan. The same was also checked during on-site visit.
<b>Measuring/Reading/ Recording frequency</b>	Daily	Daily	Daily	The measuring and recording frequency is in compliance with the registered monitoring plan. The summed up daily measurement reading has been reported by the SPEs on monthly basis to the PE. The same was also checked during on-site visit.
<b>Calculation method (if applicable)</b>	NA	NA	NA	This is a measured parameter as per the registered monitoring plan. Hence, this section is not applicable here.
<b>QA/QC procedures</b>	Diesel consumption cross-check with the diesel purchase bills.	Diesel consumption cross-check with the diesel purchase bills.	Diesel consumption monitored value was cross-checked with the diesel purchased bills.	The QA/QC is in compliance with the registered monitoring plan. The same was also checked during on-site visit.

**Parameter 04:** Quantity of cement purchased by SPEs ( $Q_{OPC}$ )

Monitoring Report, onsite checks Registered Monitoring Plan & Approved Methodology	Requirement in the applicable methodology relevant Documents and EB	Requirement in the registered monitoring plan	Implementation of the project	Conclusion on the compliance of the implementation with the monitoring plan & applicable methodology.
<b>Data/Parameter</b>	$Q_{OPC}$	$Q_{OPC}$	$Q_{OPC}$	The nomenclature applied in the MR is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Description</b>	Quantity of cement purchased by the SPEs	Quantity of cement purchased by the SPEs	Quantity of cement purchased by the SPEs	The description of the parameter used in the MR is in compliance with the registered monitoring plan.

				The same was also checked during on-site visit.
<b>Measured/Calculated /Default</b>	Calculated	Calculated	Calculated	The calculation approach is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Source of data</b>	Purchase bills of cement	Purchase bills of cement	Purchase bills of cement	The source of data is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Monitoring equipment</b>	NA	NA	NA	This is a calculated parameter as per the registered monitoring plan. Hence, this section is not applicable here.
<b>Measuring/Reading/ Recording frequency</b>	Monthly	Monthly	Monthly	The measuring and recording frequency is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Calculation method (if applicable)</b>	The leakage emissions for using Cement is derived based on the default values of national average.	The leakage emissions for using Cement is derived based on the default values of national average.	The leakage emissions for using Cement is derived based on the default values of national average.	The calculation method is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>QA/QC procedures</b>	Upon receipt of the monthly data of purchase bills, the personnel of PE will make periodical visits to SPEs' plants to check the diligence of record keeping.	Upon receipt of the monthly data of purchase bills, the personnel of PE will make periodical visits to SPEs' plants to check the diligence of record keeping.	Upon receipt of the monthly data of purchase bills, the personnel of PE will make periodical visits to SPEs' plants to check the diligence of record keeping.	The QA/QC is in compliance with the registered monitoring plan. The same was also checked during on-site visit.

**Parameter 05: Quantity of mineral lime purchased by SPEs ( $Q_{ML}$ )**

Monitoring Report, onsite checks Registered Monitoring Plan & Approved Methodology	Requirement in the applicable methodology relevant Documents and EB	Requirement in the registered monitoring plan	Implementation of the project	Conclusion on the compliance of the implementation with the monitoring plan & applicable methodology.
<b>Data/Parameter</b>	$Q_{ML}$	$Q_{ML}$	$Q_{ML}$	The nomenclature applied in the MR is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Description</b>	Quantity of mineral lime purchased by the SPEs	Quantity of mineral lime purchased by the SPEs	Quantity of mineral lime purchased by the SPEs	The description of the parameter used in the MR is in compliance with the registered monitoring plan.

				The same was also checked during on-site visit.
<b>Measured/Calculated /Default</b>	Calculated	Calculated	Calculated	The calculation approach is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Source of data</b>	Purchase bills of lime	Purchase bills of lime	Purchase bills of lime	The source of data is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Monitoring equipment</b>	NA	NA	NA	This is a calculated parameter as per the registered monitoring plan. Hence, this section is not applicable here.
<b>Measuring/Reading/ Recording frequency</b>	As and when purchased.	As and when purchased.	As and when purchased.	The measuring and recording frequency is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Calculation method (if applicable)</b>	Based on purchase bills	Based on purchase bills	Based on purchase bills	The calculation method is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>QA/QC procedures</b>	All the information is verified and tallied with the records of SPE by the personnel of ECPL periodically. For this purpose in-house training is imparted to ECPL personnel.	All the information is verified and tallied with the records of SPE by the personnel of ECPL periodically. For this purpose in-house training is imparted to ECPL personnel.	All the information is verified and tallied with the records of SPE by the personnel of ECPL periodically. For this purpose in-house training is imparted to ECPL personnel.	The QA/QC is in compliance with the registered monitoring plan. The same was also checked during on-site visit.

**Parameter 06: Performance of project brick/ block in terms of Compressive strength once in six months**

Monitoring Report, onsite checks Registered Monitoring Plan & Approved Methodology	Requirement in the applicable methodology and relevant Documents	Requirement in the registered monitoring plan	Implementation of the project	Conclusion on the compliance of the implementation with the monitoring plan & applicable methodology.
<b>Data/Parameter</b>	Performance of project brick/ block in terms of Compressive strength once in six months	Performance of project brick/ block in terms of Compressive strength once in six months	Performance of project brick/ block in terms of Compressive strength once in six months	The nomenclature applied in the MR is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Description</b>	The brick/ block is tested in a Compressive strength Testing Machine (CTM) in any of the laboratories of	The brick/ block is tested in a Compressive strength Testing Machine (CTM) in any of the	The brick/ block is tested in a Compressive strength Testing Machine (CTM) in any of the laboratories of	The description of the parameter used in the MR is in compliance with the registered monitoring plan. The same was also

	polytechnics, engineering colleges, building centers, national laboratories etc., and the test certificates are provided by the laboratory.	laboratories of polytechnics, engineering colleges, building centers, national laboratories etc., and the test certificates are provided by the laboratory.	polytechnics, engineering colleges, building centers, national laboratories etc., and the test certificates are provided by the laboratory.	checked during on-site visit.
<b>Measured/Calculated /Default</b>	NA	NA	NA	The monitoring approach is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Source of data</b>	Test Certificate as provided by the testing laboratories	Test Certificate as provided by the testing laboratories	Test Certificate as provided by the testing laboratories	The source of data is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Monitoring equipment</b>	NA	NA	NA	The monitoring equipment is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Measuring/Reading/ Recording frequency</b>	Once in six months	Once in six months	Once in six months	The measuring and recording frequency is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>Calculation method (if applicable)</b>	NA	NA	NA	The calculation method is in compliance with the registered monitoring plan. The same was also checked during on-site visit.
<b>QA/QC procedures</b>	<p>Referred codes for testing of the bricks are : IS: 12894-2002: Pulverised Fuel Ash-Lime Bricks Specification (Table 1) IS:516-1959: Method of Test for Strength of Concrete</p> <p>Calibration of CTM for strength test is taken care by respective laboratories and outside the project boundary.</p>	<p>Referred codes for testing of the bricks are : IS: 12894-2002: Pulverised Fuel Ash-Lime Bricks Specification (Table 1) IS:516-1959: Method of Test for Strength of Concrete</p> <p>Calibration of CTM for strength test is taken care by respective laboratories and outside the project boundary.</p>	<p>Referred codes for testing of the bricks are : IS: 12894-2002: Pulverised Fuel Ash-Lime Bricks Specification (Table 1) IS:516-1959: Method of Test for Strength of Concrete</p> <p>Calibration of CTM for strength test is taken care by respective laboratories and outside the project boundary.</p>	The QA/QC is in compliance with the registered monitoring plan. The same was also checked during on-site visit.

### 3.4.2 Verification of implementation of sampling plan

The monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD<sup>1/</sup>, annex-4. All parameters stated in the monitoring plan and the applied methodology<sup>7/</sup> have been fulfilled in the current monitoring report (for the monitoring period 01/08/2011 to 31/03/2013).

The project activity does not involve any sampling plan for monitoring of the parameters.

### 3.5 Accuracy of Equipment

The values for all parameters are listed in section 4 of this report, 'Calculation of Emission Reductions'. The data adopted primarily from the monthly readings and cross checked against the biomass procurement data of ECPL and receipts towards biomass exported to ECPL<sup>/31/</sup> for the current monitoring period were cross checked during the on-site verification and found to have been correctly adopted for the emission reduction calculations in the ER calculation excel sheet<sup>/3iii/</sup>.

This is to confirm that appropriate methods and formulae for calculating baseline emissions, project emissions and emission reductions have been followed; and the *ex-ante* fixed baseline emission factor that was applied in the calculations have been found justified.

The project monitoring equipments used during the current monitoring period and respective calibration details as verified is described below:

Monitoring equipment	Monitoring parameter	S/N	Type	Level	Calibration frequency requirement	Calibration date	Validity	Are there delays in calibration?	Calibration Entity	Accreditation Certificate for the calibration entity Issuing authority Relevant
Electricity Meter	EC <sub>PJ,i,y</sub> For SPE I.D. no. TN/KCP/II/1	TEB 32989	Tri-vector	0.5	5 years	13/02/2012	5 years	Yes	TANGCO	NA
Electricity Meter	EC <sub>PJ,i,y</sub> For SPE I.D. no. AP/PSM/II/2	74746372	Tri-vector	1.0	5 years	23/03/2012	5 years	Yes		NA
Electricity Meter	EC <sub>PJ,i,y</sub> For SPE I.D. no. AP/PSM/II/3	MO 5333124	Tri-vector	1.0	5 years	10/01/2012	Meter has been changed by meter S/N: 16691186	No	Sothorn Power Distribution Company of A.P. Limited	NA
Electricity Meter	EC <sub>PJ,i,y</sub> For SPE I.D. no. AP/PSM/II/3	16691186	Tri-vector	1.0	5 years	09/03/2013	5 years	Yes	Sothorn Power Distribution Company of A.P. Limited	NA
Electricity Meter	EC <sub>PJ,i,y</sub> For SPE I.D. no. AP/PSM/II/4	ASW 76556	Tri-vector	1.0	5 years	08/02/2012	5 years	Yes	Sothorn Power Distribution Company of A.P. Limited	NA
Electricity Meter	EC <sub>PJ,i,y</sub> For SPE I.D. no. AP/PSM/II/5	K 280057	Tri-vector	1.0	5 years	24/02/2012	5 years	Yes	Sothorn Power Distribution Company of A.P. Limited	NA
Electricity Meter	EC <sub>PJ,i,y</sub> For SPE I.D. no. AP/KRIS/II/	APE33382	Tri-vector	0.5	5 years	10/08/2011	5 years	Yes	Sothorn Power Distribution Company	NA

	7								y of A.P. Limited	
<b>Electricity Meter</b>	EC <sub>PJ,i,y</sub> For SPE I.D. no. AP/VSP/II/10	16665	Tri-vector	1	5 years	12/11/2011	Meter has been changed by meter S/N: 524792	Yes	Sothorn Power Distribution Company of A.P. Limited	NA
<b>Electricity Meter</b>	EC <sub>PJ,i,y</sub> For SPE I.D. no. AP/VSP/II/10	524792	Tri-vector	1	5 years	26/09/2012	5 years	No	Sothorn Power Distribution Company of A.P. Limited	NA

N.B: The meter bearing serial no: MO5333124 and 16665, were replaced with meter bearing serial no: 16691186 and 524792 on 04/11/2012 and 11/06/2012 respectively as the old meters were not functional anymore. The assessment team checked and confirmed that the replaced meters were under the valid calibration period at the time of replacement. The same was checked against the log book records<sup>8/</sup> by the assessment team and was found to be consistent.

Five FaL-G plants (I.D. no. TN/KCP/II/1, AP/PSM/II/2, AP/EG/II/8, AP/EG/II/9 and AP/VSP/II/10) out of total nine SPEs under project activity had also consumed diesel for operation of onsite diesel generator sets. The monitored diesel consumption data as per plant stock register<sup>10/</sup> has been cross checked from diesel purchase records and found consistent.

### 3.6 Summary of compliance with the calibration frequency requirements for measuring instruments.

The calibration of the following measuring equipment has an impact on the claimed emission reductions:

#### A. Electricity meters used to measure the consumption of electricity of all SPEs.

As per the registered PDD<sup>/1/</sup> page 28, the calibration frequency defined for the electricity meter is under the purview of State Electricity Board, which is required to follow the national standard as laid down by the CEA, Ministry of Power, Government of India<sup>/17/</sup>, which states the calibration of electricity meters is to be conducted once in 5 years for the connected load above 20 HP. The PP does not have any control over the same. Furthermore, there is no established calibration schedules laid down by State Electricity Boards.

However, the PP has conducted the calibration for all existing energy meters between August 2011 and April 2012 and the current monitoring period is for the duration 01/08/2011-31/03/2013 (both days included). Hence, the calibration has been implemented after the start date of the monitoring period in consideration. Accordingly, the PP has conservatively applied the delay in calibration correction factor on the monitored electricity consumption data for the period 01/08/2011-31/03/2012 as per VVS 5.0, paragraph 238<sup>/4/</sup>. As per the calibration certificates<sup>/15/</sup> of the energy meters, the error is smaller than the maximum permissible error hence the PP has applied the paragraph 238(a) of VVS, version 5.0<sup>/4/</sup> for the month August 2011 to March 2012 for all the energy meters with respect to their corresponding calibration date and delay period from the first date of the current monitoring period. The data adjustment is found to be conservative and the adjusted measured values of the delayed calibration resulted in fewer claimed emission reductions.

It was checked and confirmed by the assessment team that the error is applied;

- i. In a conservative manner such that the adjusted measured values of the delayed calibration shall result in fewer claimed emission reductions.

For all measured values taken during the period between 01/08/2011-31/03/2012.

### 3.7 Accuracy of Emission Reduction Calculations

The FaL-G bricks and blocks production data of the individual 9 SPE has been adopted primarily from the daily data captured in the respective plant log books<sup>/8/</sup> and was checked for the current monitoring period and found to have been correctly adopted for the emission reduction calculations in the ER calculation excel sheet<sup>/3iii/</sup>. Further, the electricity consumption checked against the electricity bills<sup>/9/</sup> provided from the respective service providers, the quantities of mineral lime and cement consumed in the project activity as checked against the respective monthly purchase bills<sup>/11/ /12/</sup>, amount of diesel consumed as checked against the daily stock registers<sup>/10/</sup> and results of the compressive strengths done in every six months as checked against the respective test certificates<sup>/13/</sup> by the assessment team for the current monitoring period and found to have been correctly adopted for the emission reduction calculations in the ER calculation excel sheet<sup>/3iii/</sup>.

The ex-post emission reduction calculation has consistently adopted the methodological choice and equations as stipulated in the registered<sup>/1/</sup> and revised<sup>/1.3/</sup> PDD and applied Methodology AMS-III.Z version 03<sup>/7/</sup>. Furthermore, the *ex-ante* fixed default values have been considered as annual production specific emission factor (0.2683 t CO<sub>2</sub>/ m<sup>3</sup>), electricity emission factor (1.3 ton CO<sub>2</sub> per MWh), diesel emission factor (74.8 t CO<sub>2</sub>/ TJ at NCV of 43TJ/Gg), diesel density (820kg/KL), OPC emission factor (0.82 ton CO<sub>2</sub> per ton of cement) and mineral lime emission factor (0.42 tCO<sub>2</sub>/ ton of CaO) adopted from registered PDD<sup>/1/</sup> for the calculation of emission reductions, which have been duly checked and found to be consistent and hence accepted. This was confirmed by the assessment team that appropriate methods and formulae for calculating baseline emissions, project emissions and emission reductions have been followed; and the *ex-ante* fixed baseline emission factor that was applied in the calculations have been found justified.



## Discussion of CAR/CL:

**CAR03** was raised in order to get clarification with regards to the permanent changes in design of the project as identified during site audit as per the requirements of VVS, version 5.0 paragraph 249(b) and 250<sup>4/</sup> and whether the project design change have any effect on the following aspects:

- a. The applicability and application of the applied methodology under which the project activity has been registered;
- b. The additionality of the project activity;
- c. The scale of the project activity.

**CAR03** has been further extended requesting the PP to clarify on the following aspects identified in the revised PDD version 05 dated 02/07/2013<sup>1,2/</sup>:

- As per the requirement of paragraph 30 of CDM Project Standard, v05 (*Project participants shall provide a description of the proposed CDM project activity or PoA that provides an understanding of the nature of the project and its implementation*), the description presented in the Section A.1, Section B.2 (pg 15) & Section B.5 (21) of the revised PDD did not provide complete clarity on the involvement of total FaL-G brick plants in the revised project design as it mentioned both 11 and 9 SPE units at various locations in the states of Tamil Nadu and Andhra Pradesh.
- Revised PDD, page 8 stated *"The schematic FaL-G process is provided in a chart as below"* but there was no such schematic diagram appended. The PP was requested to clarify the same.
- Under section B.7.2 for Sampling plan it was stated as *"The units are visited randomly once in an year subject to minimum of 25% of operating units of the bundle."*, which was not found to correlate with the PDD completion guideline EB66 Annex 9 which requires – *"If data and parameters monitored in section B.7.1 above are to be determined by a sampling approach, provide a description of the sampling plan in accordance with the recommended outline for a sampling plan in the "Standard for sampling and surveys for CDM project activities and programme of activities."* The PP was requested to clarify on this issue as none of the monitoring plan for the parameters described under section B.7.1 adopted sampling plan approach.

In response, the PP had updated and revised monitoring report, version 3 dated 10/07/2013. This was checked and found to include the justification under section B.2.4 of the MR transparently. The same was cross-checked by the assessment team during the on site visit and it was confirmed that the changes would not affect the conclusions of the validation report of the registered PDD with regard to:

1. Additionality of the project activity
2. Scale of the project activity
3. Applicability and application of approved baseline methodology under which the project activity has been registered; or
4. The compliance of the monitoring plan with the applied monitoring methodology

In addition, the PP corrected the description mentioned under Section A.1, Section B.2 & Section B.5 in the revised PDD, version 6<sup>1,3/</sup>. This was checked and found to be consistent with the actual number of SPEs in the project activity and hence is accepted by the assessment team.

The revised PDD, version 6 was checked and the schematic diagram was included correctly and hence is accepted by the assessment team.

The sampling plan approach had been correctly addressed in the revised PDD, version 6 and hence is accepted.

The same is found to be in line with VVS, version 5.0 paragraph 273<sup>4/</sup> and hence is accepted. Thus, **CAR03** was closed out.

**CAR04** was raised due to the following non conformities:

- The PP was further requested to clarify the actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards in section E.7 of the webhosted MR<sup>2/</sup>.
- The PP was requested to clarify the linking of the monthly data to yearly data in the emission reduction sheet during calculation of emission reduction for continued flow of data and clarify in the MR<sup>2/</sup> with regard to the frequency of archiving in the log books on daily data and archiving in excel sheet on monthly basis for the data received from the SPEs.
- **Section E.1 (Description on calculation of baseline emissions) of MR:** The baseline emission calculation as per the methodological description on “*Annual production specific emission factor (EF<sub>BL</sub>)*” and “*Biomass Correction Factor*” was found to be directly imported from the registered PDD without appropriate referencing and correlation to ex-post ER calculation approach. The PP was requested to clarify the same.
- **Section E.4 and E.5 (Summary and comparison of ER value) of MR:**
  - The reported time period as presented to report the ER summary was not found sufficiently clear and specific in terms of month and date.
  - The final ER value had not been presented as the conservative rounded down whole number.
  - The leakage value reported for the time period 2011-2012(August 2011-March 2012) seemed to be erroneous as the calculation approach adopted in the ER spreadsheet was found to be inconsistent with the registered monitoring plan.
  - The final ER value in Section E.5 was found to be inconsistent with the value reported in section E.4.
- **Section E.6 of MR:** The PP was requested to clarify how the variables such as market demand, unit performance and worker’s availability had impacted the total actual ER value. Furthermore, which factors had ultimately varied due to variables mentioned above (market demand, unit performance and worker’s availability) had not been made clear.
- The modified schematic Fal-G process chart under revised PDD, version 6 section A.3 has not demarcated the project boundary as per the registered PDD. The PP was requested to clarify the same. The reported value (202,122.47) of the Electricity consumption parameter (EC<sub>PJ,j,y</sub>) under section D.2 of the revised MR, version 6 was found to be inconsistent with the value (203,122.47) specified under ER spreadsheet. The PP was requested to clarify the same.
- **ER Calculation Spreadsheets:**
  - The consolidated summary of the ER value (baseline emissions, Project Emissions, Leakage) for the current monitoring period (01/08/2011 to 31/03/2013) had not been sufficiently presented in the ER calculation spreadsheet.
  - Multiple three ER spreadsheets; repartition of time periods are leading to confusion and non-transparency. The summed up values for respective monitoring parameters and ER summary as reported in the MR could not be directly correlated with special emphasis to Project Emission values.
  - B-II -ER Computation - 2012-13.xls: The final net ER value had been rounded up, which was not found conservative.
  - B-II - ER Computation - Jan-Mar 2013.xls: The final net ER value had been rounded up, which was not found conservative.
  - B-II - ER Computation - 2011-12.xls: The equation used (Column J) to calculate leakage emission calculation for Cement and Mineral Lime consumption was found to be inconsistent with the registered monitoring plan and also inconsistent with the approach followed for the time period 2012-2013. The PP was requested to clarify the same.
  - B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls: Both the spreadsheets under tab “ER Report for RY 11” and “ER Report for RY 12” mentioned the respective rows for excluded SPEs (AP/GTR/II/6 and AP/VZM/II/11) which was found to be

redundant for the ER spreadsheet in the revised project design context. The PP was requested to clarify the same.

- B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls: Both the spreadsheets under tab “ER Report for RY 11” and “ER Report for RY 12” row 6 and row 5 respectively had mentioned the default value 1.3 tCO<sub>2</sub>/MWh as “IPCC default value-emission on electricity” which was not found to be consistent with the registered monitoring plan. The PP was requested to clarify the same.
- B-II - ER Computation - 2011-12.xls: Under tab “ER Report for RY 11” row 5 has mentioned the factor “Electricity consumption /cu.m – 3.5 kWh” which was not found to be correlated with any of the ER calculation algorithms and was also not traced in the registered monitoring plan. The PP was requested to clarify the same.
- B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls: Both the spreadsheets under tab “TN-KCP-II-1” had used the Metering Factor 30 to derive the month wise electricity consumption values, whereas no such factor had been used for other SPE specific sheets. The PP was requested to clarify as there was no specific note/clarification mentioned in the respective spreadsheet itself.

In response, the PP had revised the MR with the updated and revised monitoring report version 3 dated 10/07/2013. The same was checked under section D.2 and was found that the archiving frequency was mentioned transparently as per the requirement of paragraph 234-237 of VVS<sup>4/</sup> and EB 75 Annex 7 and hence is accepted by the assessment team.

Furthermore, the PP clarified the following aspects:

- **Section E.1 (Description on calculation of baseline emissions):** The calculation approach for the parameter  $EF_{BL}$  was found to be corrected in the revised MR, version 3 and hence is accepted by the assessment team.
- **Section E.4 and E.5 (Summary and comparison of ER value):**
  - The month wise breakup was found to be addressed clearly in the revised MR, version 3 and hence is accepted.
  - The final ER value was checked and found to be consistent with the ER summary sheet.
  - The leakage value reported for the time period 2011-2012 (August 2011-March 2012) has now been corrected considering emissions from both lime and OPC route in the revised ER sheet, dated 31/10/2013 and hence is accepted.
  - The final ER value in Section E.5 has been corrected in the revised MR, version 3 and hence is accepted by the assessment team.
- **Section E.6:** The clarification provided by the PP regarding the higher emission reduction achieved during the current monitoring period was due to the collective results of all the variable factors (market demand, unit performance and worker’s availability) as mentioned by the PP was found acceptable by the assessment team and hence is accepted by the assessment team.
- The revised PDD, version 7 dated 08/02/2014 was checked and was found to include the project boundary correctly in line with the registered PDD and hence is accepted.

The reported value of the electricity consumption parameter ( $EC_{PJ,j,y}$ ) under section D.2 of the revised MR, version 7 was found to be made consistent with the value specified under ER spreadsheet and hence is accepted. **ER Calculation Spreadsheets (B-II - ER Computation - 2011-12.xls; B-II -ER Computation - 2012-13.xls and B-II - ER Computation - Jan-Mar 2013.xls):**

- The comprehensive spreadsheet ‘B-II-ER Computation-Summary for 2011-13’ prepared and submitted by the PP with the summed up values for respective monitoring parameters and hence is accepted.
- **B-II -ER Computation - 2012-13.xls:** The final net ER value has now been corrected and was rounded down for conservativeness in the revised ER sheet “B-II-ER Computation -2012-13” dated 31/10/2013 and hence is accepted.

- **B-II - ER Computation - Jan-Mar 2013.xls:** The final net ER value was rounded down for conservativeness in the revised ER sheet “*B-II-ER Computation -2012-13*” dated 31/10/2013 and hence is accepted.
- **B-II - ER Computation - 2011-12.xls:** The calculation approach for both 2011-12 and 2012-13 had been corrected and made consistent with the registered monitoring plan and hence is accepted.
- **B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls:** Both the spreadsheets under tab “ER Report for RY 11” and “ER Report for RY 12” has been corrected and has two SPEs (AP/GTR/II/6 and AP/VZM/II/11) removed in line with the revised PDD and hence is accepted by the assessment team.
- **B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls:** Both the spreadsheets under tab “ER Report for RY 11” and “ER Report for RY 12” row 6 and row 5 respectively had been found to mention the source of emission factor from electricity correctly in line with the revised PDD and hence is accepted.
- **B-II - ER Computation - 2011-12.xls:** “*Electricity consumption /cu.m – 3.5 kWh*” was found to be excluded under tab “ER Report for RY 11” row 5 which was found to be consistent with the registered monitoring plan and hence is accepted.
- **B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls:** The same was checked and found to be correctly justified in both the ER sheets for 2011-12 and 2012-13 and hence is accepted.

For further details with regards to CAR04, please refer section 9 of this report, ‘Findings Overview’.

Thus, **CAR04** was successfully closed out.

The details of the reported and the verified values for all parameters are listed in section 4 of this report, ‘Calculation of Emission Reductions’.

### **3.8 Quality of Evidence to Determine Emission Reductions**

Critical parameters used for the determination of the Emission Reductions are discussed in section 3.4 of this report. All the data recorded is in compliance with the monitoring report.

### **3.9 Management and operational System and Quality Assurance**

The responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the registered monitoring plan<sup>1/</sup>. The daily data recorded by the SPEs are collected and the monthly data is sent to the PE. The data goes through a thorough review by the PE and finally being archived electronically for the emission reduction calculations.

As a part of the review process, the PE monitoring personnel conducts periodical visits randomly to 9 SPEs per year to ensure due compliance is being met. In-house training is being imparted to the plant personnel for recording of data and computation of CERs. The following monitoring records are being monitored for due diligence:

- Production records.
- Raw materials procured.
- Diesel and/or power consumption data.
- Performance criteria by testing Compressive Strength.

### 3.10 Data from External Sources

The following parameters are used from external sources as per the registered monitoring plan:

#### **EF<sub>BL</sub> : Annual production specific emission factor**

This parameter has been determined *ex ante* based on the net calorific values of the fuel used. As per the registered<sup>/1/</sup> PDD (page 36), revised PDD<sup>/1.4/</sup> and the data is sourced from as per the registered PDD (page 36) and page 19 of Validation Report<sup>/32/</sup>. The value determined *ex ante* is 0.2683 tCO<sub>2</sub>/ m<sup>3</sup>. This is found in line with the registered PDD<sup>/1/</sup>, revised PDD<sup>/1.4/</sup> and hence accepted by the assessment team.

#### **I : Emission factor for electricity**

As per the registered PDD (page 36), this parameter has been determined *ex ante* based on the “Tool to calculate baseline, project and/or leakage emissions from electricity consumption (Version 01)”. The value adopted by the PP was checked and found to be conservative as emissions due to electricity were found to be on the high side. The value determined *ex ante* is 1.3 t CO<sub>2</sub>/ MWh. This is found in line with the registered PDD<sup>/1/</sup> and hence accepted by the assessment team.

#### **EF<sub>CO2</sub> : Emission factor for diesel**

As per the registered PDD (page 36), this parameter has been determined *ex ante* based on the 2006 IPCC guidelines<sup>/14/</sup>. The value determined *ex ante* is 74.8 tCO<sub>2</sub>/ TJ at NCV of 43 TJ/Gg. This is found in line with the registered PDD<sup>/1/</sup> and hence accepted by the assessment team.

#### **EF<sub>OPC</sub> : Emission factor for OPC**

As per the registered PDD (page 37), this parameter has been determined *ex ante* based on the technical coverage in Press Information Bureau, Government of India<sup>/16/</sup>. The value determined *ex ante* is 0.82 tCO<sub>2</sub>/ tonne of cement produced. This is found in line with the registered PDD<sup>/1/</sup> and hence accepted by the assessment team.

#### **EF<sub>ML</sub> : Emission factor for mineral lime**

As per the registered PDD (page 37), this parameter has been determined *ex ante* based on the 2006 IPCC guidelines<sup>/14/</sup>. The value determined *ex ante* is 0.42 tCO<sub>2</sub>/ tonne of CaO produced. This is found in line with the registered PDD<sup>/1/</sup> and hence accepted by the assessment team.

#### 4. Calculation of Emission Reductions

Parameter	Reported Value (01/08/2011 - 31/03/2013) (Monitoring report, version 1 dated 06/05/2013)	Verified Value (01/08/2011 - 31/03/2013) (Monitoring Report version 7 dated 08/02/2014)
Production- $P_{PJ,y}$ : SPE maintains the actual quantities of production in number on daily basis, based on each size of brick/block, which is duly converted to volume ( $m^3$ ) to facilitate computations ( $m^3$ bricks/blocks)	94,415.85	94,415.85
Electricity- $EC_{PJ,y}$ : The electricity consumption is monitored continuously by the Electricity Meter and recorded by the Service Provider (State Electricity Department) monthly or bimonthly based on which the Electricity bills are provided (kWh)	202,183	203,122.47*
Diesel- $FC_y$ : Consumption of diesel would be provided by SPEs to PE on monthly basis(Litres)	43,641	43,641
Cement- $Q_{OPC}$ : Purchase details are provided by the SPEs through monthly statement (Tons)	5,009.86	5,009.86
Mineral Lime- $Q_{ML}$ : Purchase details are provided by the SPEs through monthly statement (Tons)	9,168.09	9,168.09

\* The difference in the final verified value of the electricity consumption against the initial reported one is due to the adjustment of monitored electricity consumption data in occasion of delayed calibration on electricity meters deployed.

The baseline emissions, leakage calculation and project emissions for emission reduction calculation was checked and found to be correctly done by the PP as per the methodological choice mentioned in the registered PDD<sup>1/</sup>.

##### Baseline Emissions Calculation:

1. The annual baseline emissions from fossil fuels displaced by the project activity in t CO<sub>2</sub>e in year (of the crediting period),  $BE_y = EF_{BL} * P_{PJ,y}$

2.  $EF_{BL} = (FC_{BL,i,j} \times NCV_j \times EF_{CO_2,j}) / P_{Hy}$

$EF_{BL} = (FC_{BL,i,j} \times \text{Annual production specific emission factor for baseline})$

$EF_{BL} = 94,415.85 \times 0.2683 \text{ tCO}_2$

$EF_{BL} = 25,331.77 \text{ tCO}_2$

The correction factor applied by the PP due to the biomass consumption in line with the registered PDD and revised PDD to arrive at the net baseline emissions:  $EF_{BL} = 25,331.77 \times (100-5) \% \text{ tCO}_2$

$= 24,065.18 \text{ tCO}_2$

$$= 24,065 \text{ tCO}_2 \text{ (Rounded Down)}$$

The total net emissions from the baseline scenario are 24,065 tonnes of CO<sub>2</sub> equivalent per annum from 9 plants included in the project.

#### Project Emissions Calculation:

The project emissions from the electricity consumption in the project activity are calculated as below:

$$1. PE_{ECy} = EC_{PJ,j,y} \times EF_{EL,j,y}$$

$$PE_{ECy} = 203,122.47 \text{ kWh} \times 1.3 \text{ tCO}_2/\text{MWh}$$

$$PE_{ECy} = 203,122.47 \text{ MWh} \times 1.3 \text{ tCO}_2/\text{MWh}$$

$$= 264.06 \text{ tCO}_2$$

The project emissions from the diesel consumption in the project activity are calculated as below:

$$2. PE_{FCy} = FC_{i,j,y} \times COEF_{j,y},$$

where  $COEF_{j,y} = NCV_{i,y} \times EF_{IO2,i,y}$

$$PE_{FCy} = (43,641.00 \text{ kL} \times 0.82 \text{ T/kL} / 1000) \times (43 \text{ TJ/Gg} \times \text{ton/TJ} / 1000)$$

$$PE_{FCy} = 115.101 \text{ tCO}_2$$

The total project emissions PE<sub>y</sub> due to the project activities within the project boundary is thus represented by the formulae

$$3. PE_y = (PE_{ECy} + PE_{FCy}) = (264.06 + 115.101) \text{ tCO}_2 = 379.16 \text{ tCO}_2$$

#### Leakage Emissions Calculation:

The leakage due to the mineral lime consumed in the project activity are calculated as be:

$$1. E_{x, ML} = Q_{ML} \times EF_{ML}$$

Where

$Q_{ML}$  = Quantity of mineral lime purchased (tons)

$EF_{ML}$  = CO<sub>2</sub> emission factor for mineral lime (tCO<sub>2</sub>/ ton mineral lime)

$$E_{x, ML} = 9,168.09 \text{ tons} \times 0.42 \text{ tCO}_2/\text{tons} = 3,850.597 \text{ t}$$

2. The leakage due to the cement (OPC) consumed in the project activity are calculated as below:

$$E_{x, OPC} = Q_{OPC} \times EF_{OPC}$$

Where

$Q_{OPC}$  = Quantity of OPC purchased (tons)

$EF_{OPC}$  = CO<sub>2</sub> emission factor for OPC (tCO<sub>2</sub>/ ton OPC)

$$E_{x, OPC} = 5,009.86 \text{ tons} \times 0.82 \text{ tCO}_2/\text{tons} = 4,108.085 \text{ tCO}_2$$

The total leakage E<sub>L</sub> due to the project activities within the project boundary is thus represented by the formulae:

$$E_L = E_{x, ML} + E_{x, OPC} = 3,850.597 + 4,108.085 \text{ tCO}_2 = 7,958.68 \text{ tCO}_2$$



Thus emission reduction achieved for the current monitoring period is given by the below formula:

$$ER = -BE_y - PE_y - E_L = (24,065.18 - 264.059 - 115.101 - 7958.68) \text{ tCO}_2 = 15,727.34 \text{ tCO}_2$$

$$= 15,727 \text{ tCO}_2 \text{ (Rounded Down)}$$

**Emission Reduction:**

Period	Reported Value (as per the web hosted MR) tCO <sub>2</sub> e	Verified Value tCO <sub>2</sub> e	If Different, Summary of Issues That Caused the Difference
01/08/2011 to 31/03/2013 (both the days included)	17,477.50	15,727	The difference of the reported and verified emission reduction values is due to the error in leakage emissions calculations as discussed in details under CAR04 in section 3.7 of this report.
<b>CERs (Up to 31 December 2012 (1st commitment period); )</b>	8,977.06	13,881	
<b>CERs (From 1 January 2013 onwards.</b>	8,500.54	1,846	



## **5. Recommendations for Changes in the Monitoring Plan**

No recommendation has been given to revise the monitoring plan as per registered PDD<sup>/1/</sup>.

## 6. Overview of Results

### Assessment Against the Provisions of Decision 17/CP.7:

Is the project documentation in accordance with the requirements of the registered PDD and relevant provision of decision 17/CP.7, EB decisions and guidance and the COP/MOP?

*Yes. The results of the compliance assessment are recorded in the verification checklist which is used as an internal report only.*

Have on-site inspections been performed that may comprise, inter alia, a review of performance records, interviews with project participants and local stakeholders, collection of measurements, observations of established practices and testing of the accuracy of monitoring equipment?

*The assessment team had visited the sites and undertook interviews, collected data, audited the implementation of procedures, checked calibration certificates and checked data, inter alia.*

*The results of the site visits are recorded in the verification checklist which is used as an internal report only.*

*The evidences have been checked and collected. The final monitoring report is attached with this verification report.*

Has data from additional sources been used? If yes, please detail the source and significance.

*Annual production specific emission factor, Emission factor for electricity, Emission factor for diesel, Emission factor for OPC, Emission factor for mineral lime are the data that has been determined fixed ex ante as discussed under Section 3.10 of this report.*

Please review the monitoring results and verify that the monitoring methodologies for the estimation of reductions in anthropogenic emissions by sources have been applied correctly and their documentation is complete and transparent.

*Yes. The monitoring methodology has been correctly applied and the monitoring report and supporting references are complete and transparent.*

Have any recommendations for changes to the monitoring methodology for any future crediting period been issued to the project participant?

*No recommendation was provided to the Client to change the Monitoring methodology or Monitoring Plan*

Determine the reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the CDM project activity, based on the data and information using calculation procedures consistent with those contained in the registered project design document and the monitoring plan.

*The data used in anthropogenic emission reduction calculation is consistent with those contained in the registered PDD, revised PDD and monitoring plan. The emission reduction was 13,336 tCO<sub>2</sub> for the period 01/08/2011 - 31/03/2013 as per the estimation made in the registered PDD and revised PDD. The actual emission reduction has been verified as 15,727 tCO<sub>2</sub> for the same period.*

Identify and inform the project participants of any concerns related to the conformity of the actual project activity and its operation with the registered project design document. Project participants shall address the concerns and supply relevant additional information

*The total FaL-G brick SPE units involved under the registered PDD has been reduced to nine at the post registration phase. As per the provision of Appendix 1 of CDM Project Standard, version 5.0 a revised project design document is being submitted along with this RFI. This has been described in detail in section 3.2.4 of this report.*

Post monitoring report on UNFCCC website

*Yes, the monitoring report is available at ref. UNPA: 4585 on UNFCCC website:*

<http://cdm.unfccc.int/Projects/DB/DNV-CUK1300267994.99/iProcess/SGS-UKL1369123213.37/view>

## 7. Verification and Certification Statement

SGS United Kingdom Ltd has been contracted by M/s Eco Carbon Pvt.Ltd to perform the verification of the emission reductions reported for the CDM project **India-FaL-G Brick and Blocks Project No.2** and UNFCCC PA:4585 in the period 01/08/2011 to 31/03/2013 (Both the days included).

The verification is based on the validated and registered project design document and the monitoring report for this project. Verification is performed in accordance with section I of Decision 3/CMP.1, and relevant decisions of the CDM EB and CoP/MoP. The scope of this engagement covers the verification and certification of greenhouse gas emission reductions generated by the above project during the above mentioned period, as reported in Monitoring Report, version 7 dated 08/02/2014.

The management of M/s Eco Carbon Pvt.Ltd is responsible for the preparation, calculation and determination of GHG emission reductions from the project. The development and maintenance of records and reporting procedures are in accordance with the monitoring report.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the period 01/08/2011-31/03/2013 (Both the days included) based on the reported emission reductions in the Monitoring Report, version 7 dated 08/02/2014 for the same period.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, SGS planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

SGS confirms that the project is implemented as described in the validated and registered project design documents. Based on the information we have seen and evaluated, we confirm the following:

Project Title:	India-FaL-G Brick and Blocks Project No.2
UNFCCC Reference Number:	UNFCCC PA: 4585
Registered PDD and Revised PDD used for Verification:	PDD, version 4 dated 16/06/2011 Revised PDD, version 7 dated 08/02/2014 (being submitted along with this RFI)
Methodology Used for Verification:	AMS-III.Z, version 3, valid from 11/06/2010 to 24/05/2012
Applicable Period:	01/08/2011-31/03/2013 (Both the days included)
Total GHG Emission Reductions Verified:	<b>15,727 tCO<sub>2</sub>e</b>

**Signed on behalf of the Verification Body by Authorized Signatory**

Signature:



Name: Siddharth Yadav

Date: 03/03/2014

## 8. Document References

1. Registered PDD, version 4 dated 16/06/2011, UNFCCC ref no: 4585Web link:  
<http://cdm.unfccc.int/Projects/DB/DNV-CUK1300267994.99/view>
  - 1.1. Revised PDD version 05 dated 22/06/2013
  - 1.2. Revised PDD version 05 dated 02/07/2013 (PP has not revised the version of the PDD)
  - 1.3. Revised PDD, version 6 dated 28/10/2013
  - 1.4. Revised PDD, version 7 dated 08/02/2014 (Final)

2. Monitoring Report
  - i. Monitoring Report, version 1 dated 06/05/2013 (Webhosted version)
  - ii. Monitoring Report, version 1 dated 06/05/2013 (The PP did not change the version or date of the MR based on findings, this is treated as version 2 by the assessment team)
  - iii. Monitoring Report, version 3 dated 10/07/2013
  - iv. Monitoring Report, version 4 dated 31/10/2013
  - v. Monitoring Report, version 5 dated 17/01/2014
  - vi. Monitoring Report, version 6 dated 25/01/2014
  - v. Monitoring Report, version 7 dated 08/02/2014 (Final version)

Monitoring Report, version 1 dated 06/05/2013	Webhosted version
Monitoring Report, version 7 dated 08/02/2014	<p>:</p> <p>In response to <b>CAR#01</b>,</p> <ol style="list-style-type: none"> <li>1. The participating parties have been included correctly in page 1.</li> <li>2. All the dates have been revised in DD/MM/YYYY format throughout the MR.</li> <li>3. Registration date has been corrected in page 1.</li> <li>4. General description of the project activity has been included in further details in section A.1.</li> <li>5. The reference of the applied Methodological Tools has been included in section A.4.</li> <li>6. The diagrams of the monitoring system and the information flow has been included in section C.</li> <li>7. The source of document was found to be corrected in page 9 and page 15.</li> </ol> <p>In response to <b>CAR#02</b>:</p> <ol style="list-style-type: none"> <li>1. The accuracy details of the monitoring equipments along with exact serial numbers of meters used in the project activity has</li> </ol>

	<p>been included in section D.2.</p> <p>2. The internal audits being conducted and the frequency of internal audit has been included in section C.</p> <p>3. The calibration details of the monitoring equipments like energy meter used to measure the parameter <math>EC_{PJ,i,y}</math> has been included in D.2.</p> <p>4. QA/QC approach as per the registered monitoring plan has been included in D.2.</p> <p>In response to <b>CAR#03</b>,</p> <p>1. The effect on the permanent changes in the project activity has been included in B.2.4 .</p> <p>In response to <b>CAR#04</b>,</p> <p>1. The Actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards in section E.7 of MR correctly.</p> <p>2. The archiving frequency has been included clearly in the section D.2.</p> <p>3. The final figure in section E.5 has been included.</p> <p>4. the figure of the electricity consumption has been included in section D.2.</p>
3.	<p>Emission Reduction spreadsheets</p> <p>i. Emission reduction spreadsheet, version 1 06/05/2013 (Initial version)</p> <p>ii. Emission reduction spreadsheet, version 2 dated 22/06/2013</p> <p>iii. Emission reduction spreadsheets, version 3 dated 31/10/2013</p> <p>iv. Emission reduction spreadsheets, version 4 dated 25/01/2014 (Final version)–a) B-II – ER Computation - 2012-13.xls–b) B-II - ER Computation - 2011-12.xls–c) B-II -ER Computation - Summary for 2011-2013.xls–d) B-II - ER Computation - Jan-Mar 2013.xls</p>
4.	Clean Development Mechanism Validation and Verification Standard version 5.0, dated 04/10/2013
5.	MONITORING REPORT FORM (F-CDM-MR) version 03.2 dated 05/11/2013
6.	Clean Development Mechanism Project Standard version 05.0 dated 04/10/2013
7.	Registered Methodology: AMS- III.Z, version 3 “Fuel Switch, process improvement and energy efficiency in brick manufacture” (valid from 11/06/2010 till 24/05/2012)
8.	Daily stock registers of brick productions for 9 SPEs for the current monitoring period (01/08/2011-31/03/2013)
9.	Monthly electricity bills to record the electricity consumption of 9 SPEs for the current monitoring period (01/08/2011-31/03/2013)
10.	Daily diesel purchase receipts to record the diesel consumption of 9 SPEs for the current monitoring period (01/08/2011-31/03/2013) Diesel stock register for the current monitoring period (01/08/2011-31/03/2013)
11.	Monthly purchase receipts of OPC cement consumed of 9 SPEs for the current monitoring period (01/08/2011-31/03/2013)

12.	Monthly purchase receipts of mineral lime consumed of 9 SPEs for the current monitoring period (01/08/2011-31/03/2013)																		
13.	Test certificates of Compressive Strength of the bricks for the current monitoring period (01/08/2011-31/03/2013)																		
14.	2006 IPCC Guidelines for National Greenhouse Gas Inventories Web-link: <a href="http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf">http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf</a> . The site last accessed on 18/08/2013																		
15.	Calibration certificates of the energy meters installed in 9 SPEs for the current monitoring period (01/08/2011-31/03/2013)																		
16.	Press Information Bureau, Government of India to determine the emission factor of OPC cement, weblink <a href="http://www.pib.nic.in/newsite/erelease.aspx?relid=55724">http://www.pib.nic.in/newsite/erelease.aspx?relid=55724</a> The site last accessed on 18/08/2013																		
17.	CEA, Ministry of Power, Government of India, clause 18 of Gazette notification No. 502/70/CEA/DP&D dated. 17/3/2006, paragraph 8 was checked for the calibration schedule of the energy meter ( <a href="http://164.100.47.5/newsite/bulletin2/Bull_No.aspx?number=43755">http://164.100.47.5/newsite/bulletin2/Bull_No.aspx?number=43755</a> ). The site last accessed on 18/08/2013																		
18.	The document published by Government of India was checked for the availability of the fly ash ( <a href="http://flyashbricksinfo.com/construction/fly-ash-sheet-andhra-pradesh.html">http://flyashbricksinfo.com/construction/fly-ash-sheet-andhra-pradesh.html</a> ). The site last accessed on 18/08/2013.																		
19.	Application for permanent registration certificate of the SPE of Sri Varalakshmi Fly Ash Bricks dated 01/06/2004.																		
20.	Permanent registration certificate of the SPE Sri Varalakshmi Fly Ash Bricks dated 03/02/2005.																		
21.	Techno Economic Feasibility Report on Flyash Bricks, published by BMTPC, Ministry of Housing & Urban Poverty Alleviation, Government of India																		
22.	Monitoring & Evaluation of Forest Area Diversions including the Status of Compliance Of Approval Conditionalities of Forest Diversion Cases & their Impact on the Forest & –ildlife - Thermal Power Plants; Section 4.2.1 & 4.2.2																		
23.	Fly Ash Bricks Masonry: An Experimental Study published at National Conference on Recent Trends in Engineering & Technology; 13-14 May 2011																		
24.	Brick makers exemption from green guidelines; Business Standard; September 24, 2004																		
25.	Utilization of Fly-ash by Brick Manufacturers - Environmental Costs vs. Benefits; project sponsored by MoEF, Government of India.																		
26.	Availability and management of fly ash in India; The Indian Concrete Journal; August 2005																		
27.	TERI report on Policy, institutional and legal barriers to economic utilisation of fly ash T E R I Report No. 2006RD25																		
28.	Self Declaration by the PP with regard to the exclusion of 2 SPEs dated 22/06/2013.																		
29.	SSI registrations for 9 SPEs to check for the start date of the commercial operation :																		
	<table border="1"> <tr> <td>8.1.1.1.1 NRK Infra System Pvt. Ltd.</td><td>10/03/2005</td></tr> <tr> <td>Sagar Quality Bricks</td><td>09/12/2004</td></tr> <tr> <td>Sri Varalakshmi Fly Ash Bricks</td><td>04/12/2004</td></tr> <tr> <td>Golden Bricks Industries</td><td>19/04/2006</td></tr> <tr> <td>Sai Niveditha Brick Industries</td><td>13/04/2006</td></tr> <tr> <td>Koneru Fly ash Products</td><td>17/02/2005</td></tr> <tr> <td>Anaparthi Reddy Fal-G Brick industry</td><td>01/01/2005</td></tr> <tr> <td>Sai Lakshmi FaL-G Bricks</td><td>02/04/2006</td></tr> <tr> <td>Sri Saikripa Innovative Building Materials Industries</td><td>30/11/2004</td></tr> </table>	8.1.1.1.1 NRK Infra System Pvt. Ltd.	10/03/2005	Sagar Quality Bricks	09/12/2004	Sri Varalakshmi Fly Ash Bricks	04/12/2004	Golden Bricks Industries	19/04/2006	Sai Niveditha Brick Industries	13/04/2006	Koneru Fly ash Products	17/02/2005	Anaparthi Reddy Fal-G Brick industry	01/01/2005	Sai Lakshmi FaL-G Bricks	02/04/2006	Sri Saikripa Innovative Building Materials Industries	30/11/2004
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Sri Saikripa Innovative Building Materials Industries	30/11/2004																		



30. MR Form Completion Guideline, version 4 EB75, annex 7.
31. Biomass procurement data of ECPL and respective receipts of biomass exported to ECPL for the current monitoring period.
32. Validation Report version 02 dated 17/06/2011
33. Letter of non-compliance issued by ECPL to SPE AP/VZM/II/11 (Sri Devi Building Material Industries at Andhra Pradesh) dated 23/06/2011
34. Letter of withdrawal from the SPE ID No. AP/GTR/II/6 (Bhaskar Brick Industries at Andhra Pradesh) to ECPL dated 27/03/2011

## 9. Findings Overview

	CARs	CLs	FARs
Total Number raised	04	00	00

Date:	06/06/2013	Raised by:	Assessment Team		
Type:	CAR	Number:	01	Reference:	AU4 section 2
<b>Lead Assessor Comment:</b>		<b>Date:</b> 06/06/2013			
<p>Conformance of the information on the monitoring report was done with the registered PDD and information were to found to be matching however, under section A.3 of the MR in the list of the project participants, the column that states if the party involved wishes to be considered as a PP, there are a number of countries that have an incorrect answer as per the information on the UN project page.</p> <ul style="list-style-type: none"> <li>Italy should say 'yes' as they are involved directly</li> <li>Netherlands should say 'yes' as they are involved directly</li> <li>Luxembourg should say 'yes' as they are involved directly</li> <li>Denmark should say 'yes' as they are involved directly</li> <li>Belgium should say 'yes' as they are involved directly</li> <li>Spain should say 'yes' as they are involved directly.</li> </ul> <p>Please clarify in accordance with VVS para 225.</p> <p>There are incorrect PP company names mentioned under section A.3 of the MR:</p> <ul style="list-style-type: none"> <li>The Spanish PP shown in the MR is 'Ministry of Environment and Rural and Marine Affairs; Ministry of Economy and Finance' but the PP name should be '<u>Kingdom of Spain – Ministry of the Agriculture, Food and Environment &amp; Ministry of Economy and Competitiveness</u>'.</li> <li>The Belgium PP shown in the MR is 'Walloon Region Ministry of the EnvironmentBruxelles Environment – IBGE' but the PP name on the UN page is 2 different names '<u>Walloon Region: Walloon Air and Climate Agency</u>' and '<u>Bruxelles Environment – IBGE</u>'.</li> <li>The Japanese PP mentioned in the MR 'Daiwa Securities Capital Market Co.Ltd' is not listed as a PP on the UN project page.</li> <li>The Norwegian PP in the MR 'Statkraft Carbon Invest AS' is not listed as a PP on the UN project page.</li> <li>Section A.3 also mentions Canada as a PP, but on the UN project page, Canada is not shown as a PP.</li> </ul> <p>Please clarify in accordance with VVS para 225.</p> <p>On page 1 of the MR where it asks for the PPs, PP is requested to clarify the why the name of all the PPs is not included. All dates in the Monitoring report has to be in DD/MM/YYYY format as per the requirement of EB 54 Annex 34.</p>					
<b>Project Participant Response:</b>		<b>Date:</b> 22/06/2013			
<p><i>As the detailed list of Project Participants is already given under Section A.3 of Monitoring Report, it is assumed that it would be sufficient if Section A.3 is referred. This is the reason why the project participants' list is not given in the page 1 of MR.</i></p> <p><i>However now the list is inserted in P1 and also all corrections are made in MR in accordance to the suggestions given above.</i></p>					
<b>Documentation Provided as Evidence by Project Participant:</b>					
MR version 01 dated 06/05/2013					

<b>Information Verified by Lead Assessor:</b>	
1. Updated and revised monitoring report, version 1 dated 06/05/2013 (Note: The PP has not revised the version and date of the MR).	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
<p><b>Page1:</b> The registration date has now been corrected in the revised MR, version 4 which was checked and found to be consistent with the UN webpage and hence is accepted by the assessment team.</p> <p><b>Section A.1:</b> The general description of the project activity description was found to include the numbers and details of the bundled FaL-G units under the project activity and relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.) under table-1 at the end of the MR, version 4, page 26. The same was found to be in line with MR Form Completion Guideline, Version 04 CDM-EB75-A07 and hence is accepted by the assessment team.</p> <p><b>Section A.2:</b> The host party of the project has been correctly mentioned under section A.2 of the revised MR, version 4. The number of SPEs mentioned under table 2 was found to be consistent with the revised project design corrected in the revised PDD and hence is accepted.</p> <p><b>Section A.4:</b> All the applied methodological tools have now been included with the detailed referencing which was found to be consistent with the MR Form Completion Guideline, Version 04 CDM-EB75-A07 and hence is accepted.</p> <p><b>Section B.1:</b> The start date of the project activity as 01/06/2004 was found to be included correctly in the revised MR, version 4. As per the MR Form Completion Guideline, Version 04 CDM-EB75-A07 and hence is accepted.</p> <p><b>Section B.2.4:</b> The version and the completion date of the revised PDD have now been mentioned correctly and transparently in the revised MR, version 4 and hence is accepted by the assessment team.</p> <p><b>Section C:</b> The detailed monitoring points showing details of monitoring system and organisational structure showing information flow has been included correctly and transparently in the revised MR, version 4 as Figure-II and Figure –III respectively at the end of the MR and hence is accepted by the assessment team.</p> <p>However, the PP is requested to clarify on the following inconsistencies:</p> <ol style="list-style-type: none"> <li>1. In page 1 of the MR, the table containing the PP's are not appearing in full on this page and continue on to page 2. Please clarify.</li> <li>2. The PPs listed in the table on page 2 have a number of inconsistencies with the project UNFCCC webpage <ul style="list-style-type: none"> <li>○ Italy – the PP name does not match the UN webpage</li> <li>○ Luxembourg – the PP name does not match the UN webpage</li> <li>○ Denmark – the PP for the Danish Ministry the name does not match the UN webpage</li> <li>○ Belgium – the PPs are connected with an 'and' making them appear to be one PP whereas on the UN webpage they are separated.</li> <li>○ Japan – the PP for Fujifilm Corporation is spelt incorrectly.</li> </ul> </li> </ol> <p>In addition to above inconsistencies, Section A.3 of the MR contains below additional inconsistencies;</p> <ul style="list-style-type: none"> <li>○ Belgium – does not contain any bullet points unlike all of the other PPs listed.</li> <li>○ Japan – has the following error The Okinawa Electric Power Corporation, Incorporated (two commas by mistake).</li> <li>○ Norway – has an extra bullet point with no PP name next to it.</li> </ul> <ol style="list-style-type: none"> <li>3. The PP is requested to clarify on the inconsistency on page 7 under section B.2.2 of the MR as there is a correction made in the PDD with regard to the crediting period date.</li> <li>4. Page 8 (in three separate places) and page 24 of the MR refers to VVS but doesn't mention the version of VVS. Please clarify.</li> <li>5. Page 9 of the MR mentions the link at the top of the page; when clicking this link, it states the domain is for sale and there is no information. This issue also occurs on page 15, footnote 1. Please clarify.</li> </ol> <p><b>CAR01</b> remains open.</p>	
<b>Acceptance and Close out by Lead Assessor: Open</b>	<b>Date: 12/01/2014</b>

<b>Project Participant Response:</b>	<b>Date:</b> 17/01/2014
<p>1. The table containing the PP name has been corrected in the revised MR.</p> <p>2. The list of all the PP names has been corrected as per the UN webpage.</p> <p>3. The page 7 of the section B.2.2 of the MR has been corrected with regard to the change in start date of the crediting period.</p> <p>4. The VVS, ver5 has been included in appropriate sections in the MR correctly.</p> <p>5. The source of data has been corrected in the revised MR.</p>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Revised MR, version 5.	
<b>Information Verified by Lead Assessor:</b>	
Revised Monitoring Report, version 5 dated 17/01/2014	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
<p>1. The revised monitoring report was checked and was found to include the PP name in full on page 1 and hence is accepted by the assessment team.</p> <p>2. The PP had corrected the PP names involved in the project which was checked and was found to be consistent with the UN webpage and hence is accepted.</p> <p>3. The PP had corrected the page 7 in the revised MR under section B.2.2 with regard to the crediting period date which was checked and was found to be in line with revised PDD and hence is accepted by the assessment team.</p> <p>4. The revised MR, version 5 was checked and was found to include the version of VVS as VVS, ver5.0 correctly and hence is accepted.</p> <p>5. The source of document was found to be corrected by the PP in the revised MR, version 5 in page 9 and page 15 of the revised MR and hence is accepted by the assessment team.</p> <p>Please clarify CDCF represents the Fund but why CDCF has been mentioned as one of the PP?</p>	
<b>Acceptance and Close out by Lead Assessor: Open</b>	<b>Date:</b> 24/01/2014
<b>Project Participant Response:</b>	<b>Date:</b> 25/01/2014
CDCF has been removed from the list of PP and the detailed involvement of the CDCF as bilateral and multilateral fund has been included as footnote 1.	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Revised MR, version 6	
<b>Information Verified by Lead Assessor:</b>	
MR version 06 dated 25/01/2014	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
MR version 06 dated 25/01/2014 was checked and found to be consistent in mentioning the CDCF funding as bilateral and multilateral fund which was found to be correct and thus accepted.	
<b>Acceptance and Close out by Lead Assessor: Closed</b>	<b>Date:</b> 27/01/2014

Date:	06/06/2013	Raised by:	Assessment Team		
Type:	CAR	Number:	02	Reference:	AU4 section 2 (8)
Lead Assessor Comment:			Date: 06/06/2013		
<p>The accuracy details of the monitoring equipments along with exact serial numbers of meters used in the project activity have not been mentioned in the MR transparently along with their calibration details as per the requirement of para 234-237 of VVS.</p> <p>The calibration details of the monitoring equipments like energy meter used to measure the parameter <math>EC_{PJ,i,y}</math> is not explained transparently in the Monitoring report as per the requirement of VVS para 238, in this regard, PP has to clarify the due date of calibration, any earlier calibration before March 2011, delay in calibration for the period if any as per the provisions of EB guidelines of delay in calibration.</p> <p>PP has to clarify with regard to the test certificates of bricks and provide details on who has conducted the test, the date of conducting the test. Any delay in the testing has to be reported in the MR.</p> <p>PP has to clarify with regard to the internal audits being conducted and the frequency of internal audit and who conducts it in the MR transparently.</p> <p>PP is requested to provide flow diagram with metering location as per the requirement of EB 54 Annex 34.</p>					
Project Participant Response:			Date: 22/06/2013		
<p><i>As already highlighted in MR the responsibility for calibration of power meters lies with the State Electricity Board (SEB). The State Electricity Board is required to follow the national standard set by the Central Electricity Authority, Ministry of Power, Government of India, Clause 18 of Gazette Notification No. 502/70/CEA/DP&amp;D dt. 17.3.2006, to undertake calibration of power meters once in 5 years. The consumer does not have any control over the process. Currently, State Electricity Boards do not have established calibration schedules and the government regulation is also not enforced stringently, especially for domestic consumers and small scale industrial consumers, like the FaL-G plants. As a practice by service provider (SP), the SEBs, calibration of meters is not applicable to the units with connected load below 20 HP.</i></p> <p><i>In this background getting calibration done for power meters is not a practice for small scale units, thus no calibration reports are available prior to August 2011. Thereby, issue of delay in calibration does not arise. All the SPEs have been insisted for calibration of power meters only in the concern of compliance with the requirement of VVS. There upon SPEs got the calibration done by SP at the payment of special fee.</i></p> <p><i>Table 2 – Status of calibration of power meters in MR is duly revised with meter numbers. Though due date is not applicable, as per ministry's G.O applicable for category above 20 HP, 5 years is taken as basis and duly mentioned. Calibration certificates are attached as soft copy (Calibration Certificates).</i></p> <p><i>Table 3 is inserted in MR providing the details on who has conducted the testing of the bricks/blocks, the date of conducting the testing. Strength test Certificates are attached as soft copy (Strength Test Certificates).</i></p> <p><i>Internal audit of units is conducted randomly at any given time in a year. The monitoring personnel of PE (Carbon Inspectors) make random visits to SPEs, during which they verify the production records and stock registers to check the diligence of data received from SPEs on monthly basis. The purchase bills are verified for cement, lime and diesel. For electricity, the meter reading and the consumption as per department bill is taken as record.</i></p>					
Documentation Provided as Evidence by Project Participant:					
<p>List of documents: 1) B-II-Calibration Certificates of meters.</p> <p>2) B-II-Strength Test Certificates of product 2011-12</p> <p>3) B-II Strength Test Certificates of product 2012-13</p>					
Information Verified by Lead Assessor:					
<p>1. Updated and revised monitoring report, version 1 dated 06/05/2013 (Note: The PP has not revised the version and date of the MR). (Note: The PP did not state MR in the above box, but they had provided a revised version)</p> <p>2. Calibration certificates of the energy meters of product for 2012-13</p> <p>3. Strength test certificates of product for 2012-13</p>					
Reasoning for not Acceptance or Acceptance and Close Out:					

<p>The PP is requested to clarify that why the accuracy details of the monitoring equipments along with exact serial numbers of meters used in the project activity have not been mentioned in the MR under section D.2 transparently along with their calibration details as per the requirement of para 234-237 of VVS and EB75, Annex7.</p> <p>Although the PP has mentioned transparently regarding the unavailability of the calibration certificates prior to August 2011, the PP is required to include the calibration details power meters in MR under section D.2 as per the requirement of para 234-237 of VVS and EB75, Annex7. The strength test certificates for product 2012-13 was checked and found to include the details correctly and transparently in the revised MR, version 1 dated 06/05/2013 and found consistent and hence is accepted by the assessment team.</p> <p>Thus, CAR 02 remains open and cannot be closed out.</p>	
<b>Acceptance and Close out by Lead Assessor: Open</b>	<b>Date: 08/07/2013</b>
<b>Project Participant Response:</b>	<b>Date: 10/07/2013</b>
<p><i>MR contains all the details of the monitoring equipments along with exact serial numbers of meters used in the project activity vide Table 2. Since vast information of Table 2 cannot be inserted in D.2 reference of Table 2 is given.</i></p> <p><i>As per the direction given by VVS Version 5 para 238.a, during the period of unavailability of calibration, maximum permission error of 1% was added to the actual consumption for ER calculations. The justification has been discussed in MR under Section C.</i></p>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
Updated and revised monitoring report, version 3 dated 10/07/2013	
<b>Information Verified by Lead Assessor:</b>	
Updated and revised monitoring report, version 3 dated 10/07/2013	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
<p>The accuracy details of the monitoring equipments along with exact serial numbers of meters used in the project activity have not been mentioned in the MR under section D.2 and also in the annexure Table 2 transparently along with their calibration details as per the requirement of para 234-237 of VVS and EB75, Annex7 and hence is accepted by the assessment team.</p> <p>The PP is required to include the calibration details power meters in MR under section D.2 as per the requirement of para 234-237 of VVS and EB75, Annex7 and is thus accepted by the assessment team.</p> <p><b>Section D.2 (Data and parameters monitored):</b></p> <p><b>Parameter P<sub>PJ,y</sub>:</b> Please confirm whether this parameter is directly Monitored based on daily brick production number or Calculated based on other primary data. The conversion factor used to convert the brick production in numbers to cubic meter has not been reported. Please also confirm whether the QA/QC approach as per the registered monitoring plan has been conducted in actual during the current monitoring period?</p> <p><b>Parameter P<sub>PJ,y</sub>: Monitoring Equipment details (Table 2) –</b></p> <p>Energy meters replaced and new meter deployed for AP/PSM/II/3 and AP/VSP/II/10 sites, the respective timeline (date) and reason for such replacement and installation has not been reported.</p> <p>The Accuracy Class specified for SPE AP/EG/II/8 and AP/EG/II/9 is not found correlated, please clarify.</p> <p>The Accuracy Class for the energy meters AP/VSP/II/10 has not been reported.</p> <p>At the end of the table accuracy class and calibration date and next due date for a “Sub meter” has been included with no energy meter serial no. and moreover its not found clear that under which SPE site this Sub meter is involved and whether that meter is directly involved for power metering?</p> <p><b>Parameter FC<sub>y</sub>:</b> Please clarify what is the actual monitoring/measurement and recording frequency for on-site diesel consumption and how that is in line with the registered monitoring plan? The QA/QC procedure description not found consistent with registered monitoring plan, please clarify.</p> <p>Parameter Performance of project brick/block in terms of Compressive Strength once in six months: Please clarify why the compressive strength results for the current monitoring period has not reported in the MR?</p> <p><b>Section D.3:</b> The statement mentioned is not found to be correlated with the requirement of MR Form Completion Guideline, Version 04 CDM-EB75-A07 (<i>If data and parameters monitored described in section D.2 above are determined by a sampling approach, provide a description on how project participants implemented the sampling efforts and surveys for those data and parameters according to the sampling plan.</i>); as none of the monitoring parameters reported under Section D.2 of the MR has followed sampling plan approach as per the registered PDD. Please clarify.</p>	
<b>Acceptance and Close out by Lead Assessor: Open</b>	<b>Date: 25/10/2013</b>



Project Participant Response:	Date: 31/10/2013
<p><b>Parameter P<sub>PJ,y</sub>:</b> The unit for this parameter is m<sup>3</sup> bricks/blocks and this is calculated by multiplying the number of bricks/blocks with the corresponding volume of each brick/block as shown below.  <i>Production m<sup>3</sup> bricks/blocks = number of bricks/blocks x volume of each element</i>  In view of this exercise it is mentioned as 'calculated'. There is no specific conversion factor for converting the brick production in numbers to m<sup>3</sup>.</p> <p><b>Parameter P<sub>PJ,y</sub>: Monitoring Equipment details (Table 2) –</b>  The details and reason for replacing the Energy meters for AP/PSM/II/3 and AP/VSP/II/10 sites, has been included vide Table 3(a) at the end of MR.  The Accuracy Class specified for SPE AP/EG/II/8 and AP/EG/II/9 is an editorial error and these units run on only diesel hence there are no energy meters.  The Accuracy Class for the energy meters AP/VSP/II/10 has been included.  The energy meter serial no. is reported for a "Sub meter".  This Sub meter is at the site of AP/VSP/II/10 and is directly involved in the power metering.</p> <p><b>Parameter FC<sub>y</sub>:</b> The recording frequency of diesel is 'Daily' based on estimates without any measuring equipment.  Hence, we are taking diesel purchased in the year as the diesel consumption, as a conservative approach, because such purchases are measured; such measurements are out of calibrated system (pump) and duly recorded by bills.  Description of QA/QC procedure is harmonised with that of registered monitoring plan.</p> <p><b>Parameter Performance of project brick/block in terms of Compressive Strength once in six months:</b>  All the strength certificates have been scanned and soft copies have been provided to DOE.  However based on the current comments the compressive strength data has also been included in Tables 4(a) and 4(b). For this purpose, for the sake of harmony, the strength value in kg/cm<sup>2</sup> is converted to MPa, wherever applicable, using the scientific conversion factor of 10.2 kg/cm<sup>2</sup> per one MPa.</p> <p><b>Section D.3:</b> The query on sampling plan has been addressed by harmonising with that of revised PDD.</p>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
MR Version 03.1 B-2 200513-TR Commented-ECPL-311013	
<b>Information Verified by Lead Assessor:</b>	
Revised Monitoring Report, version 4 dated 31/10/2013 ( Note: The PP has mentioned version 3.1 as per the UNFCCC MR template nomenclature and within the MR document the version has been revised as version 4 dated 31/10/2013)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
<b>Section D.2 (Data and parameters monitored):</b>	
<p><b>Parameter P<sub>PJ,y</sub>:</b> The parameter is being calculated based on the number of the bricks produced and the volume of each brick. The same was found to be included in the revised MR, version 4 under section D.2. The QA/QC approach as per the registered monitoring plan has been conducted in actual during the current monitoring period and the same has been corrected in the revised MR, version 4.</p> <p><b>Parameter P<sub>PJ,y</sub>: Monitoring Equipment details (Table 2) –</b>  The meter change details for SPEs AP/PSM/II/3 and AP/VSP/II/10 sites, the respective timeline (date) and reason for such replacement and installation has now been found to include transparently under table-3(a) at the end of the MR, version 4.</p> <p>The relevant correction in accuracy class specified for SPE AP/EG/II/8 and AP/EG/II/9 was found to be done correctly in the revised MR, version 4 under table-3 and hence is accepted.</p> <p>The accuracy class of AP/VSP/II/10 has now been included correctly under table-3 of the revised Mr, version 4. The same was checked against the calibration certificate and was found consistent.</p> <p>The serial no. of the meter as per the calibration certificate dated 30/04/2012 refers L&amp;G-TVE102/3 and the accuracy class as Class-1 which was found to be consistent with the revised MR, version 4 and hence accepted.</p> <p><b>Parameter FC<sub>y</sub>:</b> The actual monitoring frequency for the parameter has been included transparently in the</p>	



revised MR, version 4 on daily basis. The QA/QC procedures have now been corrected in the revised MR. The same was checked against the registered monitoring plan and found to be consistent.

**Parameter Performance of project brick/block in terms of Compressive Strength once in six months:**

The detailed results of compressive strengths have now been included transparently under table 4(a) and table 4(b) correctly. The same was checked against the respective strength certificates and found to be consistent.

**Section D.3:** The same has now been corrected in the revised MR, version 4 which is found to be in line with the registered monitoring plan and MR completion guideline, version 04 CDM-EB75-A07 and hence is accepted.

**CAR02** is closed out.

<b>Acceptance and Close out by Lead Assessor: Closed</b>	<b>Date: 02/12/2013</b>
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Date:	06/06/2013	Raised by:	Assessment Team		
Type:	CAR	Number:	03	Reference:	AU4 section 3.1-3.7
<b>Lead Assessor Comment:</b>			<b>Date:</b> 06/06/2013		
<p>PP has to clarify with regard permanent changes in design of the project as identified during site audit as per the requirements of VVS para 249(b) and 250. PP has to clarify if the changes have any effect on the following aspects:</p> <p>(a) The applicability and application of the applied methodology under which the project activity has been registered;</p> <p>(b) The additionality of the project activity;</p> <p>(c) The scale of the project activity.</p>					
<b>Project Participant Response:</b>			<b>Date:</b> 22/06/2013		
<p><i>The changes in the design of the project are due to withdrawn of one SPE (AP/GTR/II/6) and termination of one SPE (AP/VZM/II/11).</i></p> <p><i>This change does not have any effect on:</i></p> <p><i>a) Applicability and application of the applied methodology;</i></p> <p><i>b) Additionality of the project activity; and</i></p> <p><i>c) Scale of the project activity.</i></p>					
<b>Documentation Provided as Evidence by Project Participant:</b>					
<p><i>MR version 01 dated 06/05/2013.</i></p> <p><i>Revised PDD version 05 dated 22/06/2013</i></p>					
<b>Information Verified by Lead Assessor:</b>					
<p>Updated and revised monitoring report, version 1 dated 06/05/2013 (The PP has not revised the version and date of the MR).</p> <p>Revised PDD version 05 dated 22/06/2013</p>					
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>					
<p>The changes in the PDD was checked and found to be consistent in terms of proposed changes, however, the PP is requested to justify how these changes are not having an impact on the following aspects to qualify under the appendix 1 of PS:</p> <p>(a) The applicability and application of the applied methodology under which the project activity has been registered;</p> <p>(b) The additionality of the project activity;</p> <p>(c) The scale of the project activity.</p> <p>Also this aspect was not found to be covered in the monitoring report transparently. PP is requested to clarify how the changes do not affect the above criteria and qualify under Appendix 1 of PS.</p>					
<b>Acceptance and Close out by Lead Assessor:</b>			<b>Date:</b> 08/07/2013		
<b>Project Participant Response:</b>			<b>Date:</b> 10/07/2013		
<p><i>The following explanation was mentioned in MR under B.2.4:</i></p> <p><i>As mentioned in B.1 above, out of 11 units one unit II/6 is self- withdrawn and the other one II/11 has been terminated due to non-compliance. However, these two units do not have any effect on:</i></p> <p><i>1) The applicability and application of applied methodology under which the project activity has been registered because the applicability criteria of methodology III.Z with cap on 60 kilo tons CO2 per annum do not get changed due to inoperation of these two units. The application is not effected because the technology and baseline remain same without any change.</i></p> <p><i>2) The additionality of project activity has no change because of unchanged prevailing practice so much so the baseline;</i></p> <p><i>3) The scale of project activity remains same in SSC segment because the inoperation of two units bring down the capacity and in turn the ERs within permissible cap.</i></p> <p><i>In view of the above explanations, the PRC does not require prior approval as directed by Project Standard vide EB70 Annex 2 Appendix 1 Clause 6.</i></p>					

<b>Documentation Provided as Evidence by Project Participant:</b>	
MR version 03 dated 10/07/2013	
Revised PDD version 05 dated 02/07/2013	
<b>Information Verified by Lead Assessor:</b>	
Updated and revised monitoring report, version 3 dated 10/07/2013	
Revised PDD version 05 dated 02/07/2013 ( PP has not revised the version of the PDD)	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
<p>The updated and revised monitoring report, version 3 dated 10/07/2013 was checked and found to include the justification under section B.2.4 of the MR transparently. The same was cross-checked by the assessment team during the on site visit and it was confirmed :</p> <p>That the changes would not affect the conclusions of the validation report of the registered PDD with regard to</p> <ol style="list-style-type: none"> <li>1. Additionality of the project activity</li> <li>2. Scale of the project activity</li> <li>3. Applicability and application of approved baseline methodology under which the project activity has been registered; or</li> <li>4. The compliance of the monitoring plan with the applied monitoring methodology</li> </ol> <p>The same is found to be in line with VVS, version 3.0 para 273 and hence is accepted.</p> <p>Following aspects were identified in the PDD version 05 dated 02/07/2013</p> <p>As per the requirement of Para 30 of CDM Project Standard, v04 (<i>Project participants shall provide a description of the proposed CDM project activity or PoA that provides an understanding of the nature of the project and its implementation</i>), the description presented in the <b>Section A.1, Section B.2 (pg 15) &amp; Section B.5 (21)</b> of the revised PDD does not provide complete clarity on the involvement of total FaL-G brick plants in the revised project design as it has mentioned both 11 and 9 SPE units at various locations in the states of Tamil Nadu and Andhra Pradesh. Please justify.</p> <p><b>Revised PDD, page 8</b> has stated “<i>The schematic FaL-G process is provided in a chart as below</i>” but there no such schematic diagram appended. Please clarify.</p> <p><b>Section B.7.2:</b> Under section for Sampling plan it has been stated as “<i>The units are visited randomly once in an year subject to minimum of 25% of operating units of the bundle.</i>”, which is not found correlated with the PDD completion guideline EB66 Annex 9 which requires – “<i>If data and parameters monitored in section B.7.1 above are to be determined by a sampling approach, provide a description of the sampling plan in accordance with the recommended outline for a sampling plan in the “Standard for sampling and surveys for CDM project activities and programme of activities.”</i> Please clarify as none of the monitoring plan for the parameters described under section B.7.1 has adopted sampling plan approach.</p>	
<b>Acceptance and Close out by Lead Assessor: Open</b>	<b>Date:</b> 25/10/2013
<b>Project Participant Response:</b>	<b>Date:</b> 31/10/2013
<p>The description presented in the <b>Section A.1, Section B.2 (pg 15) &amp; Section B.5 (21)</b> of PDD has been duly corrected.</p> <p>The schematic FaL-G process in PDD as well in MR is getting distorted when the document is changed from track version to clean version and is causing problem. In order to avoid such distortion the figure is now embedded in JPEG form in both the documents.</p> <p>Section B.7.2: Due to some comprehension gap the statement was given. However, after getting the clarification, correction is done in PDD. MR has also been harmonised with PDD.</p>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
MR Version 03.1 B-2 200513-TR Commented-ECPL-311013	
CDM VER1376 PDD-PRC VVS020713-ECPL281013-clean	
CDM VER1376 PDD-PRC VVS020713-ECPL281013-tc	
<b>Information Verified by Lead Assessor:</b>	
MR, version 4 dated 31/10/2013 ( Note: The PP has mentioned version 3.1 as per the UNFCCC MR template nomenclature and within the MR document the version has been revised as version 4 dated 31/10/2013)	
PDD, version 6 dated 28/10/2013 (track change)	
PDD, version 6 dated 28/10/2013 (Clean)	

Reasoning for not Acceptance or Acceptance and Close Out:	
<p>The description mentioned under Section A.1, Section B.2 &amp; Section B.5 in the revised PDD, version 6 are now found to be consistent with the actual number of SPEs in the project activity and hence is accepted.</p> <p>The revised PDD, version 6 was checked and the schematic diagram was to be included correctly and hence is accepted.</p> <p><b>Section B.7.2:</b> The sampling plan approach has now been correctly addressed in the revised PDD, version 6 and hence is accepted.</p> <p><b>CAR03</b> is closed out.</p>	
Acceptance and Close out by Lead Assessor: Closed	Date: 02/12/2013

Date:	06/06/2013	Raised by:	Assessment Team		
Type:	CAR	Number:	04	Reference:	AU4 section 5
Lead Assessor Comment:			Date: 06/06/2013		
PP has to clarify the Actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards in section E.7 of MR. PP has to clarify the linking of the monthly data to yearly data in the emission reduction sheet during calculation of emission reduction for continued flow of data and clarify the MR with regard to the frequency of archiving in the log books on daily data and archiving in excel sheet on monthly basis for the data received from the SPEs					
Project Participant Response:			Date: 22/06/2013		
<i>The emission reductions are bifurcated for the first commitment period and the period starting from 1<sup>st</sup> January 2013.</i> <i>Monthly data is linked to yearly data in the emission reduction sheet during calculation of emission reduction for continued flow of data.</i> <i>MR contains the frequency of archiving. Log books are maintained by SPEs on daily basis and archived by PP in excel sheet on monthly basis for the data received from the SPEs.</i>					
Documentation Provided as Evidence by Project Participant:					
<i>B-II-ER Computation - 2011-12</i> <i>B-II-ER Computation - 2012-13</i> <i>B-II-ER Computation- Jan-Mar 13.</i>					
Information Verified by Lead Assessor:					
1. Updated and revised monitoring report, version 1 dated 06/05/2013 ( Note: The PP has not revised the version and date of the MR). (Note: The PP did not state the MR in the above box but they had provided a revised version)					
2. Updated and revised ER sheets, version 2 dated 22/06/2013					
Reasoning for not Acceptance or Acceptance and Close Out:					
The actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards in section E.7 of updated and revised monitoring report, version 1 dated 06/05/2013 was checked and found consistent with EB75, Annex7 and hence is accepted by the assessment team. The monthly data in the revised ER sheet was checked and found to include the linkage to the yearly data correctly and hence is accepted by the assessment team. Although the details of the archiving frequency is mentioned transparently by the PP in FO in accordance with the registered PDD, the PP needs to clarify why the details under section D.2 as per the requirement of para 234-237 of VVS and EB75, Annex7 were not being mentioned transparently. Please clarify. OPEN.					
Acceptance and Close out by Lead Assessor: Open			Date: 08/07/2013		
Project Participant Response:			Date: 10/07/2013		
<i>The archiving frequency of data is mentioned under Section D.2.</i>					
Documentation Provided as Evidence by Project Participant:					
<i>MR version 03 dated 10/07/2013</i> <i>B-II - ER Computation - 2011-12.xls;</i> <i>B-II - ER Computation - 2012-13.xls and</i> <i>B-II - ER Computation - Jan-Mar 2013.xls</i>					
Information Verified by Lead Assessor:					
Updated and revised monitoring report, version 3 dated 10/07/2013 Updated and revised ER sheet, version 3 dated 10/07/2013					
Reasoning for not Acceptance or Acceptance and Close Out:					
The updated and revised monitoring report, version 3 dated 10/07/2013 was checked under section D.2 and was found that the archiving frequency is mentioned transparently as per the requirement of para 234-237 of VVS and EB75, Annex7 and hence is accepted.					
Section E.1 (Description on calculation of baseline emissions): Baseline emissions calculation methodological choice especially description on “Annual production specific emission factor ( $EF_{BL}$ )” and “Biomass Correction Factor” is found to be directly imported from the registered PDD without appropriate referencing and correlation to ex-post ER calculation approach. Please clarify.					
Section E.4 and E.5 (Summary and comparison of ER value):					

The reported time period as presented to report the ER summary is not found sufficiently clear and specific in terms of month and date.

The final ER value has not presented as the conservative rounded down whole number.

The leakage value reported for the time period 2011-2012(8 months) seems to be erroneous as the calculation approach adopted in the ER spreadsheet found to be inconsistent with the registered monitoring plan.

The final ER value in Section E.5 is inconsistent with the value reported in section E.4 above.

**Section E.6:** How the variables such as market demand, unit performance and worker's availability has impacted the total actual ER value is not found clear. Which factor is ultimately varied due to variables such as market demand, unit performance and worker's availability has not been made clear.

**ER Calculation Spreadsheets (B-II - ER Computation - 2011-12.xls; B-II -ER Computation - 2012-13.xls and B-II - ER Computation - Jan-Mar 2013.xls):**

The consolidated summary of the ER value (baseline emissions, Project Emissions, Leakage) for the complete current monitoring period (01/08/2011 to 31/03/2013) has not been sufficiently presented in the ER calculation spreadsheet. Multiple three ER spreadsheets, repartition of time periods are leading to confusion and non-transparency. The summed up values for respective monitoring parameters and ER summary as reported in the MR could not be directly correlated with special emphasis to Project Emission values.

**B-II -ER Computation - 2012-13.xls:** The final net ER value has been rounded up, which is not found conservative.

**B-II - ER Computation - Jan-Mar 2013.xls:** The final net ER value has been rounded up, which is not found conservative.

**B-II - ER Computation - 2011-12.xls:** The equation used (Column J) to calculate leakage emission calculation for Cement and Mineral Lime consumption is found to be inconsistent with the registered monitoring plan and also inconsistent with the approach followed for the time period 2012-2013. Please clarify.

**B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls:** Both the spreadsheets under tab "ER Report for RY 11" and "ER Report for RY 12" has mentioned the respective rows for excluded SPEs (AP/GTR/II/6 and AP/VZM/II/11) which is found to be redundant for the ER spreadsheet in the revised project design context. Please clarify.

**B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls:** Both the spreadsheets under tab "ER Report for RY 11" and "ER Report for RY 12" row 6 and row 5 respectively has mentioned the default value 1.3 tCO<sub>2</sub>/MWh as "IPCC default value-emission on electricity" which is not found to be consistent with the registered monitoring plan.

**B-II - ER Computation - 2011-12.xls:** Under tab "ER Report for RY 11" row 5 has mentioned the factor "Electricity consumption /cu.m – 3.5 kWh" which is not found to be correlated with any of the ER calculation algorithm and also not traced in the registered monitoring plan. Please clarify.

**B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls:** Both the spreadsheets under tab "TN-KCP-II-1" has used the Metering Factor 30 to derive the month wise electricity consumption values, whereas no such factor has been used for other SPE specific sheets. Please clarify as no specific note/clarification mentioned in the respective spreadsheet itself.

<b>Acceptance and Close out by Lead Assessor: Open</b>	<b>Date: 25/10/2013</b>
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<b>Project Participant Response:</b>	<b>Date: 31/10/2013</b>
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**Section E.1 (Description on calculation of baseline emissions):** *The term 'ex-ante' has been removed from the statement that addresses the issue.*

**Section E.4 and E.5 (Summary and comparison of ER value):**

*The reported time period as presented to report the ER summary is now corrected by specifying the month and date as per the format given.*

*The final ER value has been now made conservative by rounding down the value.*

*The leakage value reported for the time period 2011-2012(8 months) has been now corrected and made consistent with the monitoring plan.*



*The final ER value in Section E.5 has been corrected and made consistent with that of E.4.*

**Section E.6:** *It is all the three factors, independently, combinedly or collectively that keep changing from unit to unit.*

**ER Calculation Spreadsheets (B-II - ER Computation - 2011-12.xls; B-II -ER Computation - 2012-13.xls and B-II - ER Computation - Jan-Mar 2013.xls):**

*Multiple three ER spreadsheets, repartition of time periods might have led to confusion but certainly it is not non-transparent and this is uncalled for and highly objectionable comment. A comprehensive spreadsheet 'B-II-ER Computation-Summary for 2011-13' with the summed up values for respective monitoring parameters and ER summary as reported in the MR has been prepared and included as part of the present package.*

**B-II -ER Computation - 2012-13.xls:** *The final net ER value has been now rounded down to make the data conservative.*

**B-II - ER Computation - 2011-12.xls:** *The equation used (Column J) to calculate leakage emission calculation for Cement and Mineral Lime consumption is now corrected and attached.*

**B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls:** *The rows of the SPEs (AP/GTR/II/6 and AP/VZM/II/11) in both the spreadsheets under tab "ER Report for RY 11" and "ER Report for RY 12" have been deleted.*

**B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls:** *"IPCC default value-emission on electricity" is changed to "Default value as per Tool-emission on electricity" in both the spreadsheets under tab "ER Report for RY 11" and "ER Report for RY 12" row 6 and row 5. Respectively.*

**B-II - ER Computation - 2011-12.xls:** *The factor "Electricity consumption /cu.m – 3.5 kWh" under tab "ER Report for RY 11" row 5 has been an assumed value for power consumption/ m3 for computing project emissions in ex-ante ERs. However this becomes irrelevant now as the electricity consumption is taken based on the bills provided by service provider. Hence this value is deleted from this spreadsheet.*

**B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls:** *Please note that MF as shown under TN-KCP-II-1 is Multiplication Factor (MF) for the electricity meter. The difference in closing and opening meter readings is multiplied by a factor 30 to arrive to the consumption value. For other SPEs there is no such MF. For better clarity, MF is replaced with the term 'Multiplication Factor' in the relevant spreadsheets.*

**Documentation Provided as Evidence by Project Participant:**

MR Version 03.1 B-2 200513-TR Commented-ECPL-311013  
B-II-ER Computation -2011-12 with 1% corr factor for electricity 311013.xls  
B-II-ER Computation -2012-13-311013.xls  
B-II-ER Computation-Summary for 2011-13-311013.xls

**Information Verified by Lead Assessor:**

Monitoring Report, version 4 dated 31/10/2013 (Note: The PP has mentioned version 3.1 as per the UNFCCC MR template nomenclature and within the MR document the version has been revised as version 4 dated 31/10/2013)  
B-II-ER Computation -2011-12 dated 31/10/2013  
B-II-ER Computation -2012-13 dated 31/10/2013  
B-II-ER Computation-Summary for 2011-13 dated 31/10/2013



**Reasoning for not Acceptance or Acceptance and Close Out:**

**Section E.1 (Description on calculation of baseline emissions):** The calculation approach for the parameter  $EF_{BL}$  was found to be corrected in the revised MR, version 4 and hence is accepted.

**Section E.4 and E.5 (Summary and comparison of ER value):**

The month wise breakup has been found to be addressed clearly in the revised MR, version 4 and hence is accepted.

The final ER value was checked and found to be consistent with the ER summary sheet.

The leakage value reported for the time period 2011-2012(8 months) has now been corrected considering emissions from both lime and OPC route in the revised ER sheet, dated 31/10/2013 and hence is accepted.

The final ER value in Section E.5 has been corrected in the revised MR, version 4 and hence is accepted.

**Section E.6:** The clarification provided by the PP was found acceptable by the assessment team and hence is accepted.

**ER Calculation Spreadsheets (B-II - ER Computation - 2011-12.xls; B-II -ER Computation - 2012-13.xls and B-II - ER Computation - Jan-Mar 2013.xls):**

The comprehensive spreadsheet 'B-II-ER Computation-Summary for 2011-13' prepared and submitted by the PP with the summed up values for respective monitoring parameters and hence is accepted.

**B-II -ER Computation - 2012-13.xls:** The final net ER value has now been corrected and has been rounded down for conservativeness in the revised ER sheet "*B-II-ER Computation -2012-13*" dated 31/10/2013 and hence is accepted.

**B-II - ER Computation - Jan-Mar 2013.xls:** The final net ER value has been down for conservativeness in the revised ER sheet "*B-II-ER Computation -2012-13*" dated 31/10/2013 and hence is accepted.

**B-II - ER Computation - 2011-12.xls:** The calculation approach for both 2011-12 and 2012-13 has now been corrected and made consistent with the registered monitoring plan and hence is accepted.

**B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls:** Both the spreadsheets under tab "ER Report for RY 11" and "ER Report for RY 12" has been corrected and has two SPEs (AP/GTR/II/6 and AP/VZM/II/11) removed in line with the revised PDD and hence is accepted.

**B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls:** Both the spreadsheets under tab "ER Report for RY 11" and "ER Report for RY 12" row 6 and row 5 respectively has now been found to mention the source of emission factor from electricity correctly in line with the revised PDD and hence is accepted.

**B-II - ER Computation - 2011-12.xls:** "*Electricity consumption /cu.m – 3.5 kWh*" was found to be excluded under tab "ER Report for RY 11" row 5 which is now consistent with the registered monitoring plan and hence is accepted.

**B-II - ER Computation - 2011-12.xls and B-II -ER Computation - 2012-13.xls:** The same was now found correctly justified in both the ER sheets for 2011-12 and 2012-13 and hence is accepted.

1. In page 3 of the MR, the estimated figure states it is based on the registered PDD but as per the calculations, the figure is taken from the revised PDD. Please clarify

2. The PP is requested to clarify on how the estimated value was calculated under section E.5 of the MR.

3. Please clarify why the tables which follow on from section E.7 (2012 and 2013 actual values) is not included as an Annex.

4. B-II - ER Computation - Jan-Mar 2013

- In tab 'ER Report for RY 12' the round off figure for the ERs does not match the MR.

B-II-ER Computation – summary for 2011-2013

- Tab "ER for 2011-13" Cell N25 doesn't match the actual figure quoted in the MR or in the verification report. Please clarify

<p>PDD PRC VVS track registered PDD-ECPL</p> <ul style="list-style-type: none"> <li>- Page 8, bottom of the diagram covers some of the text in the next section. Please clarify.</li> </ul>	
<p>Clean and track changed version of revised PDD</p> <ul style="list-style-type: none"> <li>- Section B.6.3, in the table there are gaps in the rows where SL.no. 6 used to be and the SL. No. column states there are 10 plants rather than 9. Please clarify.</li> <li>- Please clarify why the Appendix 6 does not list that the crediting period start date has been corrected</li> </ul> <p><b>CAR04</b> remains open.</p>	
<b>Acceptance and Close out by Lead Assessor: Open</b>	<b>Date: 12/01/2014</b>
<b>Project Participant Response:</b>	<b>Date: 17/01/2014</b>
<p>1. The statement has been modified accordingly in page 3 of the revised MR, version 5.</p> <p>2. A note has been provided on how the estimated value was calculated under section E.5 of the MR.</p> <p>3. There is no Annex included in the MR. The tables have been included in the next page of the MR for better clarity.</p> <p>4. B-II - ER Computation - Jan-Mar 2013</p> <ul style="list-style-type: none"> <li>- In tab 'ER Report for RY 12' the round off figure for the ERs and MR has been made consistent. B-II-ER Computation – summary for 2011-2013</li> <li>- Tab "ER for 2011-13" Cell N25 is made consistent with the actual figure quoted in the MR.</li> </ul> <p>PDD PRC VVS track registered PDD-ECPL</p> <ul style="list-style-type: none"> <li>- The text has been taken in the next section of the revised Mr, version 5.</li> </ul> <p>Clean and track changed version of revised PDD</p> <ul style="list-style-type: none"> <li>- Section B.6.3, the gaps in the rows and the SL. No. has been corrected.</li> <li>- The Appendix 6 now list the crediting period start date.</li> </ul>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
<p>Revised B-II-ER Computation-Jan-Mar 2013</p> <p>Revised PDD PRC VVS track registered PDD-ECPL</p> <p>Clean and track changed version of the revised PDD.</p>	
<b>Information Verified by Lead Assessor:</b>	
<p>Revised B-II-ER Computation-Jan-Mar 2013</p> <p>Revised PDD PRC VVS track registered PDD-ECPL (The PP had not revised the version and date of the PDD)</p> <p>Clean and track changed version of the revised PDD (The PP had not revised the version and date of the PDD)</p> <p>Revised Monitoring Report, version 5 dated 17/01/2014 (Note: The PP did not state the MR in the above box but they had provided a revised version)</p>	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
<p>1. The page 3 of the revised MR, version 5 has been corrected with regard to the estimated figure which was found to be based on the revised PDD, hence accepted by the assessment team.</p> <p>2. The PP had included the note under section E.5 of the revised MR, version 5 on ow the estimated figure has been arrived at and the detailed calculation has been carried out transparently in the Revised B-II-ER Computation-Jan-Mar 2013 correctly and hence is accepted by the assessment team.</p> <p>3. The PP clarified that the tables under section E.5 of the revised MR, version5 is not a part of any Annexures and has included the remaining tables in the next page which was found to be in line with the MR template, version 3.2 and MR completion guidelines, version 4.0 and hence is accepted.</p> <p>PDD PRC VVS track registered PDD-ECPL</p> <p>The page 8 of the track change PDD (owing to the small typo change, the PP had wished not to revise the version and date of the documents) was checked and was found to correct the text in page 8 which was include on the next page and hence is accepted.</p> <p>Clean and track changed version of revised PDD</p> <ul style="list-style-type: none"> <li>- The section B.6.3 of the revised PDD was found to be corrected with regard to the gaps in rows and serial no. of the plants correctly and hence is accepted.</li> <li>- The Appendix 6 was checked in the revised PDD and was found to include the correction with regard to the crediting period start date and hence is accepted.</li> </ul>	

<p>Please clarify Page 9, the link at the top of the page; when clicking this link, it states the domain is for sale and there is no information. This issue also occurs on page 15, footnote 1- how just cross referring to the registered PDD will serve the purpose since the actual referred web-link is not working, can PP provide the screenshot of the referred web-link or any other alternative web-link?</p> <p>Section E.5 please clarify how the estimated value was calculated</p> <p>Section E.7 – there are tables which follow on from section E.7 (2012 and 2013 actual values) please clarify.</p> <p>B-II - ER Computation - Jan-Mar 2013</p> <ul style="list-style-type: none"> <li>- In tab 'ER Report for RY 12' the round off figure for the ERs does not match the MR.</li> </ul> <p>B-II-ER Computation – summary for 2011-2013</p> <ul style="list-style-type: none"> <li>- Tab "ER for 2011-13" Cell N25 doesn't match the actual figure quoted in the MR or in the verification report. Please clarify. Although the ER spreadsheet has been revised but it has not been clarified how the value 15727.34 at cell \$N\$24 has been rounded down to 15726 at cell \$N\$25</li> </ul> <p>PDD PRC VVS track registered PDD-ECPL</p> <ul style="list-style-type: none"> <li>- Page 8, bottom of the diagram covers some of the text in the next section. The schematic diagram presented under page 8 of the VVS track registered PDD, actually does not matches with the same presented under page 10 of the VVM track registered PDD</li> </ul>	
<b>Acceptance and Close out by Lead Assessor: Open</b>	<b>Date: 24/01/2014</b>
<b>Project Participant Response:</b>	<b>Date: 25/01/2014</b>
<p><i>Page 9: The PP would like to state that the weblink was working during the registration of the project and based on that the PDD was registered. The weblink mentioned in the registered PDD was referred for <math>EF_{BL}</math> which is a fixed ex-ante for the Annual production specific emission factor. Hence, the PP has considered the reference of the registered PDD as the same has been endorsed by the UNFCCC for future reference.</i></p> <p><i>Section E.7 – The annexure has been included under section of the revised MR, version 6.</i></p> <p><i>B-II - ER Computation - Jan-Mar 2013</i></p> <p><i>The same has now been made consistent with the revised MR, version 6.</i></p> <p><i>B-II-ER Computation – summary for 2011-2013</i></p> <p><i>The net emission reduction in cell \$N\$25 is the result of the sum of two emission reductions \$N\$26 of the tab "ER for 2011-12" and \$N\$25 for the tab "ER for 2012-13". ER has now been updated based on correct roundup to 15727.</i></p> <p><i>PDD PRC VVS track registered PDD-ECPL. The same has now been corrected</i></p>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
<ol style="list-style-type: none"> <li>1. Revised MR, version 6</li> <li>2. Revised B-II-ER Computation-Summary for 2011-13</li> <li>3. Revised PDD PRC VVS track registered PDD-ECPL</li> </ol>	
<b>Information Verified by Lead Assessor:</b>	
<p>MR version 06 dated 25/01/2014</p> <p>Emission reduction spreadsheets, version 4 dated 25/01/2014</p> <ol style="list-style-type: none"> <li>1. B-II - ER Computation - 2011-12.xls</li> <li>2. B-II - ER Computation - Jan-Mar 2013.xls</li> <li>3. B-II -ER Computation - 2012-13.xls</li> <li>4. B-II -ER Computation - Summary for 2011-2013.xls</li> </ol> <p>CDM VER1376 PDD-PRC VVS Track Registered PDD - ECPL 140125.pdf</p>	

<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
<p>Section E.5: The justification for estimated value was found to be consistent and thus accepted.</p> <p>Section E.7: Annexure 1 has been provided which was found to be not in continuation of section E.7 and thus accepted.</p> <p>B-II - ER Computation - Jan-Mar 2013: Roundoff figure has been found to be removed and thus accepted.</p> <p>B-II-ER Computation – summary for 2011-2013: Total ERs for the period of 01/08/2011- 31/03/2012 and 01/04/2012- 31/03/2013 has been now summed up in the summary sheet and then total value has been rounded down correctly by the PP in the summary sheet and was found to be consistent and thus accepted.</p> <p>PDD PRC VVS track registered PDD-ECPL: PDD was found to be corrected and the schematic diagram of page 8 and the VVS track PDD was found to be consistent and thus accepted.</p> <p>The modified schematic Fal-G process chart under revised PDD section A.3 has not demarcated the project boundary as per the registered PDD? Or the upstream raw material supply chain and downstream market has been considered included under the project boundary under the revised diagram?</p> <p>The reported value (202,122.47) of the Electricity consumption parameter (ECPJ,j,y) under section D.2 is found to be inconsistent with the value (203,122.47) specified under ER spreadsheet.</p>	
<b>Acceptance and Close out by Lead Assessor: Open</b>	<b>Date: 07/02/2014</b>
<b>Project Participant Response:</b>	<b>Date: 08/02/2014</b>
<p>PDD revised with diagram in section A.3 corrected with project boundary</p> <p>MR revised with correction in section D.2 for the value as 203,122.47 in line with ER spreadsheet. Also, project diagram revised under Figure 1 on 27 of the MR.</p>	
<b>Documentation Provided as Evidence by Project Participant:</b>	
<p>MR version 07 dated 08/02/2014</p> <p>PDD version 07 dated 08/02/2014 track change</p> <p>PDD version 07 dated 08/02/2014 clean</p>	
<b>Information Verified by Lead Assessor:</b>	
<p>MR version 07 dated 08/02/2014</p> <p>PDD version 07 dated 08/02/2014 track change</p> <p>PDD version 07 dated 08/02/2014 clean</p>	
<b>Reasoning for not Acceptance or Acceptance and Close Out:</b>	
<p>The diagram under section A.3 has now been corrected in line with the project boundary in the revised PDD, version 7 dated 08/02/2014 which was found consistent and hence is accepted.</p> <p>The revised MR, version 7 dated 08/02/2014 was found to correct the value of Electricity consumption parameter (ECPJ,j,y) under section D.2 which was checked with the ER spreadsheet and found consistent. Further, the schematic diagram was found to be consistent with the revised PDD, hence is accepted.</p>	
<b>Acceptance and Close out by Lead Assessor: Closed</b>	<b>Date: 14/02/2014</b>

## 10. Statement of Competence

Name: Shivaji  
Chakraborty

### Status

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

### Scopes of Expertise

<b>1. Energy Industries (renewable / non-renewable)</b>	<b>x</b>
Technical Area(s):	
TA 1.1 Thermal energy generation from fossil fuels and biomass including thermal electricity from solar	
TA 1.2 Energy generation from renewable energy sources	
<b>2. Energy Distribution</b>	<b>x</b>
Technical Area(s): TA 2.1 Electricity distribution	
TA 2.2 Heat distribution	
<b>3. Energy Demand</b>	<b>x</b>
Technical Area(s): TA 3.1 Energy Demand	
<b>4. Manufacturing</b>	
Technical Area(s):	
<b>5. Chemical Industry</b>	
Technical Area(s):	
<b>6. Construction</b>	
Technical Area(s):	
<b>7. Transport</b>	
Technical Area(s):	
<b>8. Mining/Mineral Production</b>	
Technical Area(s):	
<b>9. Metal Production</b>	
Technical Area(s):	
<b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>	
Technical Area(s):	
<b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	
Technical Area(s):	
<b>12. Solvent Use</b>	
Technical Area(s):	
<b>13. Waste Handling and Disposal</b>	
Technical Area(s):	
<b>14. Afforestation and Reforestation</b>	
Technical Area(s):	
<b>15. Agriculture</b>	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 19/09/2012

## Statement of Competence

Name: **Sauvik  
Banerjee**

### Status

- Lead Assessor	<b>x</b>	- Expert	<b>x</b>
- Assessor	<b>x</b>	- Financial Expert	
- Local Assessor	<b>India</b>	- Technical Reviewer	

### Scopes of Expertise

<b>1. Energy Industries (renewable / non-renewable)</b>	<b>x</b>
Technical Area(s): TA 1.1 Thermal energy generation from fossil fuels and biomass including thermal electricity from solar	
<b>2. Energy Distribution</b>	
Technical Area(s):	
<b>3. Energy Demand</b>	
Technical Area(s):	
<b>4. Manufacturing</b>	
Technical Area(s):	
<b>5. Chemical Industry</b>	
Technical Area(s):	
<b>6. Construction</b>	
Technical Area(s):	
<b>7. Transport</b>	
Technical Area(s):	
<b>8. Mining/Mineral Production</b>	
Technical Area(s):	
<b>9. Metal Production</b>	
Technical Area(s):	
<b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>	
Technical Area(s):	
<b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	
Technical Area(s):	
<b>12. Solvent Use</b>	
Technical Area(s):	
<b>13. Waste Handling and Disposal</b>	
Technical Area(s):	
<b>14. Afforestation and Reforestation</b>	
Technical Area(s):	
<b>15. Agriculture</b>	
Technical Area(s):	

Approved Member of Staff by: **Siddharth  
Yadav** Date: **02/08/2013**

## Statement of Competence

Name: Naveen  
Sharma

### Status

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

### Scopes of Expertise

<b>1. Energy Industries (renewable / non-renewable)</b>	<input type="checkbox"/>
Technical Area(s):	
<b>2. Energy Distribution</b>	<input type="checkbox"/>
Technical Area(s):	
<b>3. Energy Demand</b>	<input type="checkbox"/>
Technical Area(s):	
<b>4. Manufacturing</b>	<input checked="" type="checkbox"/>
Technical Area(s): <i>4.1 Cement sector</i>	
<b>5. Chemical Industry</b>	<input type="checkbox"/>
Technical Area(s):	
<b>6. Construction</b>	<input type="checkbox"/>
Technical Area(s):	
<b>7. Transport</b>	<input type="checkbox"/>
Technical Area(s):	
<b>8. Mining/Mineral Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>9. Metal Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>	<input type="checkbox"/>
Technical Area(s):	
<b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	<input type="checkbox"/>
Technical Area(s):	
<b>12. Solvent Use</b>	<input type="checkbox"/>
Technical Area(s):	
<b>13. Waste Handling and Disposal</b>	<input type="checkbox"/>
Technical Area(s):	
<b>14. Afforestation and Reforestation</b>	<input type="checkbox"/>
Technical Area(s):	
<b>15. Agriculture</b>	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 29/02/2012



## Statement of Competence

Name: Ajoy Gupta

### Status

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

### Scopes of Expertise

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

Approved Member of Staff by: Siddharth Yadav Date: 22/02/2012

## Statement of Competence

Name: Kartar,  
Narang

### Status

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

### Scopes of Expertise

<b>1. Energy Industries (renewable / non-renewable)</b>	<input type="checkbox"/>
Technical Area(s):	
<b>2. Energy Distribution</b>	<input type="checkbox"/>
Technical Area(s):	
<b>3. Energy Demand</b>	<input type="checkbox"/>
Technical Area(s):	
<b>4. Manufacturing</b>	<input checked="" type="checkbox"/>
Technical Area(s): <i>TA4.1 Cement sector</i>	
<b>5. Chemical Industry</b>	<input type="checkbox"/>
Technical Area(s):	
<b>6. Construction</b>	<input type="checkbox"/>
Technical Area(s):	
<b>7. Transport</b>	<input type="checkbox"/>
Technical Area(s):	
<b>8. Mining/Mineral Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>9. Metal Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>	<input type="checkbox"/>
Technical Area(s):	
<b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	<input type="checkbox"/>
Technical Area(s):	
<b>12. Solvent Use</b>	<input type="checkbox"/>
Technical Area(s):	
<b>13. Waste Handling and Disposal</b>	<input type="checkbox"/>
Technical Area(s):	
<b>14. Afforestation and Reforestation</b>	<input type="checkbox"/>
Technical Area(s):	
<b>15. Agriculture</b>	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 29/02/2012

## Statement of Competence

Name: **Tarit Roy**

### Status


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

### Scopes of Expertise

<b>1. Energy Industries (renewable / non-renewable)</b>	<input checked="" type="checkbox"/>
Technical Area(s): <i>TA 1.1 Thermal energy generation from fossil fuels and biomass including thermal electricity from solar</i>	
<b>2. Energy Distribution</b>	<input type="checkbox"/>
Technical Area(s):	
<b>3. Energy Demand</b>	<input type="checkbox"/>
Technical Area(s):	
<b>4. Manufacturing</b>	<input checked="" type="checkbox"/>
Technical Area(s): <i>TA4.3 Iron and steel</i>	
<b>5. Chemical Industry</b>	<input type="checkbox"/>
Technical Area(s):	
<b>6. Construction</b>	<input type="checkbox"/>
Technical Area(s):	
<b>7. Transport</b>	<input type="checkbox"/>
Technical Area(s):	
<b>8. Mining/Mineral Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>9. Metal Production</b>	<input type="checkbox"/>
Technical Area(s):	
<b>10. Fugitive Emissions from Fuels (solid, oil and gas)</b>	<input type="checkbox"/>
Technical Area(s):	
<b>11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b>	<input type="checkbox"/>
Technical Area(s):	
<b>12. Solvent Use</b>	<input type="checkbox"/>
Technical Area(s):	
<b>13. Waste Handling and Disposal</b>	<input type="checkbox"/>
Technical Area(s):	
<b>14. Afforestation and Reforestation</b>	<input type="checkbox"/>
Technical Area(s):	
<b>15. Agriculture</b>	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by: **Siddharth Yadav** Date: **13/02/2012**

## 11. Photographic Evidence

Unique reference number: AP/KRIS/II/7	Parameter: Electricity-EC <sub>PJ,i,v</sub>
Name of equipment: Energy Meter	Date: 04/06/2013
 <p>The photograph shows a white energy meter mounted on a wall. A bright light source is positioned in front of the meter's display, causing a significant glare. The meter has a blue label with technical specifications. Visible text on the label includes: 'Type: EY1055, 3Ph, 3W', 'Power Factor: 1 to -1', 'Rel. Temp: 27°C', 'Max. Pulse/Min: 100', 'Max. 10A', 'SEC 50007', 'Ch 0.5s', 'July, 2006', and 'VILLAGE BATES, BAROTWALA, KUNDA'. There are two blue circular buttons below the label and a small circular port on the right side of the meter.</p>	

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