



VALIDATION REPORT

Birla Corporation Limited

**ENERGY EFFICIENCY MEASURES AT CEMENT
PRODUCTION PLANT**

SGS Climate Change Programme

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ENERGY EFFICIENCY MEASURES AT CEMENT PRODUCTION PLANT	SGS Climate Change Programme
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Summary

This validation report consists of the assessment of the project "Energy efficiency measures at cement plant" at Birla Corporation Limited, unit – Chittorgarh Cement Works. This includes the project summary, objective, scope of validation, validation protocol, findings/checklist, stakeholders' consultation and validation opinion.

The project activity is energy efficiency measures in cement plant which reduces energy consumption in 13 different measures. The source of electricity is the northern regional grid. Thus the activity reduces the anthropogenic GHG emissions which otherwise would have been generated by grid connected power plants to produce the same amount of electricity.

The project meets the requirement of SSC project criteria and applicable for AMS II.D version 8 methodology.

Subject.:		
CDM validation		Indexing terms
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Abbreviations

PDD	Project Design Document
CDM	Clean Development Mechanism
UNFCCC	United Nation Framework Convention on Climate Change
CER	Certified Emission Reduction
MP	Monitoring Plan
CEA	Central Electricity Authority
SSC	Small Scale Category
LSC	Large Scale Category
kWh	Kilo Watt Hour
GWh	Giga Watt Hour
OM	Operating Margin
BM	Build Margin
CM	Combined Margin
GHG	Green House Gas
IPCC	Intergovernmental Panel on Climate Change
kW	Kilo Watt
CO ₂ e	Carbon di-oxide equivalent
CAR	Corrective Action Request
NIR	New Information Request
OBS	Observation
DNA	Designated National Authority
LoA/HCA	Letter of Approval / Host Country Approval
Ref	Reference
QA	Quality Assurance
QC	Quality Control
DOE	Designated Operational Entity
PP	Project Participant
NGO	Non –Governmental Organization

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Annex 1: Local assessment

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1. Introduction

1.1 Objective

Birla Corporation Limited has commissioned SGS to perform the validation of the project: 'Energy efficiency measures at cement plant' with regard to the relevant requirements for CDM project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Certified Emission Reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

1.2 Scope

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

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

1.3 GHG Project Description

The proposed CDM project activity is the energy efficiency measures in cement plant which reduces energy consumption across the clinkerization unit by 13 different measures. The source of electricity is the northern regional grid. Thus the activity reduces the anthropogenic GHG emissions which otherwise would have been generated by grid connected power plants to produce the same amount of electricity.

Baseline Scenario:

Under the baseline scenario, the continuation of pre-project scenario is the most likely scenario. The energy efficiency improvements by different measures faced barriers due to prevailing practice and technological barriers. The source of energy is the northern regional grid. The electricity saved by project activity would otherwise have been generated by the power plants of the regional grid which has the mix of mainly thermal, hydro and nuclear plants.

With Project Scenario:

The project activity saves electricity by reducing specific electricity consumption across the clinkerization unit and the same was achieved by installing VFDs for fans, modifications/retrofits to reduce fan draught and replacing fans with energy efficient one. The saving is electrical saving and measurable. The associated anthropogenic emission of greenhouse gases is less than that was occurring prior to the project activity when specific energy consumption was higher even for the same production.

Leakage:

There is no equipment transferred from another activity and the existing equipment is also not

transferred to another activity. So no leakage is to be considered.

Environmental & Social Impacts:

There are no negative environmental and social impacts expected with the project activity, the same has been cross-checked during local stakeholder consultation process.

1.4 The names and roles of the validation team members

Name	Role
<i>Jochen Gross – SGS Germany</i>	<i>Team Leader</i>
<i>Sanjeev Kumar - SGS India</i>	<i>Assessor</i>
<i>Syed Khursheed Zaidi - SGS India</i>	<i>Local Assessor</i>

2. Methodology

2.1 Review of CDM-PDD and additional documentation

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

A site visit is usually required to verify assumptions in the baseline. Additional information can be required to complete the validation, which may be obtained from public sources or through telephone and face-to-face interviews with key stakeholders (including the project developers and Government and NGO representatives in the host country). These may be undertaken by the local SGS affiliate. The results of this local assessment are summarized in Annex 1 to this report.

2.2 Use of the validation protocol

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

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

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

Checklist Question	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
<i>The various requirements are linked to checklist questions the project should meet.</i>	<i>Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.</i>	<i>The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.</i>	<i>This is either acceptable based on evidence provided (Y), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). New Information Request (NIR) is used when the validation team has identified a need for further clarification.</i>

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

2.3 Findings

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

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

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR)**. A CAR

is issued, where:

- I. mistakes have been made with a direct influence on project results;
- II. validation protocol requirements have not been met; or
- III. there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be verified.

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

Observations may be raised which are for the benefit of future projects and future verification or validation actors. These have no impact upon the completion of the validation or verification activity.

Corrective Action Requests and New Information Requests are raised in the draft validation protocol and detailed in a separate form (Annex 3). In this form, the Project Developer is given the opportunity to "close" outstanding CARs and respond to NIRs and Observations.

2.4 Internal quality control

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

3. Determination Findings

3.1 Participation requirements

The host Party for this project is India. India has ratified the Kyoto protocol on 26 Aug 2002. A Letter of Approval for the project activity was provided dated 26th December 2005 and issued by the Indian DNA (reference number 4/24/2005-CCC).

Initially, no reference regarding the Letter of Approval from Indian DNA was provided to the validator and CAR (01) was raised. Later on, this was made available by project proponent and CAR (01) was closed out.

No Annex I Party has been identified in the PDD and therefore no further Letter of Approval was obtained. It is observed that the CDM EB has agreed that the registration of a CDM project activity can take place without an Annex I Party being involved at the stage of registration although it should be noted that before CER can be transferred to an Annex I Party, a Letter of Approval will need to be submitted.

3.2 Baseline selection and additionality

The project has applied AMS-II.D/Version 08 "Energy efficiency and fuel switching measures for industrial facilities". The project activity is the energy efficiency improvements in cement plant. The expected electrical energy saving is 5.78 GWhe and well below than 60 GWhe per year.

The continuation of previous scenario was the most likely scenario. The project is using the specific energy consumption approach to justify the energy saving measure made in the plant up to clinkerization. All the measures were tested for their previous specific electricity consumption prior to the project activity for the baseline. Any reduction in specific electricity consumption leads to energy saving and emission reduction for each measure. The uncertainty in the approach was resolved by raising a number . of CARs and NIRs. The project is finally saving the electricity which otherwise would have been generated by the northern regional grid which comprises of mainly thermal, hydro and nuclear power plants.

The CAR (04) was raised on the energy baseline, baseline model, calculation reliability and the approach conservativeness. The same was verified during site visit. The baseline was found calculated transparently as per enclosure 3A and 3B. The project proponent also explained how project baseline model was selected. The model was found to be transparent and verifiable. The values used in the calculation were audited during site visit and found correct as per financial audited values under schedule 16. The CAR (04) was closed out.

The NIR (10) was raised to get more information on used equipment on site. This was found that new equipment was purchased for the project activity which was verified by purchase orders. No transboundary impact is expected from the project activity and NIR (10) was closed out.

The project participant wishes to have the fixed ten years crediting period starting from 01 April 2000.

The starting date of the project activity has been verified as 02 February 2000 and the first measure was commissioned on 01 April 2000. In order to provide evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity, minutes of a Board meeting of the project participant were provided. These minutes were reviewed during the site visit and the excerpts of the meeting duly signed by the managing director have been submitted to the validator. It was found that the relevant meetings took place on 03 Jan, 14 Jan and 02 Feb 2000. The minutes showed the carbon credit was taken into account during the decision on going ahead with the project activity.

The project has adopted the barriers due to prevailing practice and technological barriers to justify the additionality of the project. This was verified that the less technologically advanced alternative which was continuation of previous scenario involved lower risks due to the performance uncertainty and was the most likely scenario for the project developer and would have led to higher emissions. The risks involved for the project activity were:

- 1) degradation in cement quality, may affect the market share
- 2) more maintenance required, may cause to more investment
- 3) may cause to more stoppage and less production rate
- 4) thermal/material stabilization risk due to retrofit measures

In order to get all the related documents/information on which basis the project was shown additional, CAR (12) was raised. The information regarding capacity expansion plan in relation to CDM project, investment sum and project income, financing, similar project activity/similar technology with/without financial assistance and the recent available technology were asked and reviewed. The information was found realistic and CAR (12) was closed out.

CARs (13), (14) & (31) were raised for more information on using similar technology in other cement plants. The similar efforts were not found likely to be implemented in other plants at the time of project activity starting in the region as per information available which was again verified with Ex Plant Head of another cement plant and former president of Cement Manufacturing Association. The energy efficiency improvements were evident with the plant data during site visit and can be said overall better performance of the system. CARs (13), (14) & (31) were closed out.

NIR (30) was raised if the project design engineering reflects current good practice and possible alternatives available to the project activity. It was found that the project activity was the implementation of recent available technologies with older mill. There had been barrier due to prevailing practice. The most likely alternative was verified as the continuation of previous scenario. The Minutes of meetings held before the project implementation has been received and reviewed for CDM consideration prior to project implementation to go ahead with the project activity. NIR (30) was closed out.

To verify the information on project technology if this is likely to be substituted by other or more efficient one within the crediting period, NIR (32) was raised. The technology being used in the plant was found the recent one that was available to the project developer as per discussion with developer and other sources. This does not seem to be replaced in next four years of crediting period as the six years are already over. NIR (32) was closed out.

NIR (33) was raised if the technology leads to additional training. The training was conducted for the new instalments and in house training for the retrofits measures. The training procedures have been verified as per ISO standards and NIR (33) was closed out.

NIR (34) was raised on how the project interacts with the whole plant. No adverse effect was observed

during site visit with the project activity and NIR (34) was closed out.

Based on the findings above, it is concluded that the project activity was not a likely baseline scenario and hence additional to any which would have happened in absence of project activity.

3.3 Application of Baseline methodology and calculation of emission factors

The project has applied the small scale AMS-II.D methodology version 8 dated 23rd December 2006, for “Energy efficiency and fuel switching measures for industrial facilities” for small-scale CDM project activities and meets the small scale limits.

This category covers project activities aimed primarily at energy efficiency; the measures may replace, modify or retrofit existing facilities or be installed in a new facility. The aggregate energy savings of a single project may not exceed the equivalent of 60 GWhe per year. All these applicability conditions of AMS.IID. version 08 have been met by the project activity.

The CAR (11) was raised for determinations of emission reductions and baseline. In response to the CAR the project participant provided all the detail calculations for emission reduction with explanation. The same is attached to the revised PDD as enclosure 3 & 4. The emission reduction calculation was found conservative and in line with the methodology. The emission reduction calculations are again subjected to be checked at the time of verification and hence the CAR (11) was closed out.

The CAR (05), (06), (07), (08) & (09) were raised on grid emission factor calculation. In response to the CARs, the project proponent recalculated the grid emission factor based on northern regional grid using most recent published factor available which was reviewed and found satisfactory as per CEA website <http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm>. The grid emission factor as combined margin is 0.75 kgCO₂/kWh for 2004-05. The factor will be updated ex-post as per latest available CEA published factor. The CAR (05), (06), (07), (08) & (09) were closed out.

In response to the CARs, the total estimated emission reductions was reduced to 43826 tCO₂ from 56266 tCO₂ for the ten years crediting period.

3.4 Application of Monitoring methodology and Monitoring Plan

The project activity uses monitoring methodology as described in paragraph 6 of the small scale methodology AMS.II.D version 08. that is in the case of replacement, modification and retrofit measures the monitoring shall consist of:

- (a) Documenting the specifications of the equipment replaced;
- (b) Metering the energy use of the industrial facility, processes or the equipment affected by the project activity;
- (c) Calculating the energy savings using the metered energy obtained from subparagraph

The document on specifications on the replaced equipment has been provided. The detail calculation on emission reduction is in enclosure 3 & 4 to the PDD. The table D.3 of the PDD mentions the parameter to be monitored as per the methodology. The 14th efficiency measure taken on cement mill fan was excluded from project activity to make the monitoring plan simple because all other 13 measures are up to clinkerization.

NIR (15) was raised for the monitoring methodology and the requirement of the monitoring of

parameter required. The explanation was required for the calculation affected due to deterioration of the equipment efficiency with time and more information on the calibration of the metering system. In response, the monitoring plan was corrected in revised PDD. The deterioration of equipment efficiency will itself be taken care of during emission reduction calculation because the efficiency with time is subjected to decrease and hence the emission reduction may be lesser and that can be taken care of during verification. The calibration is the part of QA/QC procedure under ISO 9001 and can be taken care during verification hence this has been converted to observation (01). NIR (15) was closed out.

The monitoring plan includes all the data that is required to be verified. CAR (16) was raised to avail QA/QC procedure for which the separate document 'GHG performance procedure' was provided. This document contains all the information about management system and responsibilities, procedure for training, emergency preparedness, calibration, maintenance of monitoring equipment, monitoring, measurement, reporting, records handling, adjustments, uncertainties, review, internal audits and corrective actions. NIRs (18) & (19) were closed out with CAR (16) based on the information available in the above document.

The baseline calculation in enclosure 3A & 3B to the PDD explains how the energy savings have been calculated. The tests were conducted to estimate the energy savings for each measure (modifications/VFD installations). The average of energy consumed per hour was tested in pre and post project scenario and the savings in energy per hour was converted into energy saved per annum using the hourly operation of the individual measure. Although negligible but keeping in mind the fact that the optimisation of clinker production can also reduce the electrical energy consumption in the plant, the specific energy consumption (SEC) of each measure was also calculated based on the electricity consumed by the individual measure per ton of clinker (all the measures validated in the PDD were made up to clinkerization). Thus the reduction in SEC from the baseline is used for energy savings calculation of the measures in project years.

The electricity saved by the project activity would have been purchased from the northern regional grid and hence the northern grid emission factor was used as baseline emission factor. The energy saving from the project activity multiplied with grid emission factor gives the final emission reduction. The formulas used are as follows:

A) Pre-project scenario:

Energy consumed by the individual measure	= a	kWh
Reasonable hours of test	= b	hr
Energy consumed per hr	= a/b	kWh/hr

B) Post project scenario:

Energy consumed by the measure	= x	kWh
Reasonable hours of test	= y	hr
Energy consumed per hr	= x/y	kWh/hr

C) Energy saving:

Energy saved per hour	= $x/y - a/b$	kWh/hr
Annual running hours	= h	hrs
Annual clinker production	= w	tonne
Specific energy saved per annum (S)	= $(x/y - a/b) \times h/w$	kWh/tonne of clinker

D) Estimated emission reduction:

Clinker production in the project year	= C	tonne
Annual energy saved	= C x S	kWh
Annual estimated emission reduction (tCO ₂ e)	= C x S x baseline emission factor	

To meet the requirement of monitoring methodology, the following monitoring plan was adopted:

- The specifications of the equipment replaced were documented in the plant and verified during site visit. The VFD installations were also verified with the purchase orders.
- The energy use of the equipment affected by the project activity is being metered.
- The energy saving is calculated using the metered energy obtained from sub-paragraph (b)

The following parameters are being monitored for the project activity;

- Clinker production, (C), tonne
- Energy consumption by each measure, (E), kWh
- Operating hours (H), hrs
- Power consumption of each measures, (P), kW
- Grid Emission factor, (EF), tCO₂/kWh

Emission Reduction Calculations:

Baseline specific energy consumption (SEC_b) = (a/b) x (running hrs/baseline clinker production)

Specific energy consumed (SEC_p) by the measure = E/C kWh/tonne of clinker

Energy saved = (SEC_b - SEC_p) x C kWh

Emission reduction (tCO₂) = (SEC_b - SEC_p) x C x baseline emission factor

As explained above, in the project years the actual energy consumption by the individual measure is being monitored daily with final clinker production. The SEC will be calculated monthly for each measure. The annual test will be conducted for power consumption of the individual measures. The operating hours are also being monitored of each measure of project activity. This will help to cross verify the energy consumption data of each measure.

The reduction in SEC by the each measure project activity multiplying by the actual clinker production in project years will give the actual energy saving in the crediting years. The emission reduction will be calculated by multiplying energy saving with the grid emission factor.

The monitoring plan is appropriate and transparently outlined in the revised PDD version 7 dated 10/06/2008 which correctly describes the unit and frequency of the measurement of parameters representing the energy use of each equipment in accordance with the 'Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories AMS.II.D version 08 applied for the project activity. This is inline with the requirement described in EB 33 meeting report para 64 (e).

3.5 Project design

In PDD, few corrections were required in accordance with the guidelines for SSC PDD and NIR (02) and CAR (27) were raised for the same. The PDD has been revised in accordance with the guidelines for completion of the SSC project design document and NIR (02) & CAR (27) were closed out. NIRs (28) & (29) were raised for justification of all specific requirements for the PDD. The PDD was revised

to address the issues and provided to the validator. NIRs (28) & (29) were closed out.

CAR (03) was raised to get the information were direct links were missing in the PDD. The project developer provided the information in hard copies. This information were reviewed during site visit and found reliable. CAR (03) was closed out.

CAR (35) was raised on the starting date of crediting period and operational life of the project, the PDD was revised as per document available and given the date of minute of meeting as starting date of project activity and commissioning date of first measure as crediting period starting date. The expected life time of the project was more than 15 years. CAR (35) was closed out.

3.6 Environmental Impacts

The project was found in compliance with local/legal regulation. The same was checked during local stakeholder consultation process. Though the project had short-term negative impacts on various components of socio-economic environment due to increase in population comprising of workmen and labour during construction phase, that was for short duration and these impacts were minimised and contained within the site. It was verified with MoEF documents that EIA study was not required for present project activity as the present project activity is not listed under schedule for S.O.1533. <http://envfor.nic.in/legis/eia/so1533.pdf>

The plant has less GHG emission in comparison to previous practice; this contributes towards global environmental improvement. The project reduces GHG emission which otherwise would have been generated by other fossil fuel being used in grid connected power plants. In accordance with the requirements of Indian regulations/laws, the plant in which the project activity is installed has obtained "Consent to establish and operate" from State Pollution Control Board which is an indication of regulatory acceptance. Also the host country approval has been given to project activity from Ministry of Environment and Forests. These documents were reviewed and found satisfactory.

In order to get more information how the project contributes to the sustainable development and causes no negative impact, the NIR 17 was raised. This has been confirmed that no EIA required for the project activity and LoA confirms the project leads to sustainable development. The evidence was obtained how Birla Corporation Limited is active as social responsible corporate and the NIR 17 was closed out.

To get more information on any adverse effects like noise or vibration on the site, NIR (20) was raised. The project activity was not found with any additional noise/vibration other than the baseline scenario and NIR (20) was closed out.

NIR (21) was raised to confirm any transboundary impact due to the project activity. This was ensured that no second hand equipment was being used at the site. The project activity involves mainly retrofits measures and other equipments were newly purchased. NIR (21) was closed out.

3.7 Local stakeholder comments

In order to verify whether the project details were made publicly available and how the public comments to project activity were invited; NIRs (22), (23), (25) & (26) were raised. The project developer provided the copy of communication letters with stakeholders' comments to prove the transparency in the LSC process and NIRs (22), (23), (25) & (26) were closed out.

To ensure the requirement of LSC process by law NIR (24) was raised. This is found that the process is conducted by pollution control board prior to give the consent to establish or operate a project.

However, the same has also been conducted by the project developer however this was not mandatory by law for them. NIR 24 was closed out.

The local stakeholders' comments on the project activity were reviewed to verify any adverse impact to local community. It was found that no public complain was registered to State Pollution Control Board office on project activity as consent to establish has been made available to validator. The written local stakeholder comments were obtained and verified.

4. Comments by Parties, Stakeholders and NGOs

In accordance with sub-paragraphs 40 (b) and (c) of the CDM modalities and procedures, the project design document of a proposed CDM project activity shall be made publicly available and the DOE shall invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This chapter describes this process for this project.

4.1 Description of how and when the PDD was made publicly available

The PDD and the monitoring plan for this project were made available on the SGS website <http://www.sgsqualitynetwork.com/tradeassurance/ccp/projects/project.php?id=48> and were open for comments from 01 November 2005 until 30 November 2005. Comments were invited through the UNFCCC CDM homepage <http://cdm.unfccc.int/Projects/Validation/DB/WSSWII4PYRZSHDFMZ70LP7ORZEY080/view.html>

4.2 Compilation of all comments received

Comment number	Date received	Submitter	Comment
0			

No comment was received

4.3 Explanation of how comments have been taken into account

No comment was received

5. Validation opinion

SGS has performed a validation of the project: “Energy efficiency measures at cement plant” at Birla Corporation Limited at Chittorgarh unit in the state of Rajasthan in India. The Validation was performed on the basis of the UNFCCC criteria and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

Using a risk based approach, the review of the project design documentation and the subsequent follow-up interviews have provided SGS with sufficient evidence to determine the fulfilment of the stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. The project will hence be recommended by SGS for registration with the UNFCCC.

SGS has received confirmation by the host Party that the project activity assists it in achieving sustainable development.

By increasing the energy efficiency and reducing the energy consumption for per tonne of clinker production, the project results in reductions of greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change. A review of the barrier due to prevailing practice and technological barrier associated with project activity at the time of project implementation demonstrates that the proposed project activity was not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. The project is already implemented and is likely to achieve the estimated amount of emission reductions.

The validation is based on the information made available to SGS and the engagement conditions detailed in the report. The validation has been performed using a risk based approach as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence SGS can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

The DOE declares herewith that in undertaking the validation of this proposed CDM project activity it has no financial interest related to the proposed CDM project activity and that undertaking such a validation does not constitute a conflict of interest which is incompatible with the role of a DOE under the CDM.

6. List of persons interviewed

Date	Name	Position	Short description of subject discussed
Dec 2005	Mr. K C Mittal	Managing Director	Project concept and CDM consideration
Dec 2005	Mr. Dinesh Chanda	Manager	Baseline and additionality
Dec 2005	Mr. V. S. Panwar	Assistant Vice President - Projects	Project Implementation
Dec 2005	Mr. V.K. Hamirwasia	Joint President	Additionality and other options available
Dec 2005	Mr. Shuvendu Bose	Sr. Consultant	Grid emission factor, baseline calculations and emission reduction calculations

7. Document references

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

- /1/ Project Design Document version 07 dated 10/06/2008, Encl 03A & 03B, Encl 04
- /2/ Letter of Approval

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

- /3/ Feasibility report s for the projects, expecting savings and project commissioning
- /4/ Energy consumption before and after project activity implementation for different measures
- /5/ Environment clearances
- /6/ Mean of communication with stakeholders and stakeholders comments
- /7/ New equipments purchase order
- /8/ CDM consideration note
- /9/ Modalities of communication

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Annex 1 Local Assessment Checklist

Table 12 Additional information to be verified by local assessors / site visit

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
The project shall not make use of Official Development Assistance (ODA), nor result in the diversion of such ODA	DR/I	PDD	Original documents checked during site visit and found satisfactory	OK	OK
Does the project meet the additional requirements detailed in: Table 9 for SSC projects	DR	PDD and SSC modalities	The project activity is not a de-bundling activity of the large project, the same has been confirmed during site visit	OK	OK
Are the baseline emissions determined in accordance with the methodology described	AMS -II.D PDD	DR	Baseline emission calculation sheet and the plant log book sheets were checked during the site visit. The saving in the energy is due to specific energy consumption reduction per tonne of clinker for each measure. Northern grid emission factors are used as the plant falls under the northern grid.	OK	OK
Is the discussion on the additionality clear and have all assumptions been supported by transparent and documented evidences	PDD	DR	The main barriers to the project activity were barriers due to prevailing practice and technological barrier. The PDD describes several technological risks associated with the project. The same are justifiable This was verified that the replaced equipment was not likely to be replaced within crediting period.	OK	OK
Does the PDD provide for the monitoring of the baseline emissions as required in the monitoring methodology?	AMS -II.D /	DR	Northern grid has been used for calculation of ER. CEA data and ER excel	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	PDD		sheet were checked during the site visit		
Does the PDD provide for Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology	PDD	DR	The industry is ISO certified and have QA & QC procedures in place. The same has been incorporated in the revised PDD.	OK	OK
Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts?	PDD	DR	The Monitoring plan and the data recording system have been checked for all important monitoring parameters and found as per the written down procedures of ISO systems. There is no adverse impact expected with the project activity.	OK	OK
Are procedures identified for training of monitoring personnel?	PDD	DR	Training and interview of the persons involved were checked during site visit and the PDD has been revised accordingly.	OK	OK
Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	PDD	DR	The project activity is energy efficiency and does not intended to emissions due to emergencies.	OK	OK
Are procedures identified for calibration of monitoring equipment?	PDD	DR	The plant is ISO 9001 certified and maintaining log book and calibration records for their equipments. The calibration certificates & records of calibrations were found and can be taken care during verification further.	Obs 01	OK
Are procedures identified for maintenance of monitoring equipment and installations?	PDD	DR	The maintenance and monitoring procedures are in place as per the written procedures for ISO9001 certifications. Copy of the same has been collected during the site visit	Ok	OK
Are procedures identified for monitoring, measurements and reporting?	PDD	DR	The monitoring, measurement and	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			reporting procedures are in place. Copy of the GHG monitoring manual is received during the site visit.		
Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	PDD	DR	The records were found available in hard copies (log book) and soft copies generated through DCS. The same will be kept in the record room and will be archived for 2 years after the crediting period.	OK	OK
Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	PDD	DR	Gaps and uncertainty will be taken care as per the GHG emission reduction manual and ISO certification procedures	OK	OK
Are procedures identified for review of reported results/data?	PDD	DR	The data is recorded in shifts though operators, further checked by shift in charge and finally by plant manager.	OK	OK
Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	PDD	DR	The industry has formed a team for GHG compliance monitoring and reporting headed by plant manager. The team members were interviewed to assess their competence and systems and found Ok.	OK	OK
Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	PDD	DR	The GHG team is in place and is responsible for meeting the requirement.	OK	OK
Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	PDD	DR	The GHG team carries out internal audits for compliance and identifying gaps / further improvements and submit their report to the head GHG team" Plant Manager".	OK	OK
Has an analysis of the environmental impacts of the project activity been sufficiently described?	PDD	DR	The project activity does not have any environmental impact, the same has been verified	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			through obtaining the consent to establish and operate the plant issued by statutory body the state pollution control board.		
Are there any Host Party requirements for an Environmental Impact assessment (EIA), and if yes, is an EIA approved?	PDD	DR	This is an energy efficiency project and in such case no EIA is required as per the Indian law, copy of the notification issued by statutory body Ministry of Environment and Forest " MoEF" obtained during site visit	OK	OK
Will the project create any adverse environmental effects?	PDD	DR	The project activity is energy efficiency and does not envisage any adverse environmental impact.	Ok	OK
Are transboundary environmental impacts considered in the analysis?	PDD	DR	No second hand equipment has been transferred to another activity and the replaced one to another activity	OK	OK
Have identified environmental impacts been addressed in the project design?	PDD	DR	The project is energy efficiency and does not have any impact other than emissions from the production. However, the overall emission will reduce on implementation of this energy efficiency project.	OK	OK
Does the project comply with environmental legislation in the host country?	PDD	DR	<p>The project complies with the environmental legislation in the host country.</p> <p>Copies of regulatory approvals such as consent to establish and operate have been obtained during site visit.</p>	OK	OK
Have relevant stakeholders been consulted?	PDD	DR	Local stake holder meet was organised by the industry and minutes of	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			<p>the meeting was seen during local assessor's site visit.</p> <p>Few of the earlier attended participants were invited and interviewed.</p> <p>No adverse comment received during the interview other than water scarcity which is not due to project activity.</p>		
Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	The industry invited the stake holder through one to one invitation as this is the best way of communication in the villages. Copies of the minutes of the meeting with the stake holders were seen during site visit.	OK	OK
If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	PDD	DR	No stake holder consultation is required as per the law. However, client has voluntarily invited comments from local residents in the nearby villages but did not receive any adverse comment other than water scarcity which is common in the region.	OK	OK
Is a summary of the stakeholder comments received provided?	PDD	DR	Minutes of the meeting duly signed in by the project participants and local stake holder was seen and read during the site visit. The local assessor did not find with any adverse comment from the participants other than problems of potable water.	OK	OK
Has due account been taken of any stakeholder comments received?	PDD	DR	Provisions of drinking water were made available to the local villagers through water	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			tanker supply.		
Does the project design engineering reflect current good practices?	PDD	DR	The project design engineering reflects current good practice.	OK	OK
Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	PDD	DR	Yes, the project used state of the art technology available at the time of project implementation.	OK	OK

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Annex 2 Validation Protocol

This validation protocol is designed to ensure that the project meets the requirements for CDM projects that are detailed in paragraph 37 of the CDM modalities and procedures. Each requirement is covered in a separate table. The following requirements are discussed in this protocol:

Requirement	Description	
Participation requirements	The participation requirements as set out in Decision 17/CP.7 need to be satisfied	Covered in table 1
Baseline and monitoring methodology	The baseline and monitoring methodology complies with the requirements pertaining to a methodology previously approved by the Executive Board	Baseline methodology is covered in table 2 Monitoring methodology is covered in table 4
Additionality	The project activity is expected to result in a reduction in anthropogenic emissions by sources of greenhouse gases that are additional to any that would occur in the absence of the proposed project activity	Covered in table 3
Monitoring plan	Provisions for monitoring, verification and reporting are in accordance with relevant decisions of the COP/MOP	Covered in table 5
Environmental impacts	Project participants have submitted to the designated operational entity documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts and, if those impacts are considered significant by the project participants or the host Party, have undertaken an environmental impact assessment in accordance with procedures as required by the host Party;	Covered in table 6
Comments by local stakeholders	Comments by local stakeholders have been invited, a summary of the comments received has been provided, and a report to the designated operational entity on how due account was taken of any comments has been received;	Covered in Table 7
Other requirements	The project activity conforms to all other requirements for CDM project activities in relevant decisions by the COP/MOP and the Executive Board.	Covered in Table 8

Small sale projects and AR projects have specific requirements which are covered in Table 9-11

Further remarks on the use of this document:

- text in *italic blue* is meant as guidance for the assessor
- MoV = Means of Verification, DR= Document Review, I= Interview

This protocol should be adapted as required. For example, if the project is not a small scale project or an AR project, some tables can be deleted.

Table 1 Participation Requirements for Clean Development Mechanism (CDM) Project Activities (Ref PDD, Letters of Approval and UNFCCC website)

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
1.1 The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3 and be entered into voluntarily.	DR	Annex 2 of PDD	No funding of Annex I party available Project can proceed as unilateral project	ok	ok
1.2 The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof, and be entered into voluntarily	DR	PDD	No letter of approval from Indian DNA available	CAR 1.2	Ok, closed out
1.3 All Parties (listed in Section A3 of the PDD) have ratified the Kyoto protocol and are allowed to participate in CDM projects	DR	PDD	India has ratified the KP No engagement of Annex I party to date Unilateral project	ok	ok
1.4 The project results in reductions of GHG emissions or increases in sequestration when compared to the baseline; and the project can be reasonably shown to be different from the baseline scenario	DR	PDD and AMS -II.d	Maybe. The project will result in reductions of GHG emissions and will be different from baseline scenario, in case that CARs and NIRs are closed out	open	Ok, closed out
1.5 Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days (45 days for AR projects), and the project design document and comments have been made publicly available	DR	UNFCCC and SGS web page	ISC ends on 30 th of November 2005 No comments	Ok	ok
1.6 The project has correctly completed a	DR	PDD	PDD uses current	NIR	Ok,

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
Project Design Document, using the current version and exactly following the guidance		and UNF CCC web page	version, but some changes of the document were identified (see table 8)		close d out
1.7 The project shall not make use of Official Development Assistance (ODA), nor result in the diversion of such ODA	DR/I	PDD	To be confirmed during site visit	site visit	Ok, close d out
1.8 For AR projects, the host country shall have issued a communication providing a single definition of minimum tree cover, minimum land area value and minimum tree height. Has such a letter been issued and are the definitions consistently applied throughout the PDD?			Not relevant		
1.9 Does the project meet the additional requirements detailed in: Table 9 for SSC projects Table 10 for AR projects Table 11 for AR SSC projects	DR	PDD and SSC modalities	Seem so, but de-bundling has to be confirmed during site visit (cluster of 4 plants is discussed on page 16)	Site visit	Ok, close d out
1.10 Does the PDD use accurate and reliable information that can be verified in an objective manner?	DR	PDD	No. There are several links to public available information which may be verifiable in an objective manner. It is not known if the sources are reliable. Direct links to the documents are missing. No link to protocol of BCL-Chittorgarh decision to take up the project execution (page 13, 5 th line)	CAR 1.10 and site visit	Ok, close d out

Table 2 Baseline methodology(ies) (Ref: PDD Section B and E and Annex 3 and AM)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.1 Does the project meet all the applicability criteria listed in the methodology	AMS -II.D/ PDD	DR	Project meets all applicability criteria	Ok	Ok
2.2 Is the project boundary consistent with the approved methodology?	AMS -II.D / PDD	DR	Yes, definition of boundary is consistent with methodology	Ok	Ok
2.3 Are the baseline emissions determined in accordance with the methodology described	AMS -II.D PDD	DR	<p>No</p> <p>Step 1: energy baseline: Energy baseline is not transparent.</p> <p>2.3.1: numbers and calculations are not transparent. Calculations for energy savings are not shown, enclosure IV in pdf format, not excel</p> <p>2.3.2 no objective evidence</p> <p>Step 2: carbon intensity of Grid</p> <p>Step (a) Choice of grid: 2.3.3 description of grid selection is not transparent:</p> <p>2.3.4 No objective evidence for data available, Link on p 20 is correct but cannot be found, no direct link available. Open questions: are data most recent as required in paragraph 7 for category I.D of Appendix B? Are data reliable? Is choice of plants correct?</p> <p>Step (b) Use of methodology seems to be ok, but:</p> <p>2.3.5: Numbers and Calculations are not transparent and no</p>	CARs 2.3.1 to 2.3.9 Site visit	Ok, close d out

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			<p>objective evidence available, no direct link available, enclosure IV in pdf format, not excel</p> <p>2.3.6: Tables B 3.1 , B 3.2 B 3.3 and B3.4 are not available</p> <p>2.3.7: Not transparent if losses are taken into account as required</p> <p>2.3.8: Link to IPCC factors is not shown (they use IPCC 1996 emission factors for Sub-Bitumen coal and for natural gas (dry). It is not shown if the EFs are representative for the burned fuels.</p> <p>2.3.9 Enclosure IV, It is not clear if most recent 20 % of existing plants are used. Objective evidence is not available</p>		
2.4 Are the project emissions determined in accordance with the methodology described	AMS -II.D PDD section E	DR	The project emissions are 0	Ok	Ok
2.5 Is the leakage of the project activity determined in accordance with the methodology described	PDD	DR	No leakage effects described. It is not clear if second hand equipment will be used for the project	NIR 2.5	Ok, closed out
2.6 Are the emission reductions determined in accordance with the methodology described	AMS -II.D / PDD	DR	No, because baseline is not in accordance with methodology.	CAR 2.6	Ok, Closed out

Table 3 Additionality (Ref: PDD Section B3 and AM)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
3.1 Does the PDD follow all the steps required in the methodology to determine the additionality	PDD	DR	All steps are followed.	Ok	Ok
3.2 Is the discussion on the additionality clear and have all assumptions been supported by transparent and documented evidence	PDD	DR	<p>No!</p> <p>3.2.1: No quantitative evidence provided.</p> <p>3.2.2: No support by transparent and documented evidence.</p> <p>Additionality test:</p> <p>a) Investment barrier</p> <p>3.2.3: No information about investment sum and ratio of project income / investment (p 16). It is not possible to assess if the project is commercially attractive. Other companies in a cluster of 4 plants took the risks to invest in retrofit measures without CDM (see page 16, line 3 and 4).</p> <p>3.2.4: No information about financing.</p> <p>3.2.5: No information about capacity expansion plan in relation to this CDM project.</p> <p>b) technological barrier</p> <p>the PDD describes several technological risks associated with the project. The sum of all risks should be the technological barrier.</p> <p>3.2.6: No explanations about the experience in other cement plants (cluster) which use similar technology.</p> <p>3.2.7: The technology</p>	CAR 3.2.1 to 3.2.10 Site visit	Ok, close d out

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			<p>chosen for up-gradation is from late ninety's. No discussion about state of the art or other more recent technologies, literature not available, no technical details about equipment</p> <p>c) Barrier due to prevailing practice</p> <p>3.2.8: choice of measures not supported by evidence.</p> <p>3.2.9: Direct Links to official documents are missing.</p> <p>3.2.10: Was the normal life cycle of replaced equipment at the end?</p>		
3.3 Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	AMS -II.D / PDD	DR	The selected baseline may be the most likely scenario.	Ok	Ok
3.4 Is it demonstrated/justified that the project activity itself is not a likely baseline scenario?	PDD	DR	Not clear yet. It is not explained if similar measures in the cluster are representative for business as usual.	CAR 3.4	Ok, close d out

Table 4 Monitoring methodology (PDD Section D and AM)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
4.1 Does the project meet all the applicability criteria listed in the monitoring methodology?	AMS -II.D	DR	Yes, all applicability criteria are met	Ok	Ok
4.2 Does the PDD provide for the monitoring of the baseline emissions as required in the monitoring methodology?	AMS -II.D / PDD	DR	<p>Not clear yet.</p> <p>The description of the grid and the selection of plants has to be confirmed on site</p> <p>Methodology seems to be ok</p>	CAR 4.2 site visit	Ok, close d out
4.3 Does the PDD provide for the	AMS	DR	General explanation of	CAR	Ok,

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
monitoring of the project emissions as required in the monitoring methodology	-II.D / PDD		<p>monitoring methodology seems to be ok.</p> <p>4.3.1: some details are missing, for example pre-project stage historical data: fixed value might be used but other options are prediction with time series analysis inclusive decrease of efficiency over time.</p> <p>4.3.2: It is general explained that meters will be state of the art and calibrated. No support by objective evidence.</p> <p>4.3.3: It is not transparent and explained which meters will be used for the metering of each measure (14 measures between 2000 and 2003 are listed on page 6 to 9)</p>	4.3.1 to 4.3.3	close d out
4.4 Does the PDD provide for the monitoring of the leakage as required in the monitoring methodology	PDD	DR	It is not clear if monitoring of leakage is not relevant. See also 2.5 above	NIR 4.4	Ok, Close d out
4.5 Does the PDD provide for Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology	PDD	DR	No procedures available. QA/QC system is not defined	CAR 4.5 Site visit	Ok, close d out

Table 5 Monitoring plan (PDD Annex 4)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.1 Monitoring of Sustainable Development Indicators/ Environmental Impacts	PDD	DR	No monitoring of sustainable development indicators or environmental Impact is planned.	NIR 5.1	Ok, close d out
5.1 Does the monitoring plan provide the collection and archiving of relevant	PDD	DR	Monitoring of sustainable development indicators or	NIR 5.1.1	Ok, close

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
data concerning environmental, social and economic impacts?			environmental Impact is not discussed in the PDD	site visit	d out
5.1.1 Is the choice of indicators for sustainability development (social, environmental, economic) reasonable?	PDD	DR	Monitoring of sustainable development indicators or environmental Impact is not discussed in the PDD	NIR 5.1.2	Ok, closed out
5.1.2 Will it be possible to monitor the specified sustainable development indicators?	PDD	DR	Monitoring of sustainable development indicators or environmental Impact is not discussed in the PDD	NIR 5.1.3	Ok, closed out
5.1.3 Are the sustainable development indicators in line with stated national priorities in the Host Country?	PDD	DR	Monitoring of sustainable development indicators or environmental Impact is not discussed in the PDD	NIR 5.1.4	Ok, closed out
5.2 Project Management Planning					
5.2.1 Is the authority and responsibility of project management clearly described?	PDD	DR	No verbal description, only operational structure as figure, management is not described, operational structure is shown but not detailed	NIR 5.2.1	Ok, closed out
5.2.2 Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD	DR	No verbal description	NIR 5.2.2	Ok, closed out
5.2.3 Are procedures identified for training of monitoring personnel?	PDD	DR	No procedures for training	NIR 5.2.3 site visit	Ok, closed out
5.2.4 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	PDD	DR	No procedures for emergency preparedness	NIR 5.2.4 site visit	Ok, closed out
5.2.5 Are procedures identified for calibration of monitoring equipment?	PDD	DR	No procedures	NIR 5.2.5 site visit	Ok, closed out
5.2.6 Are procedures identified for maintenance of monitoring equipment and installations?	PDD	DR	No procedures	NIR 5.2.6 site visit	Ok, closed out
5.2.7 Are procedures identified for monitoring, measurements and	PDD	DR	No procedures	NIR 5.2.7	Ok, closed

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
reporting?				site visit	d out
5.2.8 Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	PDD	DR	No procedures	NIR 5.2.8 site visit	Ok, close d out Ok, close d out
5.2.9 Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	PDD	DR	No procedures	NIR 5.2.9 site visit	Ok, close d out
5.2.10 Are procedures identified for review of reported results/data?	PDD	DR	No procedures	NIR 5.2.10 site visit	Ok, close d out
5.2.11 Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	PDD	DR	No procedures	NIR 5.2.11 site visit	Ok, close d out
5.2.12 Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	PDD	DR	No procedures	NIR 5.2.12 site visit	Ok, close d out
5.2.13 Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	PDD	DR	No procedures	NIR 5.2.13 site visit	Ok, close d out

Table 6 Environmental Impacts (Ref PDD Section F and relevant local legislation)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
6.1 Has an analysis of the environmental impacts of the project activity been sufficiently described?	PDD	DR	No description of investigation. Only summary of impacts. Not transparent.	site visit	Ok, close d out
6.2 Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	PDD	DR	To be confirmed during site visit.	site visit	Ok, close d out
6.3 Will the project create any adverse environmental effects?	PDD	DR	Adverse effects (noise, vibrations, etc.) are not discussed.	NIR 6.3	Ok, close d out

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
6.4 Are transboundary environmental impacts considered in the analysis?	PDD	DR	Transboundary impacts are not discussed explicit. Only benefits are listed	NIR 6.4	Ok, closed out
6.5 Have identified environmental impacts been addressed in the project design?	PDD	DR	No negative environmental impacts identified	ok	Ok
6.6 Does the project comply with environmental legislation in the host country?	PDD	DR	To be confirmed during site visit	site visit	Ok, closed out

Table 7 Comments by local stakeholders (Ref PDD Section G)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
7.1 Have relevant stakeholders been consulted?	PDD	DR	The documentation of the stakeholder consultation is not transparent and not very detailed. The choice of the relevant stakeholder is not as required.	CAR 7.1 site visit	Ok, closed out
7.2 Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	Not clear. The documentation of the stakeholder consultation is not transparent and not very detailed	NIR 7.2 site visit	Ok, closed out
7.3 If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	PDD	DR	No information about requirement of consultation process by law. No info about the consultation process	NIR 7.3 site visit	Ok, closed out
7.4 Is a summary of the stakeholder comments received provided?	PDD	DR	No summary	NIR 7.4 site visit	Ok, closed out
7.5 Has due account been taken of any stakeholder comments received?	PDD	DR	No documentation, only global announcement that all comments were considered while preparing the PDD	NIR 7.5 site visit	Ok, closed out

Table 8 Other requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.1 Project Design Document					
8.1.1 Editorial issues: does the project correctly apply the PDD template and has the document been completed without modifying/adding headings or logo, format or font.	PDD	DR	No. <ul style="list-style-type: none"> Page 1, miss “small-scale” in headline A. Page 1, “project activity” is underlined in headline C. Page 1, miss “reductions” in headline E. Page 1, stakeholders is underlined in headline G. Page 1, “project activity” is underlined in headline annex 1 Page 1, enclosures are added Page 22, section C., “activity” in headline is underlined Page 26, 27, section D.3., D.4., D.5., D.6. wrong format (landscape) Page 40 – 50 added enclosures 	CAR 8.1.1	Ok, closed out
8.1.2 Substantive issues: does the PDD address all the specific requirements under each header. If requirements are not applicable / not relevant, this must be stated and justified	PDD	DR	No, at several points there are NIRs (see above)	NIR 8.1.2	Ok, closed out
8.1.3 other editorial issues	PDD	DR	BEE is missing in the list of abbreviations	NIR 8.1.3	Ok, closed out
8.1.4 location of the project	PDD	DR	The description of the location is not detailed enough, no address, no geographical coordinates	NIR 8.1.4	Ok, closed out

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.2 Technology to be employed					
8.2.1 Does the project design engineering reflect current good practices?	PDD	DR	Not transparent. Technology is of late ninety's. No description of possible alternatives or technological barriers due to existing equipment from 1965. It is not clear if the CDM criteria for energy efficiency CDM projects are fulfilled for all 14 measures from 2000 to 2003 (p 6 to 9)	NIR 8.2.1 Site visit	Ok, close d out
8.2.2 Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	PDD	DR	Not clear yet. 8.2.2.1: It is not clear if the technology is common, there is no discussion of alternatives. 8.2.2.2: No details about equipment provided (see also 3.2 above). 8.2.2.3: It is not transparent how the energy saving as evidence for " <i>a significant better performance</i> " is calculated and if this calculations are correct.	NIR 8.2.2.1 to 8.2.2.3 Site visit	Ok, close d out
8.2.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR	Not clear. No description of possible alternatives	NIR 8.2.3	Ok, close d out
8.2.4 Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	PDD	DR	Not clear. No technical details available to assess the necessity of training or the complexity of the technical solutions. The relevance of Kyoto protocol and the requirements for CDM projects should be aware	NIR 8.2.4	Ok, close d out
8.2.5 Additional technical aspects	PDD	DR	It is not clear how the project of 14 individual	NIR 8.2.5	Ok, close

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			measures interacts with the whole plant. Are there adverse effects on the whole plant?		d out
8.3 Duration of the Project/ Crediting Period					
8.2.3 Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD	DR	No, it is shown, that first actions were taken in 2000/2001 And project start is in 2000 But table on page 10 shows period 2001 to 2011 There are different information about lifetime, see also 8.2.5	CAR 8.2.3	Ok, closed out
8.2.4 Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?	PDD	DR	Yes (10 y)	ok	Ok
8.2.5 Does the project's operational lifetime exceed the crediting period	PDD	DR	Yes (15 to 10 y) according to E 1.2 On page 25 last paragraph 20-25 years are discussed as life span of the project, both are longer than 10 y	CAR 8.2.5	Ok, closed out

Table 9 Additional requirements for SSC projects

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
SSC projects use the SSC PDD and simplified baseline and monitoring methodologies as detailed in Appendix B (to the Modalities and Procedures for Small scale CDM projects, Annex II to Decision 21/CP.8) Indicative simplified baseline and monitoring methodologies for selected small scale CDM project activity categories					
9.1 Does the project qualify as a small scale CDM project activity as defined in paragraph 6 II of decision 17/CP.7 on the modalities and procedures for	§ 6 ii of decision	DR	Project shall be < 15 GWh <u>The project is saving 5.79 GWhe per annum electricity by different</u>	ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
the CDM?	17/C P.7 and PDD		<u>measures. This is well below than 60 GWhe limits for AMS.IID methodology now.</u>		
9.2 The small scale project activity is not a debundled component of a larger project activity?	Appendix C of SSC modalities	DR	No other project within 1 km of project boundary, to be confirmed during site visit, see also 1.9 above	Site visit <u>The project is not a debundled component of a larger project activity.</u>	<u>There is no similar type of project within 1km boundary.</u> Ok, closed out
9.3 Does proposed project activity confirm to one of the project categories defined for small scale CDM project activities?	SSC modalities	DR	Yes, Appendix B category II.D. <u>The project is an energy efficiency improvement in cement mill by putting different measures which affect the specific energy consumption (SEC) across the mill. The saving in SEC per tonne of clinker results into emission reduction. The project is applicable under AMS.II.D. methodology.</u>	ok	Ok

Table 10 Additional requirements for AR projects

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
10.1 Does the PDD specifically consider impacts on biodiversity and natural ecosystems, in addition to socio-economic and environmental impacts?			Not relevant		
10.2 Are management activities,			Not relevant		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
including harvesting cycles and verification programmes chosen to avoid a systemic verification of peaks in carbon stocks?					
10.3 Have the project participants indicated whether they choose to account using ICERs or tCERs as defined in Section K, paras 38 – 60 of Decision 19/CP.9			Not relevant		
10.4 Has the project undergone international public consultation for a period to 45 days?			Not relevant		
10.5 Have selected carbon pools been be ignored in accordance with the conditions described in Para 21 of Decision 19/CP.9 and does the project avoid double counting?			Not relevant		
10.6 Has a project lifetime of 20 years renewable three times or 30 years been selected?			Not relevant		
10.7 Does the monitoring plan take account of issues related to biodiversity and natural ecosystems identified elsewhere in the PDD?			Not relevant		
10.8 Is the application of ICERs and tCERs accounting regimes consistent with Sections J and K and Decision 19/CP.9?			Not relevant		
10.9 Note Appendix B highlighting the differences in the PDD, the PDD template for AR projects and the guidelines, available at http://cdm.unfccc.int/Reference/Documents			Not relevant		

Table 11 Additional requirements for SSC AR projects

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
11.1 Is the project an eligible SSC AR project?			Not relevant		
11.2 Is the project part of a debundled regular AR CDM activity?			Not relevant		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
11.3 Has international stakeholder consultation period lasted 30 days?			Not relevant		

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Annex 3 FINDINGS OVERVIEW

FINDINGS FROM VALIDATION OF ENERGY EFFICIENCY MEASURES AT CEMENT PRODUCTION PLANT

Project No [CDM.Val0044]

Each Table below represents a finding from the validation assessment. The findings are numbered consecutively, approximately in the order that they have been identified.

Description of table:

Type	Findings are either New Information Requests (NIR) or Corrective Action Requests (CAR). CARs are items that must be addressed before a project can receive a recommendation for registration. NIRs may lead to the raising of CARs. Observations are included at the end and may or may not be addressed. They are primarily to act as signposts for the verifying DOE.
Issue	Details the content of the finding
Ref	refers to the item number in the Validation Protocol
Response	Please insert response to finding, starting with the date of entry.

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

Please note that this is an open list and more findings may be added as validation progresses.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
1	CAR	No letter of approval from Indian DNA available	1.2
Date: 02-07-2006 [Comments] The copy of DNA letter for the same has been made available with the DOE			
Date: 02-07-2006 [S Kumar] Host country approval has been obtained. The CAR 01 can be closed out. [Acceptance and close out] OK, closed out			

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
2	NIR	Some changes to the PDD template were identified	1.6 & 8.1.1
Date: 02-07-2006 [Comments] The changes has been accommodated and modified PDD has been sent along with this response sheet			
Date: 02-07-2006 [S Kumar] The revised PDD has been received but still found few not acceptable changes in template.			
Date: 26-03-2007 [S Kumar] The revised PDD has been received with fulfilling the requirement and the NIR02 can be closed out.			

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
3	CAR	It is not possible to verify the information. Direct links and documents are missing.	1.10

Date: 02-07-2006

[Comments] The detailed links are provided and hard copy of the content are made available with DOE. The Excel sheet is attached with the PDD and the data is published on www.cea.nic.in, which is a Government of India, regulatory body.

Date: 26-03-2007 [S Kumar]

The authenticated link

<http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm> for regional grid data base has been verified. The minutes of board meeting has been submitted to the validator and verified the CDM consideration during project conception stage. The CAR 03 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
4	CAR	Step 1: energy baseline: Energy baseline model is not transparent. Open questions: Are the calculations for energy savings reliable? Is the model conservative? Are losses taken into account?	2.3.1 and 2.3.2

Date: 02-07-2006

[Comments] The project components reduce electricity consumption across individual project boundary. The specific electricity consumptions are carried out based on series of power consumption readings (kWh/hour) and corresponding production data duly authenticated by the plant authority. The specific baseline energy consumption of the project boundary has been calculated based on the above. The reflection of this energy consumption is noticed in overall specific energy consumption also. This figure is a part of overall energy cost and overall production figure that are reflected in the statutory audit report.

The energy consumption norm in Indian cement sector (and for that purpose, the world over also) is represented by kWh/t of clinker (or cement) production. The baseline calculation is followed by the same norm so that the changes in consumption can be easily identified.

As per the definition of baseline, it is the emission that would have occurred in absence of the project activity. The existing systems in absence of the project activity would be consuming the same level of energy to process output (to be noted that the plants are old and production has been stabilised so that scale factor do not arise) that is considered as baseline as per cement industry practice in India. The same can be verified for project activities during verification visit by putting the condition

The present energy consumptions are based on readings that can be verified at any point for any duration of time in front of verifiers in actual plant running conditions. This evidently covers any losses (if at all) and therefore the emission reduction estimation is flawless. This when compared with the baseline energy consumption provides the savings in energy consumption and conservative.

Date: 02-07-2006 [S Kumar]

The above explanation is satisfactory and makes clear the baseline selection. The losses if any

can be checked during verification. The CAR 04 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
5	CAR	Step 2a: carbon intensity of Grid, Choice of grid: Please provide objective evidence for site visit	2.3.3 to 2.3.5

Date: 26-03-2007

[Comments] The same has been modified with the recent one available at the time of PDD preparation and regional grid is being used for baseline factor now.

Date: 26-03-2007 [S Kumar]

The project developer revised the same in PDD. The revised PDD has been received and reviewed for the change made. The CAR 05 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
6	CAR	Please provide tables B 3.1, B 3.2, B 3.3 and B 3.4	2.3.6

Date: 26-03-2007

[Comments] The tables are removed as new baseline data considering CEA values are to be considered now.

Date: 26-03-2007 [S Kumar]

The authenticated link

<http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm> for regional grid data base has been verified. The CAR 06 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
7	CAR	Calculations in enclosure IV are not traceable (pdf), no digital spreadsheets available for checking, it is to time consuming to rewrite the spreadsheets. Please indicate how losses are taken into account	2.3.7

Date: 26-03-2007

[Comments] The excel sheet is attached herewith.

Date: 26-03-2007 [S Kumar]

The spread sheet has been received and verified with

<http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm> for regional grid data base. The CAR 07 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
8	CAR	The project makes use of IPCC 1996 emission factors for Sub-Bitumen coal and for natural gas (dry). It is not shown if the EFs are representative for the burned fuels.	2.3.8

Date: 26-03-2007

[Comments] The CEA baseline are considered now which eliminates all variability.

Date: 26-03-2007 [S Kumar]

The spread sheet has been received and verified with

<http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm> for regional grid data base. The CAR 08 can be closed out.
[Acceptance and close out] Ok, closed out.

Date: 2005-12-06 Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
9	CAR	Please provide objective evidence that the most recent 20% of existing plants on the grid are used.	2.3.9

Date: 26-03-2007

[Comments]] The CEA baseline are considered now

Date: 26-03-2007 [S Kumar]

The spread sheet has been received and verified with

<http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm> for regional grid data base. The CAR 09 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06 Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
10	NIR	Is second hand equipment used in the project (14 measures) ?	2.5 and 4.4

Date: 02-07-2006

[Comments] The purchase orders including payment details from new equipment are provided with DOE

Date: 02-07-2006 [S Kumar]

The same has been verified and found the new equipment installed on the site and has no transboundary impact. The NIR 10 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06 Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
11	CAR	Determination of emission reductions is not in accordance with the methodology because the baseline is not in line with the methodology	2.6

Date: 02-07-2006

[Comments]] The baseline emission is based on the energy consumption across the project boundary prior to the project activity. The difference in baseline scenario and present scenario is the emission reduction in the plant. This has been calculated on the basis of specific energy consumption based on cement production (The basis is if the plant produces one unit (ton) of cement what is the energy consumption today and what would have been in previous scenario for the same production and the difference in two is the energy saving for the project activity. This is important here to mention that there is no significant change in material quality as the plant raw material source is same and it produces only one grade of clinker). The baseline is the energy use (kWh/ton x tonnes of clinker produced) of the existing equipment that was replaced in the case of retrofit measures.

Date: 02-07-2006 [S Kumar]

The baseline emission is based on the energy consumption across the project boundary presently and prior to the project activity. The baseline is conservative and any variation in the final emission reduction can be taken care of during verification. The CAR 11 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06 Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
12	CAR	The discussion on additionality is not supported with documented evidence and literature is not available. Direct Links to official documents	3.2.1 to 3.2.10

	<p>are missing.</p> <p>There is no information about</p> <ul style="list-style-type: none"> • investment sum and ratio of project income (less costs through energy saving over crediting period) to investment income • capacity expansion plan in relation to this CDM project • the experience in other cement plants (cluster) which use similar technology • Financing • similar projects implementation without financial assistance • the state of the art of the technology or other more recent technologies • the criteria for the choice of the equipment • life cycle of the replaced equipment 	
<p>Date: 02-07-2006</p> <p>↳ [Comments] investment sum and ratio of project income (less costs through energy saving over crediting period) to investment income</p> <p>The entire investment along with the purchase orders are provided with the DOE. However, the investment-benefit analysis has not been mentioned in the PDD as the project proponent has followed the barrier analysis. However, an excel sheet of the same is attached herewith for your reference.</p> <p>↳ capacity expansion plan in relation to this CDM project</p> <p>There were no specific expansion plans related to these modifications. They were aimed at improving environment only. It can be well understood that the financial benefit from these projects are insignificant compared to cement prices or market fluctuations and have no business implications or in decision making.</p> <p>↳ the experience in other cement plants (cluster) which use similar technology</p> <p>The interview can be arranged if asked for. But no such documents are accessible directly. But No other cement plant in the cluster has come up with similar energy efficiency projects that are available on the unfccc website till date.</p> <p>↳ Financing</p> <p>Internal accrual</p> <p>↳ similar projects implementation without financial assistance</p> <p>no such information the project proponent has</p> <p>↳ the state of the art of the technology or other more recent technologies</p> <p>the technologies are state of the art. Other recent technologies are not in the knowledge of project proponents. In fact BCL –Chittorgarh is a leading cement manufacturer in the cluster.</p> <p>↳ the criteria for the choice of the equipment</p> <p>Energy efficiency improvement</p> <p>↳ life cycle of the replaced equipment</p> <p>Minimum is 15 years. However, depending on site conditions, few can be replaced (incurring additional investments)</p>		
<p>Date: 02-07-2006 [S Kumar]</p> <p>The above information is self explanatory and verified during site visit. The project had been facing technology & prevailing practice barriers and not investment barrier. Investment was not the decision making criteria but risk of failure was. The CDM revenue would certainly assisted in mitigating risk and overcoming these barriers. There was huge uncertainty about project's outcome that has been described in the additionality section. The CAR 12 can be closed out.</p> <p>[Acceptance and close out] Ok, closed out.</p>		

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
13	CAR	Is similar technology used at other plants in the cluster without financial assistance through certified emission reductions?	3.4
Date: 02-07-2006 [Comments] Till date no such projects are available on the unfccc website for international stakeholder's comments.			
Date: 26-07-2007 [S Kumar] No evidence has been found which shows the project activity is a common practice in the region. [Acceptance and close out] Ok, closed out			

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
14	CAR	The selection of plants is not transparent and direct links to objective evidence is not available.	4.2
Date: 02-07-2007 [Comments] The cement cluster approach is publicised by Cement Manufacturing Association, and widely accepted in Indian Cement industries. The major plants in the clusters are taken for consideration			
Date: 26-03-2007 There were four major plants in year 2000 in the cluster. The initiative for energy efficiency improvements was not observed common at that time as discussed with other plants. The CAR 14 can be closed out. [Acceptance and close out] Ok, closed out.			

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
15	NIR	<p>Some details of the monitoring methodology are missing, for example pre-project stage historical data: fixed value or prediction with time series analysis, or how to monitor the performance of newly adopted measures, inclusive decrease of efficiency over time?</p> <p>It is general explained that meters will be state of the art and calibrated. Support by objective evidence is missing.</p> <p>It is not transparent and explained which meters will be used for the metering of each measure (14 measures between 2000 and 2003 are listed).</p>	4.3.1 to 4.3.3
Date: 02-07-2006 [Comments] A) Generally the efficiency of electrical devices' deterioration rate is very slow and difficult to apprehend. However, even deteriorated, the baseline figure will provide conservative estimate only. In case of deterioration of efficiency, the energy consumption would increase resulting in lesser emission reduction. The same can be taken care of during annual verification. B) The earlier meters are getting replaced with new meters/ are getting calibrated. The calibration certificates would be produced during verification visit. However, the old meters are calibrated and any inaccuracy, if any would be adjusted during verification visit. C) The same has been included in the modified PDD itself.			
Date: 2006-04-04 [Sanjeev Kumar] The baseline has been calculated on specific energy consumption within project boundary. Any deterioration in efficiency would result in higher energy consumption and less emission reduction. This can be taken care of during verification. In case of any error in meters, the same will be			

deducted from verified emission reduction. The NIR 15 can be closed out. Obs (01) is raised.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
16	CAR	No procedures for QA/QC available	4.5

Date: 02-07-2006

[Comments] [One separate document has been provided to the validator for the same.](#)

Date: 02-07-2006 [S Kumar]

GHG performance procedure has been obtained. The company is ISO certified and have measuring system in place. The CAR 16 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
17	NIR	No explanation how to ensure that the project results in sustainable development and no negative environmental impacts take place.	5.1 to 5.1.4

Date: 02-07-2006

[Comments] [The project is a small scale energy efficiency improvement project. There are no negative impacts of such projects in any angle expect possibly the use of discarded equipment in case of energy efficient fans and motors. However, they, basically ferrous in constitution, are having use of recycling.](#)

[For the sustainable development issues, the benefit from the project activity cannot be contributed to any specific activities barring the positive environmental impact and reduced electricity \(primary resource for growth in a country like India\) consumption resulting into sustainable cement production. However, the philanthropic activities taken care of by the BCL- management show the responsibility of the corporate to social concern also. The documentary evidence of the same has been forwarded to DOE also.](#)

Date: 02-07-2006 [S Kumar]

There is no negative environmental impact expected from the project activity. The PP is socially responsible corporate and contributing to the development in the reason. The evidences have been obtained. The NIR 17 can be closed out.

[Acceptance and close out] Ok, closed out

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
18	NIR	No verbal description of management system and responsibilities	5.2.1 - 5.2.2

Date: 02-07-2006

[Comments] [added in the monitoring plan of modified PDD](#)

Date: 2006-04-04 [Sanjeev Kumar]

The same is added in the PDD and verified. The NIR 18 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
19	NIR	Procedures for training, emergency preparedness, calibration, maintenance of monitoring equipment, monitoring, measurement, reporting, records handling, adjustments, uncertainties, review, internal audits and corrective actions are not available	5.2.3- 5.2.13

Date: 02-07-2006
[Comments] Made available with the validators
Date: 02-07-2006 [S Kumar] One separate document for GHG performance procedure which meets all the requirements has been obtained. The NIR 19 can be closed out.
[Acceptance and close out] Ok, closed out.

Date: 2005-12-06		Raised by: Dr. Jochen Gross	
No.	Type	Issue	Ref
20	NIR	Adverse effects like noise or vibrations are not discussed	6.3
Date: 02-07-2006			
[Comments] Not significant, site visit by the DOE ensures the same			
Date: 02-07-2006 [S Kumar] The noise or vibrations are controlled and within plant premises. The NIR 20 can be closed out.			
[Acceptance and close out] Ok, closed out			

Date: 2005-12-06		Raised by: Dr. Jochen Gross	
No.	Type	Issue	Ref
21	NIR	Transboundary impacts are not discussed explicit. Only benefits are listed	6.4
Date: 02-07-2006			
[Comments] Not significant, site visit by the DOE ensures the same			
Date: 02-07-2006 [S Kumar] There was no second hand equipment being used at the site. This has been verified with purchase order of newly equipments. The NIR 21 can be closed out.			
[Acceptance and close out] Ok, closed out.			

Date: 2005-12-06		Raised by: Dr. Jochen Gross	
No.	Type	Issue	Ref
22	NIR	The documentation of the stakeholder consultation is not transparent and not as detailed as required	7.1
Date: 02-07-2006			
[Comments] Site visit by the DOE ensures the same, the documents are provided with the DOE			
Date: 2006-04-04 [Sanjeev Kumar] For energy efficiency projects resulting into electricity savings whose effects are limited, are having limited stakeholders also and they have been identified and communicated in writing and written responses have been collected. There is no adverse comment identified. This has been verified during site visit. The NIR 22 can be closed out.			
[Acceptance and close out] Ok, closed out.			

Date: 2005-12-06		Raised by: Dr. Jochen Gross	
No.	Type	Issue	Ref
23	NIR	It is not clear which appropriate media have been used to invite comments by local stakeholders	7.2
Date: 02-07-2006			
[Comments] Site visit by the DOE ensures the same, the documents are provided with the DOE			
Date: 02-07-2006 [S Kumar] The communication letters with stakeholders were obtained to verify the transparency in the process. The NIR 23 can be closed out.			

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
24	NIR	There is no information available about the requirement of stakeholder consultation process by law	7.3

Date: 02-07-2006

[Comments] [Site visit by the DOE ensures the same,](#)

Date: 02-07-2006 [S Kumar]

The local stakeholder consultation process is conducted by pollution control board prior to give the consent to establish or operate a project. However, the same has also been conducted by the project developer however this was not mandatory by law for them. The NIR 24 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
25	NIR	A summary of the stakeholder comments received is not provided	7.4

Date: 02-07-2006

[Comments] [provided with Modified PDD](#)

Date: 02-07-2006 [S Kumar]

The summary has been provided in the modified PDD obtained. There is no adverse comment identified. The NIR 25 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
26	NIR	No support with objective evidence that all stakeholder comments have been taken into account	7.5

Date: 02-07-2006

[Comments] [Site visit by the DOE ensures the same, the documents are provided with the DOE](#)

Date: 02-07-2006 [S Kumar]

The evidences have been obtained. There is no adverse comment identified. The NIR 26 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
27	CAR	Editorial: Several changes and modifications to PDD template were found.	8.1.1

Date: 02-07-2006

[Comments] [Revised PDD is enclosed](#)

Date: 2006-04-04 [Sanjeev Kumar]

The changes have been incorporated in revised PDD. The NIR 27 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06

Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
28	NIR	Not all specific requirements are addressed and justified in the PDD	8.1.2

Date: 02-07-2006

[Comments] [All the requirements are addressed in revised PDD.](#)

Date: 2006-04-04 [Sanjeev Kumar]
The revised PDD meets all the requirements of PDD. The NIR 28 can be closed out.
[Acceptance and close out] Ok, closed out.

Date: 2005-12-06 Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
29	NIR	The address and the geographical coordinates are not given in the PDD	8.1.4
Date: 02-07-2006 [Comments] Provided with modified PDD			
Date: 29-03-2007 [S Kumar] The coordinates has been provided in the revised PDD. [Acceptance and close out] Ok, closed out.			

Date: 2005-12-06 Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
30	NIR	It is not clear if the Project design engineering reflect current good practice. The technology of the described 14 measures is of late ninety's. No description of possible alternatives or technological barriers due to existing equipment from 1965	8.2.1
Date: 02-07-2006 [Comments] The alternative was the continuation with Pre project scenario that was most likely and not faced any barrier. The revised PDD has more information.			
Date: 02-07-2006 [S Kumar] The project activity is the implementation of recent available technologies with older mill. There had been barrier due to prevailing practice. The most likely alternative was verified as the continuation of previous scenario. The Minutes of meetings held before the project implementation has been received and reviewed for CDM consideration prior to project implementation to go ahead with the project activity. The NIR 30 can be closed out. [Acceptance and close out] Ok, closed out.			

Date: 2005-12-06 Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
31	NIR	It is not clear if the technology of 14 measures is common in Rajasthan and it is not transparent how the energy saving as evidence for "a significant better performance" is calculated.	8.2.2.1 to 8.2.2.3
Date: 02-07-2006 [Comments] The annual technology conferences in the cluster including publications of the technologies (not all) provide objective evidence			
Date: 02-06-2006 [S Kumar] There were four major plants in year 2000 in the cluster. The initiative for energy efficiency improvements was not observed common at that time as discussed with other plants. The energy efficiency improvements were evident with the plant data during site visit and can be said overall better performance of the system. The NIR 31 can be closed out. [Acceptance and close out] Ok, closed out			

Date: 2005-12-06 Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
32	NIR	Technological alternatives are not described. It is not clear if the project technology is likely to be substituted by other or more efficient technologies within the project period	8.2.3
Date: 02-07-2006 [Comments] The same has been explained with the local DOE. The equipment were not to be			

substituted in the natural cycle			
Date: 2006-04-04 [S Kumar]			
The technology being used in the plant is the recent available one and this is not likely to be substituted in next four years of crediting period left. The NIR 32 can be closed out.			
[Acceptance and close out] Ok, closed out.			

Date: 2005-12-06 Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
33	NIR	It is not clear if the technology leads to the requirement of additional training. Trainings for the employees on the project technology were not explained	8.2.4

Date: 02-07-2006

[Comments] [Training Plan is attached](#)

Date: 02-07-2006 [S Kumar]

The training procedure has been included in GHG performance procedure. The NIR 33 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06 Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
34	NIR	It is not clear how the project of 14 specific measures interacts with the whole plant. Are there adverse effects on the whole plant?	8.2.5

Date: 02-07-2006

[Comments] [No. The Site visit by the DOE ensures the same](#)

Date: 02-07-2006 [S Kumar]

As in energy efficiency measures adverse effect reflects first into specific consumption as any change would impact energy consumption pattern too that can be verified in initial verification along with other environmental parameters and process parameters. The less/more electricity consumption can be taken care during verification. Any adverse effect of project activity on whole process is rare and if any can be taken care of. The NIR 34 can be closed out.

[Acceptance and close out] Ok, closed out.

Date: 2005-12-06 Raised by: Dr. Jochen Gross

No.	Type	Issue	Ref
35	CAR	There are different information about crediting period and operational lifetime.	8.2.3 and 8.2.5

Date: 02-07-2006

[Comments] [Site visit by the DOE ensures the same, clarifications provided](#)

Date: 29-03-2007

The project life time is likely to be more than 15 years and the PP claimed fixed ten year crediting period. The information is ok in revised PDD. The CAR 35 can be closed out.

[Acceptance and close out] Ok, closed out.

Observations (01):

The calibration of instruments is to be ensured during verification and the error, if any should be adjusted with actual value.