Validation Report

Report for:

Sichuan Yongxiang Co., Ltd.

Validation of CDM project for

Sichuan Carbide Calcium Residues Based Cement Plant Project in Leshan City

LRQA Reference	:	QAC0071198 version 04
Date	:	20 February 2009
Work carried out by	:	Ketan S. Deshmukh Albert Chen Qisheng Ding Wen Bai Ming
Work verified by	:	Prabodha C. Acharya A. V. Shivaramakrishnan Antriksh Kumar Anne-Marie Warris

LRQA
Measure the Difference

LRQA
Measure the Difference

Contents

1 Executive Summary

Lloyd's Register Quality Assurance Limited has been contracted by KOE Environmental Consulting, Inc., representing the project participants (PP), to undertake validation of the proposed project activity "Sichuan Carbide Calcium Residues Based Cement Plant Project in Leshan City". The validation has been performed by document review based on the project design document (Version 01 dated 31/10/2007 and subsequent revisions with the latest being at version 12.1 dated 17th February 2009), follow-up interviews with the stakeholders and resolution of outstanding issues and issuance of the validation report.

The project intends to reduce greenhouse gas (GHG) emissions by substituting conventional carbonated calcium source of limestone and clay with non-carbonated calcium source of carbide calcium residues (CCR) for clinker production in the newly built cement plant.

The fulfilment of the requirements as set forth in the Article 12 of the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC), the modalities and procedures for a CDM and relevant decisions of the Conference of the Parties serving as meeting of the Parties to the Kyoto Protocol (COP/MOP) and the Executive Board of the CDM (CDM-EB) has been evaluated and the conformance to the validation requirements were confirmed based on the given information. A risk based approach was taken to conduct the validation and corrective action requests (CARs) and clarifications (CLs) were raised for relevant actions by the PP.

The validation team is of the opinion that the proposed project activity meets all the relevant UNFCCC requirements for the CDM as well as the host country's national requirements, and if implemented as designed is likely to achieve the emission reductions and contribute to the sustainable development of the host country. Therefore LRQA requests the registration of "Sichuan Carbide Calcium Residues Based Cement Plant Project in Leshan City" to the CDM Executive Board as a CDM project activity.

Lloyd's Register Quality Assurance Ltd
Hiramford
Middlemarch Office Village
Siskin Drive
Coventry CV3 4FJ
United Kingdom

Registered office:
Lloyd's Register
71 Fenchurch Street
London EC3M 4BS
United Kingdom

CARs	Corrective action requests
Ca(OH)2	Calcium hydroxide
CaO	Calcium Oxide
CaCO3	Calcium Carbonate
CCR	Calcium Carbide Residue
CDM	Clean Development Mechanism
CDM-EB	Executive Board of Clean Development Mechanism
CDM M&P	Modalities and procedures for a clean development mechanism
CER	Certified Emission Reduction
CLs	Clarifications
CO2	Carbon-di-oxide
COP/MOP	Conference of the Parties serving as meeting of the Parties to the Kyoto Protocol
DNA	Designated National Authority
EIA	Environmental impacts assessment
EPA	Environmental Protection Agency
FSR	Feasibility Study Report
GHG	Greenhouse gas
H2O	Water
IPCC	Intergovernmental panel on climate change
KP	Kyoto Protocol of the United Nations Framework Convention on Climate Change
LoA	Letter of approval
LR	Lloyd's Register
LRQA	Lloyd's Register Quality Assurance Limited
NGO	Non governmental organization
NPV	Net Present Value
PDD	Project design document
PP	Project participant
PVC	Poly Vinyl Chloride
tce	tonnes of coal equivalent
tCO_{2e}	Tonne of carbon dioxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change

2 Introduction

The project participant Sichuan Yongxiang Co., Ltd. represented by KOE Environmental Consulting, Inc. has contracted with Lloyd's Register Quality Assurance Limited (LRQA) to undertake validation of the proposed project activity "Sichuan Carbide Calcium Residues Based Cement Plant Project in Leshan City". This report summarises the findings through the validation process that has been conducted on the validation requirements of the CDM.

The team carrying out the validation and the request for review action included as relevant to the activity the following:.

Ketan S. Deshmukh	LRQA Asia Management	Team Leader, Lead Validator CDM
Albert Chen	LRQA China	Team Member, Validator CDM
Qisheng Ding		External Sector Expert
Wen Bai Ming		External Sector Expert
Prabodha C. Acharya	LRQA India	Technical Reviewer
A. V. Shivaramakrishnan	LRQA India	Sector Expert to Technical Reviewer
Antriksh Kumar		External Sector Expert to Technical Reviewer
Anne-Marie Warris	LRQA Ltd.	Decision Maker

Personnel being engaged in a CDM project validation are qualified based on the established procedures of LRQA to assure the resource requirements that satisfy all the requirements of competence criteria for a DOE under CDM CDM-ACCR-06. LRQA is accredited/designated as an operational entity and holds the full responsibility on decision-making regarding the validation in accordance with the accreditation requirements of the CDM-EB. The certificate of appointment of the team personnel is attached to this report.

2.1 Objective

Validation is the process of an independent third party evaluation of a project activity against the requirements of the CDM as set out in the Article 12 of the Kyoto Protocol, the CDM M&P, the present annex, subsequent decisions made by the COP/MOP and CDM-EB, and the other rules applicable to the proposed project activity including the host country's legislation and its specific requirements for sustainable development on the basis of the PDD.

2.2 Scope

The scope of validation is an independent and objective review of the project design. Review of the PDD is conducted against the requirements of KP, the CDM M&P and relevant decisions of the COP/MOP and the CDM-EB. LRQA follows a risk-based approach in the validation focusing on the identification of significant risks for project implementation and generation of CERs. Validation is not meant to provide any consulting towards the PP, however, the corrective actions requests (CARs) and clarifications (CLs) might provide input for improvement of the project

design. A validation conclusion shall become final subject to the decision maker's review and the review by the LRQA Ltd.

2.3 GHG Project Description

The project activity is to build a calcium carbide residue (CCR) based cement plant that employs new dry precalcination clinker production.

The objective of the proposed project is to make lower-emission cement through substituting conventional carbonated calcium source of limestone and clay with non-carbonated calcium source of CCR for clinker production in the newly built cement plant.

In the proposed project, CCR will be utilized as the raw mix for clinker production. The CCR is mainly made up of $Ca(OH)_2$ and in theory no CO_2 generated during its thermally decomposing process, therefore compared with conventional raw material of limestone and clay for clinker production which is mainly comprised of $CaCO_3$, displacing the conventional carbonated calcium source in the raw mix by using CCR will significantly avoid CO_2 emission in clinker-making process.

When the proposed project is put into operation, it is expected to realize clinker production of 600,000 tonnes and lower-emission cement production of 759,400 tonnes per year as well as annual GHG emission reduction of 224,543 tCO_2.

3 Methodology

3.1 Review of documents

The validation is performed primarily based on the review of the project design document (PDD) and the other supporting documentations. The PDD Version 01 dated 31/10/2007 was initially reviewed and LRQA provided the first version of the validation findings log to PP on 7 March 2008. Subsequent versions of the PDD were issued by the PP in order to close the findings. The latest version of the PDD being version 12.1 dated 17 February 2009.

Various documents, some received from the PP and others obtained as part of LRQA's independent research were reviewed by LRQA and are listed in the Appendix B.

3.2 Follow-up interviews

Follow-up interviews with the stakeholders and field survey were conducted to the parties and in the schedule as below.

3 February 2008	Sichuan Yongxiang Co., Ltd. KOE Environmental Consulting, Inc. Representatives of local community Local government officials Local Cement Association official
4 February 2008	Sichuan Yongxiang Co., Ltd. KOE Environmental Consulting, Inc.

Jinding Cement Co. Ltd.

26-27 July 2008 KOE Environmental Consulting, Inc.

17-18 February 2009 KOE Environmental Consulting, Inc.

The list of persons interviewed is shown in the Appendix C.

3.3 Resolution of clarification and corrective action requests

Findings identified in the process are indicated under the titles Corrective Action Requests (CARs), Clarifications (CLs) or Forward Action Request (FAR). Each finding is numbered and preceded by either of CAR, CL or FAR. CARs and CLs require the PP to take relevant actions. Criteria for judging items as CAR , CL and FAR are as follows:

Corrective Action Request (CAR):
(a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
(b) The CDM requirements have not been met;
(c) There is a risk that emission reductions cannot be monitored or calculated.

Clarification (CL) Request:
If information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met

Forward Action Request (FAR): A finding raised to highlight issues related to project implementation that requires review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration.

3.4 Internal quality control

The technical review by a qualified person independent from the validation team was conducted on the draft validation report prior to the submission to the PP. After consideration of the corrective actions by the PP, the final validation report was reviewed by the technical reviewer and the authorized decision maker before requesting registration of the project activity.

4 Validation findings

The findings of the validation are stated in the following sections. The further detail of each finding is shown in the Validation Findings Log.

The findings are structured based on the main validation scopes as follows.

- Participation requirements
- General description
- Baseline methodology
- Emission reductions
- Monitoring methodology and monitoring plan

- Duration of the project activity / crediting period
- Environmental impacts
- Stakeholders' comments

4.1 Participation requirements

A CDM project shall be approved by the Parties involved. The host Party of the proposed project is the People's Republic of China. China has ratified the Kyoto Protocol 30th Aug 2002 and the National Development and Reform Commission has been designated as the national authority for the CDM DNA.

The Annex 1 project participant is PEAR Carbon Offset Initiative, Ltd. from Japan. Japan has ratified the Kyoto Protocol on 4th June 2002 and the Liaison Committee for the Utilization of the Kyoto Mechanisms has been designated as the national authority for the CDM DNA. The parties involved for this project are People's Republic of China and Japan.

Initially, one CAR was raised:

CAR 1
It was noted that the project has not received the approval from the Parties involved. The written approval shall be submitted before completion of the validation process.

The Letter of Approvals were presented by the PP and noted. They contain confirmation with respect of voluntary participation and contribution to the sustainable development of the host country. The Letters of Approvals were noted in line with the Clarifications on elements of a written approval.

The LOA issued by China DNA was confirmed through visit to the following website: http://cdm.ccchina.gov.cn/web/NewsInfo.asp?NewsId=2596.
It was noted that the approval was effected on 25th April 2008.

In an effort to confirm the approval by the DNAs, the validation team visited the website, www.kyomecha.org/e/info.html#list. This list was however only updated for approvals granted until June 10, 2008. The approval date on the LoA Japan submitted by the PP to LRQA being the 4th July 2008 as the date of approval. The validation team therefore sought to confirm the Japan DNA's LoA through the LRQA Japan office. On reviewing of the application by LRQA Japan, a confirmatory email was received by the validation team.

The finding was therefore closed.

4.2 General description

The project activity is to build a calcium carbide residue (CCR) based cement plant that employs new dry pre-calcination clinker production line with a capacity of 2,000 tonnes of clinker per day. The technology used is new dry precalcination clinker production (new dry process) technology. The utilisation of CCR in clinker production was confirmed as an innovation by the Hefei Cement Research and

Design Institute through their research paper titled, "Design and Commission with new dry process technology using CCR as raw materials", Year 2006.

LRQA researched the production of clinker using alternative materials other than limestone. According to certain governmental publications – China Cement Industry Recycle Economics Development Strategy and Potential Analysis, till 2002 the annual cement sale reached 725 million tonnes, and the estimated limestone consumption was close to 800 million tonnes in the year. Considering that the theoretical rate between cement production and calcium source is nearly 1~1.1, which means limestone is nearly the only source of calcium in China. Our research confirms that limestone as calcium source is the most common given that it has been the most traditional raw material for several decades.

It is not easy to realize product clinker by new dry process line using CCR as material. The patent technology of Hefei Cement Research & Design Institute conducted a pilot run of CCR use in clinker production in Shandong Province in 2005. The proposed project is the second project designed based on the experience by Hefei Cement Research & Design Institute and the first one in Sichuan province.

Conventional raw material of limestone and clay when used for clinker production, a thermo chemical decomposition reaction takes place as under:

$CaCO3 \rightarrow CaO + CO2.$

In the proposed project activity, about 550,000 tonnes of CCR will be utilized as the raw mix for clinker production per year. The CCR is mainly made up of $Ca(OH)_2$ and in theory no CO_2 is generated during its thermally decomposing process. CCR thermally decomposes at above 580 deg C and generates water through the following reaction:

$Ca(OH)2 \rightarrow CaO + H2O.$

Displacing the conventional carbonated calcium source in the raw mix by using CCR will thereby significantly avoid CO_2 emission in clinker-making process.

As part of the validation, the process description provided above was confirmed with the FSR document of the project activity and through the experts in the validation team. The FSR document was written by –Hefei Cement Research & Design Institute and carries the approval from the local government (Sichuan Province Economic Commission). China has a system of accrediting agencies conducting FSR who are responsible and risk their accreditation in the event of fallacies in the reporting. As a result, the FSR provides a reliable source of information and has been referenced at various places within this report.

LRQA paid particular attention to EB38 Decision 54 with respect of the following elements:

(a) FSR has been the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision.

Following the management decision on 12th Jan 2007 wherein the CDM income was considered, the government sanctioned the approval of the FSR on 23rd Jan 2007. Without, CDM, the project was not financially viable and would not have met the government's approval.

(b) The values used in the PDD and associated annexes are fully consistent with the FSR, and where inconsistencies occur the DOE should validate the appropriateness of the values.

As part of the validation, the validation team confirmed that the values used in the FSR with respect of material consumption and costs matched with those used in the financial analysis sheet and the Emissions Reduction calculation sheet. Where discrepancies were identified, appropriate CARs/ CLs were raised and on confirming the actions by the PP, these were closed out.

(c) On the basis of its specific local and sectoral expertise, confirmation is provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision.

As part of the validation, LRQA with the help of experts confirmed that the input data with respect of the consumption of materials used in the FSR reflect the standards used in the industry.

LRQA confirmed that the chlorides content of the raw mix will be 0.04% which exceeds the acceptable limit of 0.015%. Excess chlorides will hamper the normal functioning of the kiln. LRQA asked the PP to clarify the mechanism of addressing this excess chloride. PP provided the following two methods for handling this issue:

1. Upstream control – The chlorides can be controlled upstream at a point where it is generated in the PVC plant process through use of recycled water. The recycled water can be limited to an extent that the chlorides in the raw mix do not exceed 0.015%. Upstream control may include removal of chlorides from the recycled water through an ion-exchange mechanism.

2. Bypass system – A portion of the gases from the kiln is vented out to allow the chlorides to escape.

LRQA confirmed that both the approaches are plausible. The upstream control of chlorides does not impact the Emission Reduction calculation, however, the control of chlorides through use of a bypass system will affect the ER calculation due to excess consumption of energy (coal). This should get accounted as part of project leakage.

In section A.4.3 of PDD ver 12.1, the PP concluded on the option to control chlorides upstream at the PVC process plant. FAR 21 has been raised to confirm the

management of chlorides and whether it affects ER calculation during the first verification of the project activity.

The project activity contributes to sustainable development of the host country by avoiding current CCR disposal of open dumping (that causes land pollution) and reducing GHG emissions compared to a business-as-usual scenario. As part of the site visit, LRQA also confirmed employment of the local people envisaged as part of the operation and maintenance of the plant.

Science and Technology Outline for Sustainable Development presents an overview of the China government's vision towards achieving sustainable development. The document urges to be guided by the "Three Represents theory" surrounding population, resource and environment.

The project activity relates to various elements of the guidelines towards sustainable development by contributing through:

(i) achieving the objectives of building technological innovation compatible with the needs for sustainable development;
(ii) principle of speeding up the commercialization of R&D findings and,
(iii) addressing the international convention on global climate change.
(iv) Other elements noted as part of the site visit conducted included employment to the local people, better handling of the CCR waste that would have been otherwise land dumped.

On basis of the referenced document, LRQA confirms the contribution of the project activity towards sustainable development.

Two Project Participants, both private entities (Project Owner-Sichuan Yongxiang Co. Ltd. & Buyer-PEAR Carbon Offset Initiative Ltd.) are referenced in the PDD. LRQA verified their status as PP through an agreement that was made available (classified as confidential), the respective PP name being listed on the LOA issued by the respective host party and the availability of Modalities of Communication signed by the two parties.

Initially, the following CL was raised:

CL 2
Figure 1—project location (A4.1.4) should be given in English translation.
Figure 2—production process (A4.3) should be given in English translation. Also, the latitude and longitude co-ordinates for the project site that serves as a unique identification has not been provided.

These were later corrected in the revised PDD and therefore this finding was closed.

Funding for the project activity was noted through the funds of the private entity and a loan from the bank. As such, it was confirmed that there is no public funding/ Diversion of Official Development Assistance for the project activity.

4.3 Baseline methodology

The project activity applied the approved baseline and monitoring methodologies:

AM0033 (version 02) – "Use of non-carbonated calcium sources in the raw mix for cement processing". The methodology is valid for seeking registration until 13 August 2008.

1. The project activity partially substitutes limestone with calcium carbide residue that is obtained from the neighbouring PVC plant. Also, emissions reductions relate to CO2 generated from decarbonisation of raw materials (limestone) and are not related to CO2 emissions generated from the fossil fuel burning.

2. Type and quality of clinker in the baseline and the project case remains the same. It was confirmed that the united standard in China (GBT21372-2008) that provides specification with respect of clinker quality will be used to demonstrate that the clinker quality remains the same. Note that the standard "JC/T 853-1999 Portland Cement Clinker" was replaced by "GB/T 21372-2008 Portland Cement Clinker" from 1st August, 2008. Appropriate changes to the referenced standard in PDD ver 12.1 have been made.

3. The non-carbonated source, CCR is available in the region. CCR is a waste by-product generated during the manufacture of PVC in an adjacent plant. Currently, there is no use of CCR which is land dumped and therefore there is no issue with respect of leakages.

According to the applied methodology AM0033, The project boundary is defined as the clinker process where the raw material is substituted for production of clinker. Fuel and electricity used are considered outside the project boundary and are estimated in the leakage section. During the site visit, the project boundary described within the PDD was confirmed and noted as appropriate. The CCR is generated in the PVC Branch of the same group company and it is a separate legal entity and in accordance with AM0033 is not within the project boundary.

AM0033 requires identification of baseline scenario alternatives from the two baseline options provided.

1) Continuation of current practice or in case of Greenfield projects, a scenario where the company uses carbonated sources of raw materials
2) A scenario(s) with varying degrees of raw material switch from traditional ones.

In case of (2) above, the PP has considered only the project activity with CCR use as an alternative. Although, varying degrees of CCR could have been considered, this would not alter the intent of the methodology. Besides, as has been seen earlier, the clinker manufactured from limestone is the most predominant in China and to identify varying degrees of limestone replacement scenarios would not serve the purpose.

AM0033 allows selection of baseline scenario through either financial analysis or barriers analysis. PP has opted to use the financial analysis in determination of the baseline scenario.

LRQA initially raised the following CAR 3 with respect of the financial analysis as a medium in determining the baseline

CAR 3

NPV for Alternative 1 has not been provided other than stating that it is positive. In selecting the baseline scenario through financial analysis, AM0033 requires a three step approach to be followed. Following issues noted with respect of the financial analysis document submitted:

1) A summary of capital and variable costs and cost savings due to net energy gains has not been provided. E.g. Supply and price trend for limestone, clay, coal, electricity and any limitation that may be considered in baseline setting.
2) Sensitivity analysis was not available demonstrating the robustness of the selection. E.g. Supply-demand balance and market forecast, Status of cement producer in the region, e.g. how many old plants being operated with old technology, trend of new plant development, modernization being applied new technology
3) PP to demonstrate that baseline scenario accounts for relevant national/local and sectoral policies and circumstances and that key factors, assumptions and parameters are conservative. E.g. Applicable legal requirements, applicable incentives including Cyclic Economy Policy and tax deduction benefits.

PP presented the revised financial analysis document wherein the above findings were addressed. The financial analysis was subsequently updated. The PP presented the variable costs such as limestone, power and coal and conducted a sensitivity analysis that showed that Alternative 1 was more attractive. Both scenarios were noted to be meeting the relevant regulatory requirements. As part of the validation LRQA noted an existence of a government policy that requires that 70% of cement plants by 2010 to be having new dry lime stone process technology. This however does not address any requisite use or replacement of CCR as a raw material for clinker manufacturing. That implies, use of the new dry process technology with limestone and clay as raw materials.

The revised PDD also reflects the NPV and noted matches with that in the financial analysis document. As a result, this finding was closed.

In the revised spreadsheet, the capital cost difference of 12.21 million RMB between the baseline and the project scenario resulting from additional equipment has been considered in addition to the variable costs of operation, maintenance and energy. NPV of such cost difference between the project and the baseline scenario has been calculated which results in a negative figure (-29.69 million RMB) which implies that the project activity is not attractive as compared to the baseline scenario.

LRQA has validated the equipment cost difference of 12.21 million RMB through review of the equipment break-up and consultation with external experts. The quantity and costs of raw material for the baseline and the project activity were confirmed with those in the FSR.

Sensitivity analysis of critical parameters such as (i) additional fixed asset investment (ii) CCR price (iii) limestone price (iv) coal price (v) power price and (vi) gain of energy saving has been considered and each of such variation for 20% variation still shows negative NPV.

The baseline scenario meets all relevant national/ local and sectoral policies and circumstances and therefore the selection of the baseline scenario of new dry process technology cement plant is justified.

Additionality

The project additionality was demonstrated by the PP using the tool for the demonstration and assessment of additionality (version 3). Although, the current version of this tool is version 5, Additionality tool version 03 was valid. Note that the version 04 was effective from 14th December 2007 vide EB36, Decision 22
The project activity was web hosted for global stake holder's consultation (the PDD version 01) from 12th December 2007 to 10th January 2008). Thus, on the date of web hosting (12th December 2007), version 3 of the additionality tool was valid. This was confirmed to be acceptable as per decision provided during EB35, para 16 of Annex13 i.e. Procedure for revision of an approved baseline and monitoring methodology by the Executive Board.

Step 1. Identification of alternatives to the project activity consistent with current laws and regulations

Sub-step 1a – Define alternatives to the project activity.

The two alternatives are identified. One is a continuation of current prevailing practice, i.e., a scenario in which the company construct the cement plant with new dry process technology using the traditional carbonated calcium source as raw materials. The other is the proposed project activity undertaken without being registered as a CDM project activity.

Initially, the following **CL 4** was raised.

CL 4

Alternative 1 in section B.4 is construction of a cement plant using raw materials from conventional carbonated calcium sources and Alternative 2 is partial substitution of raw materials limestone and clay with non-carbonated calcium source. These alternatives have been reversed in section B.5 of the PDD.

In the revised PDD, the PP maintained consistency between the alternatives in section B.4 and B.5 to reflect Alternative 1 as the cement plant using traditional limestone and clay as raw materials and Alternative 2 as the cement plant using CCR as a raw material. This finding was therefore closed.

Sub-step 1b - Consistency with mandatory laws and regulations.

Both the alternatives are consistent with the mandatory laws and regulations. Although, a cement policy published in 2006 requires that the proportion of cement through new dry process technology in total capacity would achieve the level above 70% till 2010. The policy however does not mandate use of non-carbonated

calcium source. In line with this requirement, the PP has considered the traditional carbonated calcium as source with new dry process technology.

Step 2. Investment Analysis

The methodology AM0033 requires that if the financial analysis is chosen, the project participants shall demonstrate that the use of non-carbonated calcium sources in the region or country is non-profitable using the net present value (NPV) analysis and the project is additional if the NPV of the project activity is negative.

PP presented a revised financial analysis that considers the additional investment, operational, maintenance and energy savings resulting from the project activity.

In validating the financial analysis spreadsheet, LRQA applied the relevant elements of the Guidance on the Assessment of Investment Analysis (EB41 Annex 45). The Input values to the spreadsheet were confirmed with those from the FSR. Given that the FSR was issued in 2006 and the investment decision was undertaken in Jan 2007, material differences in the input values are not expected. Further on key critical inputs such as the additional investment, the cost of CCR, LRQA confirmed these through seeking additional information. PP presented the break-up of additional investment of 12.21 million RMB which was confirmed.

The PP also presented the various components that result in the CCR price. The costing for CCR included a fixed asset investment and operation/ maintenance cost that result in a unit cost price of 31.3 RMB/t. A reasonable return on investment for the CCR treatment at 5.3 RMB/t was applied that resulted in a sale price of 36.6 RMB/t. Further, this price was certified by the Wutongqiao Pricing Bureau Prices Certification Centre, which was authorized by National Development and Reform Commission. This approval was stamped by the Prices Certification Centre and therefore considered as a reliable price. Sensitive analysis on the CCR price confirms that the NPV remained negative at 20%.

LRQA confirmed that the equipment listed as part of additional investment and the equipment listed as part of the CCR price were different and that it does not result in double counting. The quantum of other raw materials used in the project and the baseline scenario were confirmed with the external experts and it was noted that these were within reasonable variations. The coal consumption for the baseline scenario used by the PP (130,124 tons/year) was on the higher end compared to that provided by the expert (121,676 tons/year). Even when the figure provided by the expert was used, it was seen that there is no material change to the end outcome and the NPV remains negative.

The project activity is applicable with income tax exemption for first 5 years. The Ministry of Finance also issued the notification [2001] No.198 for possible exemption of VAT for slag cement manufacturing but it was issued on 1 December 2001 that was after the adoption of the CDM M&P on 11 November 2001 and not considered in the financial analysis following the clarifications of the Annex 3 to the report of the 16th meeting of the CDM-EB.

In calculating the cash flow resulting from the project activity, the PP have rightly considered the difference in additional investment, O&M costs, tax free gains and energy savings gain. This was subjected to a post-tax discount of 12% that is appropriate for the cement sector and derived from the Methods and Parameters

for Economic Assessment of Construction Project (ver 03). The resultant Net Present Value (NPV) was negative (-29.69 million RMB).

CL 5

The financial analysis in support of NPV calculation for the project activity uses the cost of CCR as 36.6 RMB/t. Given that the CCR plant is also owned by the PVC Branch of the same group company, PP has to demonstrate evidence to support that this is a fair price. In its absence, it is likely that the price is mutually agreed between the two branch companies to make the financial analysis of the traditional clinker manufacturing plant look attractive and that of the clinker manufacture through CCR use look less attractive.

The purchase contract dated 25/11/2007 between PVC Branch and Cement Branch (Project) was sighted and noted to match the price used in the financial analysis. Also, a local government approval attesting the sale price of CCR of 36.6 RMB/t as fair price effective from 25/11/2007 was made available. Further, a cost break-up of the CCR price shows the cost of dehydration equipment and the associated operation and maintenance costs. It was also confirmed that such dehydration equipment is not double counted as part of additional investment. On basis of this evidence, the finding was closed out.

The PP has used a discount rate of 12% for cement industry, which was confirmed from the source document through referral to the Methods and Parameters for Economic Assessment of Construction Project (version 03) which was issued in July 2006. It was confirmed that this benchmark was considered in the investment decision (Jan 2007) to proceed with the project activity.

CL 6

The choice of +/- 4.0 in the sensitivity analysis is not understood or substantiated.

The PP revised the financial analysis to reflect a sensitivity of +/-20%. The sensitivity analysis included the additional investment, the annual operation and maintenance costs and energy savings. Variations of 20% in any of these elements are not expected given that the moneys for purchasing of equipment and construction have already been committed and variation in raw materials is not generally seen to vary to this extent. Nonetheless with a 20% variation considered, the NPV still remains negative suggesting that the project activity is not financially attractive.
This CL was therefore closed.

CAR 7

1. No reference has been made with respect of reduction in consumption of limestone.
2. Current practice of CCR disposal is not known. If this is being dumped then the cost of such dumping to be considered in the financial analysis.
3. If the project owner is eligible for any tax deduction owing to use of carbide slag (Cyclic Economic Policy), this is not considered in the financial analysis.

PP revised the financial analysis sheet and the following was noted:

1. Raw materials such as limestone, CCR, coal, etc. have been considered as part of the Annual O&M cost in the sensitivity analysis.
2. CCR disposal is responsibility of the PVC Branch of the Group Company, it was learnt and outside the project boundary.
3. A tax holiday for five years based on the Cyclic Economic Policy and VAT of zero has now been considered in the financial analysis.

This CAR is therefore closed.

Step 4. Common practice analysis

There are more than 300 cement enterprises in Sichuan province, however there is no similar new dry pre-calcination clinker production line substituting traditional limestone and clay by CCR as calcium source. After completion of construction, the project will be the first new dry pre-calcination clinker production line utilizing CCR as main raw material. Please refer to the related issues below.

CAR 8

The common practice analysis in the PDD is made only on Sichuan Province. Additionality tool (Ver 3) requires PP to analyse whether broadly similar activities as proposed project have been implemented or currently underway in the same "country/region". The region referred to in the Additionality tool, i.e. a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, etc. Further sub-step 4a requires documented evidence and quantitative information with respect of diffusion of similar activities in the region.

Research undertaken by the validation team shows that this CCR based clinker production facility is the first of its kind in Sichuan province. The use of CCR from PVC in preparation of clinker was developed by Hefei Cement Design and Research Institute and the first pilot test was conducted at Shandong Cement Plant. The project at Sichuan is their second case. Even if we consider non-carbonate calcium use, our research provided in previous sections have detailed the consumption of Limestone and manufacture of cement and concluded that limestone constitutes predominant raw material in clinker/cement production.

In China, given the geographical size and the administrative structure, the region can be considered as a province. Besides, AM0033 defines "Region" as the area including at least the ten cement plants nearest to the project activity. In Leshan city alone, there are 31 cement plants which were considered as part of the baseline scenario as was confirmed during the interview with the Director of Leshan City Cement Association. Leshan is just one of the cities within Sichuan province. This finding has been closed.

Prior Consideration of CDM

"LRQA referred to the "Guidance on the demonstration and assessment of prior consideration of the CDM" (EB41 Annex 46) and the Validation and Verification Manual (VVM) (EB44 Annex 3) with respect of the Prior consideration of the CDM. VVM requires that if the project activity start date is prior to the date of publication of the PDD for stakeholders comments, then, it shall be demonstrated that the CDM

benefits were considered necessary in the decision to undertake the project as a proposed CDM project activity."

Table 4 in section B.5 of the PDD presents a timeline of the various steps taken by the PP towards seeking CDM status of the project activity. The FSR of the project activity had considered the possible emission reductions that could be earned through registering the project activity as a CDM project. An enquiry with China DNA was noted in Nov 2006 followed with a contract with the CDM consultant entity on 12 Dec 2006 thus demonstrating awareness on CDM at the management level. Investment decision conducted on 12 Jan 2007 clearly records that the project activity considered the funds necessary to reach the benchmark of 12%.

The start date was validated through the various purchases and contract agreements sighted amongst which included the equipment purchase contract and the contract agreement for construction. The equipment purchase order on 16/04/2007 is the earliest and hence this is considered as the start date.

The project was web-hosted from 12th December 2007 to 10th January 2008. Continuing actions to support the CDM status of the project activity included receiving a Letter of Approval from the host country and Annex 1 country in April 2008 and July 2008, respectively.

Thus, the project activity was able to demonstrate prior awareness on CDM and that continuous and real actions were taken to secure the CDM status of the project activity.

4.4 Emission reductions

Calculate the baseline GHG emissions

AM0033 details the chemical decomposition reaction of limestone producing CO2. The Loss on Ignition (LOI) of raw mix quantifies the amount of CO2 generated from one kilogram of raw mix based on a principle of difference in mass before and after the ignition process, corrected for moisture content.

The various formulae that appear within this section are noted here:

The baseline emissions for the year y shall be determined as follows:
Firstly, calculating CO2 emissions due to decarbonisation reaction during baseline scenario through following formulae:

Qco2 = LOI * Crm/kk
Where:
Qco2: CO2 emissions due to decarbonisation reaction during baseline scenario, kgCO2/kg clinker
LOI : loss of ignition, i.e. the amount of CO2 per unit of raw mix in baseline scenario kgCO2/kg raw mix
Crm/kk : relation between raw mix and linker, kg raw mix/kg clinker

Crm/kk = 1/(1- LOI)
Where:
LOI = (M1-M2)/M1
Where: M1: initial weight of dry sample in baseline scenario, kg
M2: residual weight of sample after heating in baseline scenario, kg

Finally, calculate baseline emission by the product Qco2 of multiplying the clinker output during year y, QClinker, y.

For a greenfield project, where samples can not be taken for establishing the baseline on the plant site as described above, the methodology AM0033 provides two options. The PP have chosen Option 1: Lab analysis based on the sample obtained in the region in the baseline scenario is chosen for this project. Option 1 requires that the samples for determination of LOI be selected from the clinker production line that has the highest performance in the region. High performance has not specifically been defined in the methodology.

The following CARs/CLs were raised at initial review related to this section.

CAR 9 seeks to confirm the basis of selection of Jinding cement plant as highest performance for determination of LOI. And CL 10 was issued to clarify that the clinker quality remains the same, since, the related parameter has not been specified.
CL 11 seeks demonstration that the size and frequency of sampling for this lab analysis is statistically significant with a maximum uncertainty range of 20% at 95% confidence level.

CAR 9

Jinding Cement Co. Ltd. is identified as the highest performance plant in Leshan City defined as the Region for sample analysis of LOI determination where 31 cement plants exist. PP to provide further evidence to support that Jinding Cement Co. Ltd. has the highest performance.

Cement Industry Development Policy, 2006 has set a criterion for high performance which includes a cement plant with new dry process technology and a threshold clinker generation of 2,000 tons/day. Application of this criterion reduces the number of cement plants to five amongst thirty one within the Leshan city. Jinding Cement Co. Ltd. has been selected by the local cement sector association document vol 13 (2007) on various parameters such as the technology, energy efficiency, environmentally friendly, economics and reputation within the region. This finding was therefore closed.

The historic data for the year 2007 has therefore been used in the determination of baseline emissions.

CL 10

Although, the quality of clinker in the baseline and the project activity needs to be same, the related quality parameter(s) have not been specified.

The original PDD was revised to include reference of the national standard that specifies clinker quality – -GBT 21372-2008. This CL was therefore closed.

CL 11

1. The procedure for conducting the LOI test, the frequency, accuracy, etc. has not been specified.
2. PP to provide evidence that the size and frequency of sampling for determination of LOI as part of baseline emissions is statistically significant with a maximum uncertainty range of 20% at 95% confidence level.

During the site visit, it was confirmed that the Jinding Cement Co. Ltd. uses the applicable national standard *GB/T176-1996 Cement chemical analysis methods* for measuring LOI of raw mix for clinker production which provides confidence with respect of sampling and analysis in line with the requirements specified in the methodology, AM0033. The calibration of relevant facilities is undertaken periodically and supervised by local governmental authority e.g. the measuring bureau.

The standard specifies the frequency, sampling and accuracy of laboratory equipments to be used for the purpose.

The CL was therefore closed.

LOI analysis for raw mix to clinker production at Jinding Cement Co. Ltd. for the twelve months averaged out to 36.12%. This figure was used in estimating the baseline emissions as under:

Crm/kk = $\frac{1}{\quad}$

(1 - LOI)

= 1/ (1- 0.3612) = 1.5654

Qco2 = LOI x Crm/kk
= 0.3612 x 1.5654 = 0.5654 kg CO2/kg clinker

BE = Qclinker,y x Qco2
= 600,000 x 0.5654
= 339261 tCO2 for year 2 onwards.
(For detail calculation, please refer the attached base line information in Excel file)

The clinker production in year 1 is 80% of that in year 2.

Therefore, BE in year 1 = 0.8 x 339,261 = 271,409 tCO2.

Calculate the project GHG emissions
AM0033 provides the formulae for calculating project emissions.

Q*CO2 = LOI* X C*rm/kk
Where:
Q*CO2 : CO2 emissions due to decarbonisation reaction during project activity, kgCO2/kg clinker
LOI*: loss of ignition i.e. the amount of CO2 per unit of raw mix for project activity, kgCO2/kg raw mix
C*rm/kk: relation between raw mix and clinker, kg raw mix/kg clinker

And,
LOI* = (M1*- M2*)/M1*
Where:
M1* - initial dry weight of sample for project activity, kg
M2* - residual weight of sample for project activity, kg
LOI* is used to determine coefficient raw mix/ clinker (C*rm/kk) using the equation below:
C*rm/kk=1/(1 - LOI*)

AM0033 provides two options for the PP for measurement of trapped CO2 and PP has chosen for Option 1.

Q*co2 = LOI* x C*rm/kk = (M1*-M2*)/M2* and
C*rm/kk = 1/ (1-LOI*) = M1*/M2*
Q*co2 = Mco2*/M2*
Where Mco2* is the mass of CO2 measured in the captured gas (CO2 mixed with H2O) generated during the LOI analysis.

In calculation of project emissions, ex-ante, the PP has used relevant information available from the FSR. This was confirmed as part of the validation process. LRQA deems this acceptable since this provides only an estimate of the Emission Reductions expected. The actual Emission Reductions are to be realised from the project activity through ex-post monitoring of various parameters.

Estimation of Project Emissions calculations (ex-ante).

FSR provides the LOI* of 17.86% in the first year and LOI* of 6.59% in the second and subsequent years.

As such, the verification of estimated project emissions was done for the first year and for the second and subsequent years.

Verification of estimated project emissions in the first year.

LOI* = 17.86%
C*rm/kk = 1/ (1 - 0.1786) = 1.2174
Q*co2 = LOI* x C*rm/kk
= 0.1786 x 1.2174
= 0.2174
PE (Year 1) = Qclinker,y x Q*co2
= 480,000 x 0.2174
=104,347 tonnes of CO2.

Verification of estimated project emissions in second and subsequent years
(For detail calculation, please refer the attached base line information in Excel file)

LOI* = 6.59%
C*rm/kk = 1/ (1 - 0.0659) = 1.0705
Q*co2 = LOI* x C*rm/kk
= 0.0659 x 1.0705
= 0.07055
PE (Year 2 and subsequent years) = Qclinker,y x Q*co2
= 600,000 x 0.0705
= 42,299 tonnes of CO2.
(For detail calculation, please refer the attached base line information in Excel file)

Calculate the project leakage

Leakage emissions, as per AM0033, constitutes the following:

1. off-site transport of non-carbonated calcium source to the cement plant.
2. fuel consumption and electricity (from grid and self generation) consumption during the clinker process (compared to the baseline)

The leakage emissions are calculated by the formula below:

Ly=Qtco2 + Qfossil _fuel,y + Qele_grid_clink,y + Qele_sg_clink,y
Where:
Qtco2 : leakage from transport of non carbonated calcium source (tCO2/yr)
Qfossil _fuel,y : leakage emission due to increase in energy use i in the year y (tCO2e)
Qele_grid_clink,y : leakage emission due to increase in grid electricity in the year y (tCO2e/t clinker)

Qele_sg_clink,y : leakage emission due to increase in self generation electricity in the year y (tCO2e/tclinker)

In the project activity, the transport of CCR to the cement plant is through pipelines. The associated emission through grid electricity is accounted for in the electricity consumption as project emissions. Through the site visit, it was confirmed that there would not be any captive power plant within the site boundaries. As a result,

Ly = Qfossil Fuel + Qele_grid_CLINK,y

Qfossil _fuel,y = Qclinker,y x Σ(Fp,i,y - Fb,i,y) x EFf,i,y

Where:

Qclinker,y: quantity of clinker production in the year y (tonnes of clinker)
Fp,i,y : fossil fuel of type i (coal or other fuel type "i") combusted in the project activity in the year y per unit clinker (tonnes of fuel/t clinker)
Fb,i,y : fossil fuel of type i (coal or other fuel type "i") combusted in the baseline scenario per unit of clinker (tonnes of fuel/t clinker)
EFf,i,y: emission factor for emissions of coal or other fuel type "i" (tCO2/tonnes of fuel). It could be calculated by the net caloric value (NCVi) multiplying corresponding emission factor (EFi).

The leakage from the increase of grid electricity is calculated as follows:
Qele_grid_clink,y = Qclinker,y x (Ep,grid_clink,y - Eb,grid_clink,y) x EFgrid_clink,y

Where:

Qclinker,y: quantity of clinker production in the year y (tonnes of clinker)

Ep,grid_CLINK,y: grid electricity consumption in the project activity in the year y per unit of clinker(MWh/t clinker)

Eb,grid_CLINK,y: grid electricity consumption in the baseline scenario per unit of clinker(MWh/t clinker)

EFgrid_CLINK,y: emission factor for emissions of grid electricity (tCO2/MWh), which shall be calculated according to the latest version of ACM0002. In absence of data a conservative value of 1.3 tCO2/MWh may be used.

PP have chosen to use the conservative value of 1.3 (t/CO2 MWh) for EFgrid_CLINK,y as per the methodology.

CL 12 raised since the PP provides a description of Option A & B provided for in ACM0002 within the PDD to obtain EFgrid_CLINK,y. But, in the data tables, the conservative value provided for in the methodology AM0033 is being used.

CL 12

1. Although Option 1 for measurement of mass of trapped CO2 is chosen, Option 2 – Measurement of mass of trapped water which is then not relevant also appears.

2. Although EFgrid, CLINK,y value of 1.3 has been adopted in the data tables, the PP provides an argument on Options A & B which are derived from the methodology, ACM0002, which is not necessary if the value is conservative.

PP addressed these comments through revision of the PDD. On basis of the confirmed action, this finding has been closed.

As per AM0033, where leakage due to energy use and electricity consumption is negative, i.e.
(Qfossil _fuel, y + Qele_grid_clink, y + Qele_sg_clink, y< 0), these leakages are considered as zero.

As part of the site visit, it was confirmed that the CCR will be provided through pipeline by PVC Branch of the Group Company which is adjacent to the project activity. So, the electricity rather than fossil fuel will be used for CCR transportation. The leakage due to transportation will be considered in the electricity consumption part.

Prior to the transportation of the CCR, the wet CCR produced in the PVC Branch undergoes a dehydration process. Refer CAR 13 with respect of leakage caused as a result of the dehydration of the CCR in the PVC Branch (outside Project Boundary).

CAR 13
Leakage resulting from the energy consumption in dehydrating wet CCR to dry CCR for use in the clinker production has not been addressed.

In resolving this CAR, the PP used values for the fuel consumption and the electricity consumption in the pre-CCR treatment in the leakage emission calculation.

For Greenfield projects, baseline electricity or fuel consumption per tonne of clinker for baseline is estimated using Option A. "Region" is defined as Leshan City where there are about 31 cement plants now. The cement production line with capacity of 2000 t/d in Jinding Cement Co. Ltd. is the one with highest performance in the region; therefore the historic information of it has been adopted.

Calculation of Leakage emissions ex-ante.
Using above equations, $Q_{fossil\_fuel,y} = = Q_{clinker,y} \times \Sigma(F_{p,i,y} - F_{b,i,y}) \times EF_{f,i,y}$

Where, Fpiy = 0.2205 t coal/t clinker (and, is the sum of the coal required for clinker production in the kiln and the pre-treatment of CCR).

Fbiy = 0.1673 t coal/t clinker (obtained from data from Jinding Cement Co, Ltd.

EFfiy = EFi x NCV fiy = 94.6 tCO2/TJ x 20908 MJ/ tonne of fuel x 10-6 TJ/MJ

Qclinker = 600,000 tonnes

Qfossil_fuel, y = 600,000 x (0.2205 - 0.16728) x 94.6 x 20908 x 10^{-6}
= 63,186 tCO2

(For detail calculation, please refer the attached base line information in Excel file)

Using the above equation to calculate the leakage from the increase of grid electricity,

Qele_grid_clink,y = Qclinker,y x (Ep,grid_clink,y - Eb,grid_clink,y) x EFgrid_clink,y

Where Ep,grid_clink,y = 0.074 + 0.0013 (sum of grid electricity consumed by clinker production and pre-CCR treatment)

= 0.0753 MWh/t clinker

Eb,grid,clink,y = 0.079 MWh/t clinker (data obtained from baseline plant)

EFgrid_clink,y = 1.3 tCO2/MWh (Default value from AM0033)

Qclinker,y = 600,000 tons.

Therefore, Qele_grid_clink,y = 600,000 x (0.0753 – 0.079) x 1.3
= - 2,544 tCO2.

(For detail calculation, please refer the attached base line information in Excel file)

It was confirmed that there is no captive power plant involved in either project activity or baseline scenario and all the electricity power is input form grid, therefore the relevant item of self-generation is not applicable. In accordance with the above consideration, leakage is calculated by following formula:

Ly=Qfossil _fuel,y + Qele_grid_clink,y

= 63186 – 2544 = 60,642 tCO2/year.

Note that above calculations are for year 2 and subsequent years with clinker production as 600,000 tons. In year 1, the clinker production is 80% of year 1 i.e. 480,000 tons.

Therefore Leakage in year 1 = 48,514 tCO2.

The actual leakage emissions from the project activity will be calculated ex-post based on data collected during the project activity and use of above equations.

Calculate the emission reductions

ERy = BEy – Pey - Ly
ERy = Qclinker, y x Qco2 – Qclinker,y x Q*co2 - Ly
ERy = Qclinker,y x (Qco2 - Q*co2)—Ly
Where:
BEy Baseline emissions, tCO2
PEy Project emissions, tCO2
Qco2: baseline emissions per tonne of clinker, tCO2
Q*co2: project emissions per tonne of clinker, tCO2

Ly: leakage emissions, tCO2

The crediting period for year 1 commences from 01/02/2009 to 31/01/2010 And subsequently for other years.
For year 1, BEy = 271,409;, PE = 104,347 and Ly = 48514

Therefore, ER = BEy – Pey – Ly
= 271,409 – 104,347 – 48,514
= 118,548

For year 2 and subsequent years, BEy = 339,261; PEy = 42,299; and, Ly = 60642.

Therefore, ER = BEy – Pey – Ly
= 339,261 – 42,299 – 60642
= 236, 320

The primary difference in the estimated emission reductions between the web-hosted PDD (ER estimated was 289,306) and the above (estimated ER = 236,320) can be attributed to accounting of the leakage of emissions caused as a result of the energy consumption during the dehydration of the CCR.

Initially, the following CARs were raised in this section:

CAR 14

1. The units for EFfiy in the PDD are in tCO2/tce and those of Fpiy and Fbiy are provided as tce of fuel/ t clinker. AM0033 requires units of EFfiy to be tCO2/ tonne of fuel and for Fpiy and Fbiy, the units are tonnes of fuel/ tonne clinker.
2. Monitoring section (B.7.1 of PDD) for Fpiy indicates data unit as tonnes/clinker but the monitoring plan explains it is to be converted into tce/t_clinker by stating that NCV shall be metered (i.e. determination of NCV based on lab analysis) which is not consistent with the requirements of Monitoring methodology. AM0033 ID13 requires determination of NCV based on default value of literature should be used and that it is not to be changed over the crediting period.
3. (i) The unit for F_b,i,y used in B.6.2 data table is tce/t_clinker that is not the same as tonnes of fuel/t_clinker used in the description of the same parameter under B.6.1 and the requirements of AM0033. Further, (ii) F_b,i,y is pre-determined based on FSR. AM0033 Option 1 (chosen by PP) requires determination by specific fuel consumption of the baseline plant.

The PP presented an amended PDD in resolving this CAR wherein,

1. the PP used the appropriate units for EFfiy, Fpiy and Fbiy as tCO2/t, t coal/t_clinker and t coal/t_clinker.
2. A default value of NCV for coal obtained from the China Energy Statistical Yearbook 2006 of 20908 MJ/tonne of fuel has been used.
3. Fbiy has now been provided for in units of tonnes of fuel/ t_clinker on basis of historic data obtained from Jinding Cement Co. Ltd.

This finding was closed.

CAR 15

Following information is requested.

1. Q_CO2 is calculated as 0.55743 tCO2/t_clinker i/o 0.5575 and BEy is noted varying slightly based on the calculations shown in this report.
2. The data of Fp,i,y was not given. The Fb,i,y should be 0.1057 rather than Fp,i,y. So, Qfossil-fuel,y <0 may be wrong. Same as P23 of PDD for Fp,i,y calculation.
3. E_b,grid_CLINK,y is given 75 MWh/t_clinker while E_p,grid_CLINK,y is given as 74 kWh/t_clinker. The project case electricity consumption is 1/1000 of baseline making Ly be always minus.
4. The unit for E_b,grid_CLINK,y is kWh/t_Clinker in B.6.3. P20.
5. Data source for E_p,grid_CLINK,y is not clearly indicated in B.6.3. P20.

In resolving the above CAR, the PP revised the PDD with the following actions:

1. Q_CO2 is 0.5654 tCO2/t_clinker. BEy is recalculated and validated as per this report.
2. Fp,i,y is 0.1650 t coal/t clinker and has been taken from FSR, Fb,i,y is 0.1673 t coal/t clinker based on the baseline plant.
3. Units of Eb,grid_CLINK,y now corrected to read MWh/t_clinker. It has corrected Ep,grid_CLINK,y reflects values provided for in FSR.

CAR 16

1. The FSR shows that the raw mix percent of CCR is gradually increased from 180,000 tons to 550,000 tons in the years 2008 & 2009. Therefore, the ER estimation for years 2008 & 2009 has to account the changing composition of raw mix and will not be on basis of the full realisation considered in other years.
2. ER calculations also need to account for certain changed parameters provided for in CAR 15.

The revised PDD has calculated emission reduction based on corrected CCR usage and changed parameters provided for in CAR 15. This was validated through the Emissions Reduction calculation sheet.

Refer details in the Validation Findings log attached to this report which details the actions taken by the PP and the closure evidences.

4.5 Monitoring methodology and monitoring plan

The PDD mentions that the clinker production information for the project is determined ex ante. AM0033 requires the production of clinker at the plant be determined on basis of Production report and implies ex-post.

Certain parameters in AM0033 are not reflected in the data and tables of the PDD. Also, no mention has been made with respect of the recording frequency for parameters, measured/calculated/estimated and the mode of record keeping – electronic /paper and duration of such records.

Initially, the following CAR/CLs were raised:

CL 17
PDD mentions determination of clinker production ex-ante, while AM0033 requires it to be on basis of Production report and implies ex-post.

Change reflected in the revised PDD and therefore this finding is closed.

CAR 18
Parameter IDs - 1, 4, 5, 6, 7 and 13 although appropriate to the project activity have not been listed. PDD does not address the source of data, whether the data value is measured/calculated or estimated, the recording frequency, the mode of record keeping (electronic/ paper) and the duration of such records.

Since the baseline does not use any non-carbonated calcium source, this parameter (id no. 5) has not been included by the PP. All other parameters have been reflected in the revised PDD. This finding has been closed.

4.6 Duration of the project activity / crediting period

The project activity started date mentioned in the PDD was noted to be from 23/1/2007. Since, the start date of the project activity was prior to the registration date, a CAR was raised asking the PP to justify prior CDM consideration for the project activity.

CAR 19
The project activity starting date is indicated as 23/01/2007 and it is before validation and registration of CDM project. The PP shall show evidence to prove the CDM incentive was seriously considered prior to the decision made for the investment.

Refer section 4.3 which includes a discussion on prior consideration of CDM, since, it is essentially a discussion on the additionality of the project activity and more relevant to be covered therein.

The finding was therefore closed.

The starting date of crediting period is indicated in the PDD on 1/8/2008 in version 01 of PDD and subsequently changed to 01/02/2009 in subsequent version of the

PDD. This is now changed to 01/03/2009 in PDD ver 12.1. The start date of the crediting period has to be after the date of project's registration as a CDM project activity and since the submission date is August 2008, the starting date of the crediting period meets with the requirement.

The PP has chosen a 10 year fixed crediting period for this project activity. Since, the operational lifetime of the project activity as determined from the FSR is expected to be 21 years, therefore, the duration of the crediting period is acceptable.

4.7 Environmental impacts

The Project Activity underwent and passed full Environmental Impact Assessments (EIA) in line with the requirements of the Chinese Government. An EIA Approval dated 25th September 2006 was sighted. The environmental impact for water, air, noise and solid waste management were analysed. The reporting in this section of the PDD noted to be in line with the EIA document which was reviewed.

EIA report noted to include dedusting facility to be provided to manage the air emission impact caused from the project activity.

4.8 Stakeholders' comments

The comments by local stakeholders are to be invited in an open and transparent manner. A summary of the comments received is to be provided to LRQA together with a report indicating how due account was taken to the comments received.

As part of the validation, the copies of survey questionnaire were collected and reviewed. The targeted stakeholders were factory workers and local residents, cement customers and local government officials. Although, dust pollution was noted to be of concern by 12% of the population, the PDD makes no reference with respect of its management during the operation of the cement plant.

Initially, one CAR was raised:

CAR 20
The PDD makes no reference with respect of management of dust pollution expressed by 12% of the local stakeholders as a concern.

Note that a dedusting facility to manage the air emissions caused as a result of the project activity is to be installed in line with the regulatory requirements. The PDD has been suitably updated to reflect this.

This finding has been closed.

5 Comments by parties, stakeholders and NGOs

In accordance with the requirement of paragraph 40 of the CDM M&P, the PDD is to be made publicly available for 30 days subject to confidentiality provisions agreed with the PP and receive comments from Parties, stakeholders and UNFCCC accredited NGOs on the validation and registration requirements.

The PDD was made publicly available at the following website address (http://cdm.unfccc.int/Projects/Validation/DB/MCRWNI2HPW9TZRKOS3RSXIJXDXMHQ0/view.html) in accordance with the requirements of the procedure for the period of 12 December 2007 to 10 January 2008. No comment was received during this period.

6 Validation Opinion

LRQA has undertaken the validation of the proposed project activity "Sichuan Carbide Calcium Residues Based Cement Plant Project" based on the requirements of CDM as set out in the Article 12 of the Kyoto Protocol, the CDM M&P, the present annex, subsequent decisions made by the COP/MOP and CDM-EB, and the other rules applicable to the proposed project activity including the host country's legislation and its specific requirements for sustainable development.

Through the process of the validation, the validation team identified 12 CARs and 8 CLs which have been closed out and 1 FAR.

The validation team is of the opinion that the proposed project activity meets all the relevant UNFCCC requirements for the CDM as well as the host country's national requirements, and if implemented as designed is likely to achieve the emission reductions and contribute to the sustainable development of the host country. Therefore LRQA requests the registration of "Sichuan Carbide Calcium Residues Based Cement Plant Project in Leshan City" to the CDM Executive Board as a CDM project activity.

7 Appendices

7.1 Appendix A: Letter of approval for the project by the host and investing country DNA

Letter from China DNA for host country approval to the project activity dated April 2008
Letter from DNA of Japan (Annex-I Party) for approval of the project activity dated 4 July 2008

7.2 Appendix B: List of documents reviewed

Category A documents (documents from the PP)

1) The CDM-PDD for Sichuan Carbide Calcium Residues Based Cement Plant Project Version 01 31 October 2007 and version 11 dated 11 August 2008
2) Business licence of Sichuan Yongxiang Co., Ltd.
3) The feasibility study report (FSR) for Sichuan Yongxiang Co., Ltd. by Hefei Cement Research and Design Institute dated May 2006.
4) Hefei Cement Research and Design Institute letter dated 18 June 2008 providing a comparison of the additional investment cost for CCR compared to the traditional cement plant using limestone and clay as raw materials.
5) The feasibility study report approval letter from local Economic Committee for Sichuan Yongxiang Co., Ltd. dated 23rd January 2007.
6) Management Decision minutes of 12th January 2007
7) Purchase document of major purchases dated 16th April 2007.
8) The environmental impact assessment (EIA) report for Sichuan Yongxiang Co., Ltd. by Sichuan Environmental Protection Research Institute dated June 2006.
9) Approval letter from local EPA dated June 2006.
10) The environmental impact assessment (EIA) report approval letter from local EPA for Sichuan Yongxiang Co., Ltd. dated 25th Sept 2006.
11) Stakeholder questionnaires filled in during the local stakeholder consultation process held in Oct 2007.
12) The cement production operation manual (draft).
13) Design and Commission with new dry process technology using CCR as raw materials.
14) China Cement Industry Recycle Economics Development Strategy and Potential Analysis.
15) Price certification by Wutongqiao Pricing Bureau Prices Certification Centre report for pre-treatment of CCR.
16) Additional investment cost of equipment
17) Emission Reduction Purchase Agreement dated 10/01/2008.
18) Agricultural Commercial Bank letter dated 8/04/2007 rejecting the loan application.
19) Agricultural Commercial Bank letter dated 20/05/2007 approving the loan
20) Construction Contract dated 11/06/2007
21) Order for commencement of construction 18/06/2007

22) Ministry of Finance of China and State Taxation Administration of China. Publication, Code Caishui[2008] 156) http://www.js-n-tax.gov.cn/Page1/StatuteDetail.aspx?StatuteID=8931)
23) State Taxation Administration of China in 25/04/2007. http://www.js-n-tax.gov.cn/Page1/StatuteDetail.aspx?StatuteID=7620)

Category B documents (other documents referenced)

1. AM0033 (version 02) – "Use of non-carbonated calcium sources in the raw mix for cement processing".
2. The Tool for the Demonstration and Assessment of Additionality (ver 3).
3. CDM M&P
4. Guidelines for completing CDM-PDD.
5. Hefei Cement Research and Design Institute paper titled, "Design and Commission with new dry process technology using CCR as raw materials, 2006".
6. China Cement Industry Recycle Economics Development Strategy and Potential Analysis, 2002.
7. Science and Technology Outline for Sustainable Development (for China).
8. Methods and Parameters for Economic Assessment of Construction Project (Version 3).
9. *GB/T176-1996 Cement chemical analysis methods* for measuring LOI of raw mix for clinker production.
10. JC/T 853-1999 – Silicate cement clinker standard.
11. GBT 21372-2008 -–Silicate cement clinker standard
12. Guidance on the demonstration and assessment of prior consideration of the CDM.
13. Guidance on the Assessment of Investment Analysis

7.3 Appendix C : List of persons interviewed

Sichuan Yongxiang Co., Ltd.

Ms. Mao Xiang, Cement Project Supervisor
Mr. Liu Jianhua, Cement Project Manager
Mr. Liu jicheng, EHS official
Mr. Yang Wei, Cement Production Manager
Mr. Luo Yongxiang, Engineering and Technology Manager
Mr. Huang Chengjun, Cement Production Supervisor
Mr. Zhang Hui, HR Manager

Jinding Cement Co., Ltd.

Mr. Li Jianqiang, Director of Production Department

KOE Environmental Consulting, Inc.

Mr. Daniel Cao, Senor Manager

Local Community

MS. Yuan Guangzhen, local villager

Wu Tong Qiao District Industry and Economic Bureau

Mr. Li Minghua, Official of Wu Tong Qiao District Industry and Economic Bureau

Wu Tong Qiao District EPA
Mr. Ye Dehua, Official of Wu Tong Qiaao District EPA

Leshan City Cement Association
Mr. Cheng Xuejun, Director of Leshan City Cement Association

7.4 Appendix D: How due account has been taken to the public input made to the validation requirements

The PDD was made publicly available in accordance with the requirements of the procedure for the period of 12 December 2007 to 10 January 2008. No comment was received during the period.

7.5 Appendix E: Certificate of Appointment

Attached to this report.

7.6 Appendix F: Validation findings log

Attached to this report.

Date: 23 February 2009

To whom it may concern,

Certificate of Appointment

Subject: Validation of "Sichuan Carbide Calcium Residues Based Cement Plant"

We hereby certify that the following personnel have engaged in the validation and request for review process that has satisfied the competence requirements of the validation of the CDM project activity.

Name of Person		Assigned roles
Ketan S. Deshmukh	LRQA Asia Management	Team Leader, Lead Validator CDM
Albert Chen	LRQA China	Team Member, Validator CDM
Qisheng Ding		External Sector Expert
Wen Bai Ming		External Sector Expert
Prabodha C. Acharya	LRQA India	Technical Reviewer
A. V. Shivaramakrishnan	LRQA India	Sector Expert to Technical Reviewer
Antriksh Kumar		External Sector Expert to Technical Reviewer
Anne-Marie Warris	LRQA Ltd.	Decision Maker

Decision Maker

Dr. Anne-Marie Warris

CDM Validation Findings Log "Sichuan Carbide Calcium Residues Based Cement Plant Project" Version 03.1 – 20 February 2009

Grade 1	Status 2	Finding 3	Corrective action review 4	Process / aspect 5	Date 6	Reference 7	Clause 8
CAR	Closed	It was noted that the project has not received the approval from the Parties involved. The written approval shall be submitted before completion of the validation process.	28 July 2008 Letter of Approval from National Development & Reform Commission of People's Republic of China dated April 2008 was made available. . Letter of Approval from the Liaison Committee for the utilization of Kyoto Mechanisms (Japan DNA) dated July 4, 2008 was made available. Contents of both LOAs were reviewed and noted meeting the requirements related to the elements of a written approval.	Approval from Parties / PDD A.3.	15 Feb 08	CAR 1	Para. 40 (a) CDM M&P
CL	Closed	Figure 1—project location (A4.1.4) should be given English translation. Figure 2—production process (A4.3) should be given English translation. The latitude and longitude co-ordinates of the project activity are not presented for unique identification.	28 July 2008 Noted attended in the revised PDD.	General Description/ PDD A.4.	15 Feb 08	CL 2	Guidelines for completing CDM-PDD

Grade 1	Status 2	Finding 3	Corrective action review 4	Process / aspect 5	Date 6	Reference 7	Clause 8
CAR	Closed	NPV for Alternative 1 has not been provided other than stating that it is positive. Further, AM0033 requires a three step approach to be followed. Following issues noted: 1. A summary of capital and variable costs has not been provided. 2. Sensitivity analysis was not available demonstrating the robustness of the selection. 3. PP to demonstrate that baseline scenario accounts for relevant national/local and sectoral policies and circumstances and that key factors, assumptions and parameters are conservative. 4. Sub-step 1 mentions energy savings gain.	28th July 2008 The financial analysis now includes fixed and variable costs. 1 & 2. A sensitivity analysis for the two baseline alternatives (Alternative 1 – traditional clinker with limestone and, Alternative 2 – Clinker through CCR) noted carried out. Supporting calculations in the financial analysis verified along with rationale and found in order. Choice of traditional clinker plant with limestone as raw material as baseline scenario noted justified. Value of NPV updated in the PDD. 3. All alternatives noted meeting the national and local regulatory requirements. Inputs in the financial analysis noted based on the FSR. The inputs in the FSR were confirmed by the sector expert for quantity of material and costs as appropriately reflecting the industry norms and market prices. The sectoral Cement Policy, 2006 requires increasing the New Dry Process technology to 70% by 2010. However, this policy does not affect the project activity, since, it does not mandate any use of CCR. 4. Noted that the financial analysis considered the costs of coal and power (energy); (which included the inputs from FSR document); however, noted no appreciable difference in the two baseline alternatives considered. PDD ver 12.1 now addresses the process of selection of the baseline scenario through financial analysis. Revised spreadsheet calculation presented covers the additional investment, the operation and maintenance cost, the cost of raw materials and energy savings gain. Sensitivity analysis of critical parameters such as additional investment, the costs of CCR, limestone, coal, power and energy savings has been calculated for 20% variation. All relevant sectoral policies have been considered in the selection of the baseline scenario.	Baseline/ PDD B.4.	15 Feb 08	CAR 3	Para. 45 CDM M&P

Grade 1	Status 2	Finding 3	Corrective action review 4	Process / aspect 5	Date 6	Reference 7	Clause 8
CL	Closed	Alternative 1 in section B.4 is construction of a cement plant using raw materials from conventional carbonated calcium sources and Alternative 2 is partial substitution of raw materials limestone and clay with non-carbonated calcium source. These alternatives have been reversed in section B.5 of the PDD. Note, this change may need changes in other relevant sections of the PDD.	The Alternatives in section B.4 and B.5 were made consistent. Alternative 1 now reflects using conventional carbonated calcium and Alternative 2 through use of non-carbonated calcium as source.	Additionality/ PDD B.5.	15 Feb 08	CL 4	Para. 43 CDM M&P
CAR	Closed	The financial analysis in support of NPV calculation for the project activity uses the cost of CCR as 36.6 RMB/t. Given that the CCR is produced by the PVC Branch of the same Group Company, evidence necessary to demonstrate that it is a fair price for CCR.	11 July 2008 The purchase contract dated 25/11/2007 between PVC Branch and Cement Branch (Project) was sighted and noted to match the price used in the financial analysis. Also, a local government approval attesting the sale price of CCR of 36.6 RMB/t as fair price effective from 25/11/2007 was made available. In addition a break-up of the cost of CCR shows the cost of dehydration equipment and the associated operation & maintenance costs. It was confirmed that this dehydration equipment is not a part of the additional investment of 12.21 million RMB considered for this project activity.	Project Additionality PDD B.5	15 Feb 08	CL 5	Para. 43 CDM M&P
CL	Closed	The choice of +/- 4.0 in the sensitivity analysis is not understood or substantiated.	20 Feb 2009 Sensitivity analysis now considers +20% & -20% for fixed investment, annual O&M cost and production of cement which is acceptable as industry norm and in actual practice variation of 20% is not expected..	Project Additionality/ PDD B.5.	15 Feb 08	CL 6	Para. 43 CDM M&P

Grade 1	Status 2	Finding 3	Corrective action review 4	Process / aspect 5	Date 6	Reference 7	Clause 8
CAR	Closed	Following comments with respect of demonstration of additionality: 1) No reference has been made with respect of reduction in consumption of limestone. 2) Current practice of CCR disposal is not known. If this is being dumped then the cost of such dumping to be considered in the financial analysis. 3) If the project owner is eligible for any tax deduction owing to use of carbide slag (Cyclic Economic Policy), this is not considered in the financial analysis.	21 July 2008 A financial analysis document was made available that was noted wherein 1. NPV for the traditional clinker making from limestone (baseline scenario) and for the project activity using CCR were calculated. The financial analysis has been revised and reflects the values for consumption of limestone in the baseline and the project activity. Reduction in limestone noted in the financial analysis for the project activity with a corresponding rise in consumption of CCR. It also includes other elements of energy such as coal and electricity. 2. Site survey confirmed that dehydration of CCR is carried out by the PVC branch and outside the project boundary. CCR is traditionally land dumped. Disposal of CCR would also have been the responsibility of the PVC Branch, it was informed and therefore not considered in the financial analysis. 3. The tax holiday for five (5) years has been taken into account. Also, in line with the Cyclic Economic Policy, the VAT has been applied at 0%. .	Project Additionality/PDD B.5.	15 Feb 08	CAR 7	Para. 43 CDM M&P
CAR	Closed	The common practice analysis in the PDD is made only on Sichuan Province. Additionality tool (Ver.3) requires PP to analyse whether broadly similar activity as proposed project has been implemented or currently underway in the same "country/region". The region referred here should refer to the Additionality tool, i.e. a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, etc. Further sub-step 4a requires documented evidence and quantitative information with respect of diffusion of similar activities in the region.	Research by validators undertaken shows that this CCR based clinker production facility is the first of its kind in Sichuan province. The use of CCR in preparation of clinker was developed by Hefei Cement Design and Research Institute and pilot test at Shandung Cement Plant. The project at Sichuan is their second case. In China, given the geographical size and the administrative structure, the region can be considered as a province.	Project Additionality/PDD B.5.	15 Feb 08	CAR 8	Para. 43 CDM M&P

Grade 1	Status 2	Finding 3	Corrective action review 4	Process / aspect 5	Date 6	Reference 7	Clause 8
CAR	Closed	Jinding Cement Co. Ltd. is identified as the highest performance plant . PP to present evidence in support of high performance.	Leshan Cement Sector association document vol 13. (2007) which compared the performance of several cement plants within the region (31 plants) on basis of parameters such as production technology, production quantity, energy efficiency, etc. concluded that Jinding Cement Co. is the one with the highest performance.	Project baseline/ B.4.	27 July 08	CAR 9	Para. 37 (e) CDM M&P
CL	Closed	Although, the quality of clinker in the baseline and the project activity needs to be same, the related quality parameter(s) have not been specified.	PDD revised to include reference of the national standard that specifies clinker quality – GBT 21372-2008	Baseline Emissions/ PDD B.6.1	27 July 08	CL 10	Para. 37 (e) CDM M&P
CL	Closed	1. The procedure for conducting the LOI test, the frequency, accuracy, etc. has not been specified. 2. PP to provide evidence that the size and frequency of sampling for determination of LOI as part of baseline emissions is statistically significant with a maximum uncertainty range of 20% at 95% confidence level.	1. The laboratory uses a nationally approved test method – GB/T176-1996 (Cement Chemical analysis methods) in determining the LOI. 2. The test includes the uncertainty range and confidence level in line with the requirements of the methodology. The Laboratory has an accredited certificate (Certificate no. 083 dated 8 Oct 2005 and valid until 7 Oct 2010).	Baseline Emissions/PDD/B.6.1	27 July 08	CL 11	Para. 37 (e) CDM M&P
CL	Closed	1. Although Option 1 for measurement of mass of trapped CO2 is chosen, Option 2 – Measurement of mass of trapped water which is then not relevant also appears. 2. Although EFgrid, CLINK,y value of 1.3 has been adopted in the data tables, the PP provides an argument on Options A & B which are derived from the methodology, ACM0002, which is not necessary if the value is conservative.	Revised PDD noted having attended to these comments.	Project Emissions/ PDD B.6.1 Leakage/ PDD.B.6.1	27 July 08	CL 12	Para. 37 (e) CDM M&P
CAR	Closed	Leakage resulting from the energy consumption in dehydrating wet CCR to dry CCR for use in the clinker production has not been addressed.	PP accounted for the leakage emissions caused as a result of pre-treatment of CCR	Leakage Emissions/B.6.2	27 July 08	CAR 13	Para 50 CDM M&P

Grade 1	Status 2	Finding 3	Corrective action review 4	Process / aspect 5	Date 6	Reference 7	Clause 8
CAR	Closed	Following issues raised with respect of Data and parameters: 1. The units for EFfiy in the PDD are in tCO2/tce and those of Fpiy and Fbiy are provided as tce of fuel/ t clinker. AM0033 requires units of EFfiy to be tCO2/ tonne of fuel and for Fpiy and Fbiy, the units are tonnes of fuel/ t clinker. 2. Monitoring section (B.7.1 of PDD) for Fpiy indicates data unit as tonnes/clinker but the monitoring plan explains it is to be converted into tce/t_clinker by stating that NCV shall be metered (i.e. determination of NCV based on lab analysis) which is not consistent with the requirements of Monitoring methodology. AM0033 ID13 requires determination of NCV based on default value of literature should be used and that it is not to be changed over the crediting period. 3. (i) The unit for F_b,i,y used in B.6.2 data table is tce/t_clinker that is not the same as tonnes of fuel/t_clinker used in the description of the same parameter under B.6.1 and the requirements of AM0033. Further, (ii) F_b,i,y is pre-determined based on FSR. AM0033 Option 1 (chosen by PP) requires determination by specific fuel consumption of the baseline plant.	1. Units of EFfiy corrected to tCO2/t coal and Fpiy and Fbiy are provided in t coal/t clinker. 2. A default value of NCV of coal used is 20908 MJ/tonne of fuel which is the national average based on China Energy Statistical Yearbook 2006.. 3. (i) Fbiy has now been provided in units of t coal/ t clinker. (ii) corrected to state that Fbiy is based on average of historic records of the baseline plant, Jinding Cement Co. Ltd.	Emissions Reduction/ B.6.2	15 Feb 08	CAR 14	Para. 43 CDM M&P
CAR	Closed	Following clarification is requested. 1. Q_CO2 is calculated as 0.55743tCO2/t_clinker i/o 0.5575 and error in calculation of BEy noted. 2. Values of Fpiy and Fbiy in data tables are incorrect. Fpiy should be 0.1479 and Fbiy should be 0.1673. 3. The unit of E_b,grid_CLINK,y in B.6.2 is given as MWh/t_clinker while the unit for the same parameter in B.6.3 is given as kWh/t_clinker. 4. Data source for E_p,grid_CLINK,y in B.6.3 is shown as "calculated based on FSR". Cannot understand as to what calculations are required?	On revised PDD, the mentioned issues have been corrected and acceptable: 1. Q_CO2 is 0.5654tCO2/t_clinker. BEy is recalculated and validated as per this report. 2. Fp,i,y is 0.1650t coal/t clinker and has been taken from FSR, Fb,i,y is 0.1673 t coal/t clinker based on the baseline plant. 3. Units of Eb,grid_CLINK,y now corrected to read MWh/t_clinker. 4. It has corrected Ep,grid_CLINK,y reflects values provided for in FSR.	Project emission/ B.6, B.7.	15 Feb 08	CAR 15	Para. 43 CDM M&P

Grade 1	Status 2	Finding 3	Corrective action review 4	Process / aspect 5	Date 6	Reference 7	Clause 8
CAR	Closed	1. The FSR shows that the raw mix percent of CCR is gradually increased from 180,000 tons to 550,000 tons in the years 2008 & 2009. Therefore, the ER estimation for years 2008 & 2009 has to account the changing composition of raw mix and will not be on basis of the full realisation considered in other years. 2. ER calculations also need to account for certain changed parameters provided for in CAR 15	The revised PDD has calculated corrected emission reduction based on CCR usage and changed parameters provided for in CAR 15..	Project emission / PDD B 6.3.	15 Feb 08	CAR 16	Para. 43 CDM M&P
CL	Closed	PDD mentions determination of clinker production ex-ante, while AM0033 requires it to be on basis of Production report and implies ex-post.	Revised PDD reflects this as ex-post in the PDD.	Monitoring Plan/ PDD B.7.2	15 Feb 08	CL 17	Para. 53 CDM M&P
CL	Closed	a) Following Parameters although appropriate to the project activity and required as per Monitoring Methodology AM0033 are not mentioned in the PDD: 1, 4, 5, 6, 7 & 13. b) PDD does not address the source of data, whether the data value is measured/calculated or estimated, the recording frequency, the mode of record keeping (electronic/ paper) and the duration of such records.	a) Since, the baseline does not use any non-carbonated calcium source, other than parameter id 5, all other parameters are now reflected in revised PDD. b) Data tables include the various attributes with respect of the data.	Monitoring Plan/ PDD B.7.1	15 Feb 08	CAR 18	Para. 53 CDM M&P
CAR	Closed	The project activity starting date is indicated as 23/01/2007 and it is before validation and registration of CDM project. The PP shall show evidence to prove the CDM incentive was seriously considered prior to the decision made for the investment.	The FSR report for the project activity dated May 2006 noted providing a consideration of CDM funds in the financial analysis as a way to demonstrate the attractiveness of this project. Further noted that the purchase of equipment on 16/04/2007 is the earliest of early actions amongst various purchases/ contract agreements sighted. This date is considered as the project start date. The construction of the clinker production facility commenced July 2007 which is much later than the start date indicated. Management in its meeting on 12 Jan 2007 seriously considered that CDM support is necessary for the project activity to reach the benchmark (12%) for the sector.	Crediting Period /PDD C.3	15 Feb 08	CAR 19	Para. 49 CDM M&P

Grade 1	Status 2	Finding 3	Corrective action review 4	Process / aspect 5	Date 6	Reference 7	Clause 8
CAR	Closed	The PDD makes no reference with respect of management of dust pollution expressed by 12% of the local stakeholders as their concern.	The dedust facility will be equipped on the production line. The EIA report for project has been approved and includes the dedusting facility in line with the legal requirements. PDD updated to reflect the provision of dedusting facility.	Stakeholder comments/PDD E.2	15 Feb 08	CAR 20	Para. 37 (b) CDM M&P
FAR	Open	The chlorides content in the raw mix design provided in the FSR is 0.04% which exceeds the normal 0.015% stipulated for normal operations of the kiln. Of the two options that were discussed by the PP – (1) Upstream control at PVC plant and (2) Bypass system through venting part of the gases from the kiln, In PDD ver 12.1, the PP has selected upstream control at PVC plant. This mechanism has to be confirmed during the first verification to ensure that any project leakage emissions arising out of the by-pass system chosen (if any) is appropriately accounted in the calculation of Emission Reduction		Process Technology/ A.4.3	16 Feb 2009	FAR 21	Para 50 CDM M&P