



VALIDATION REPORT

INCREASING THE ADDITIVE BLEND IN CEMENT PRODUCTION BY JAIPRAKASH ASSOCIATES LTD (JAL)

REPORT No. 2005-9107

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DET NORSKE VERITAS



VALIDATION REPORT

Date of first issue: 2005-12-27	Project No.: 4525-9107
Approved by: Einar Ternes Director	Organisational unit: DNV Certification, International Climate Change Services
Client: Jaiprakash Associates Ltd (JAL)	Client ref.: R B Singh, Jt President (Finance)

Summary:

Det Norske Veritas Certification Ltd. (DNV) has performed a validation of “*Increasing the additive blend in cement production by Jaiprakash Associates Ltd (JAL)*.” project (hereafter called “the project”) in India on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures and the subsequent decisions by the CDM Executive Board. This validation report summarizes the findings of the validation.

The validation consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan, ii) follow-up interviews with project stakeholders and iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

The project activity comprises of an increase in the blending of fly ash in the manufacturing of Portland Pozzolana Cement (PPC) produced by Jaiprakash Associates Ltd. at three of its operation units in India. The project applies the approved baseline and monitoring methodology, ACM0005 - Consolidated Baseline Methodology for increasing the blend in cement production. By displacing clinker with fly ash in the production of PPC, the project results in reductions of CO₂ emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

In summary, it is DNV’s opinion that the “*Increasing the additive blend in cement production by Jaiprakash Associates Ltd (JAL)*” project, as described in the project design document of December 2005, meets all relevant UNFCCC requirements for the CDM and correctly applies the approved baseline and monitoring methodology ACM0005. DNV Certification thus requests the registration of the project as a CDM project.

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***Abbreviations***

BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CH ₄	Methane
CL	Clarification request
CM	Combined Margin
CMA	Cement Manufacturers Association of India
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNV	Det Norske Veritas
DNA	Designated National Authority
EIA	Environment Impact Assessment
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
JAL	Jaiprakash Associates Limited
MP	Monitoring Plan
MVP	Monitoring and Verification Plan
N ₂ O	Nitrous oxide
NGO	Non-governmental Organisation
NTPC	National Thermal Power Corporation
ODA	Official Development Assistance
OM	Operating Margin
PDD	Project Design Document
PPC	Portland Pozzolona Cement
UNFCCC	United Nations Framework Convention on Climate Change



1 INTRODUCTION

Jaiprakash Associates Ltd (JAL) has commissioned Det Norske Veritas Certification Ltd. (DNV) to validate the “*Increasing the additive blend in cement production by Jaiprakash Associates Ltd (JAL)*” project (hereafter called “the project”) in India. This report summarises the findings of the validation of the project, performed on the basis of UNFCCC criteria for CDM projects, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation team consists of the following personnel:

Mr. Kumaraswamy C	DNV Certification Bangalore	Team Leader, GHG auditor
Mr. Santosh Jayaram	DNV Certification Colombo	GHG auditor, sector expert
Mr. Praveen Nagaraje Urs	DNV Certification Bangalore	GHG auditor
Mr. Amit Thusu	DNV Certification New Delhi	GHG auditor
Mr. Einar Telnes	DNV Certification Oslo	Technical reviewer

1.1 Validation Objective

The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant UNFCCC and host Party criteria are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

1.2 Scope

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board. The validation team has, based on the recommendations in the Validation and Verification Manual/3/, and employed a risk-based approach, 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 project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

1.3 Description of Proposed CDM Project

The proposed CDM project activity by Jaiprakash Associates Ltd proposes to increase the percentage level of flyash, sourced from neighbouring thermal power plants and thereby reduce clinker in the production of Portland Pozzolana Cement (PPC) in three of its manufacturing units located in India. This increase in the blend of fly ash will reduce the clinker requirement and thus result in the reduction of fossil fuel used for clinker formation to the extent that it is replaced with fly ash. The increased use of fly ash in the cement also contributes to reduced environmental effects in the mining of limestone used for clinker manufacture.

The total estimated GHG reduction from all the three project activity sites of JAL is expected to be 33 608 t of CO₂e per year. The following 3 sites are involved in the project:



Cement Plant	Region
Rewa plant	Madhya Pradesh
Bela plant	Madhya Pradesh
Sadva Khurd plant	Uttar Pradesh

2 METHODOLOGY

The validation consists of the following three phases:

- I a desk review of the project design and the baseline and monitoring methodology
- II follow-up interviews with project stakeholders
- III the resolution of outstanding issues and the issuance of the final validation report and opinion.

In order to ensure transparency, a validation protocol was customised for the project, according to the Validation and Verification Manual/3/. The protocol shows in transparent manner criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organises, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The validation protocol consists of three tables. The different columns in these tables are described in Figure 1.

The completed validation protocol for the “*Increasing the additive blend in cement production by Jaiprakash Associates Ltd (JAL)*” is enclosed in Appendix A to this report.

Findings established during the validation can either be seen as a non-fulfilment of validation protocol criteria or where a risk to the fulfilment of project objectives is identified. Corrective Action Requests (CAR) are 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 certified.

The term Clarification may be used where additional information is needed to fully clarify an issue.



Validation Protocol Table 1: Mandatory Requirements for CDM Project Activities			
Requirement	Reference	Conclusion	Cross reference
<i>The requirements the project must meet.</i>	<i>Gives reference to the legislation or agreement where the requirement is found.</i>	<i>This is either acceptable based on evidence provided (OK), a Corrective Action Request (CAR) of risk or non-compliance with stated requirements or a request for Clarification (CL) where further clarifications are needed.</i>	<i>Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent Validation process.</i>

Validation Protocol Table 2: Requirement Checklist				
Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
<i>The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in seven different sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.</i>	<i>Gives reference to documents where the answer to the checklist question or item is found.</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 (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). A request for Clarification (CL) is used when the validation team has identified a need for further clarification.</i>

Validation Protocol Table 3: Resolution of Corrective Action Requests and Requests for Clarification			
Draft report corrective action requests and requests for clarifications	Ref. to Table 2	Summary of project participants' response	Final conclusion
<i>If the conclusions from the draft Validation are either a Corrective Action Request or a Clarification Request, these should be listed in this section.</i>	<i>Reference to the checklist question number in Table 2 where the Corrective Action Request or Clarification Request is explained.</i>	<i>The responses given by the project participants during the communications with the validation team should be summarised in this section.</i>	<i>This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".</i>

Figure 1 Validation protocol tables



2.1 Review of Documents

The PDD /1/ dated 2005-12-05 submitted by Jaiprakash Associates Ltd (and earlier version) and additional background documents related to the project design and baseline were assessed as a part of the validation.

2.2 Follow-up Interviews

On 2005-12-06, DNV performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of JAL were interviewed. The main topics of the interviews are summarised in Table 1.

Table 1 Interview topics

Interviewed organisation	Interview topics
Jaiprakash Associates Ltd (JAL) – Mr. R.B. Singh (Finance), Mr. Alok Joshi (Production), Mr. P.Prakash (Marketing), Mr. R. Srivastava (Corporate representative), Mr. A.Pandey and Mr. A. Sangal (Emergent Ventures)	<ul style="list-style-type: none">• Site Visits• Environmental permits• Resources, training, procedures• Verification of findings of the desk review

2.3 Resolution of Clarification and Corrective Action Requests

The initial validation identified four Corrective Action Requests (CAR) and nine requests for Clarification (CL). These requests were presented to the project participant in a draft validation report on 2005-12-27. The additional information provided by the project participant to address these requests resolved the *Corrective Action Request* and the requests for *Clarification* to DNV's satisfaction. To guarantee the transparency of the validation process, the concerns raised by DNV and the response provided by the project participant are documented in Table 3 of the Validation Protocol in Appendix A.



3 VALIDATION FINDINGS

The findings of the validation are stated in the following sections. The validation criteria (requirements), the means of verification and the results from validating the identified criteria are documented in more detail in the validation protocol in Appendix A.

The final validation findings relate to the project design as documented and described in the revised and resubmitted project design documentation dated 5 December 2005.

3.1 Participation Requirements

The project is being proposed as a unilateral project by JAL. India has ratified the protocol and established the DNA as per participation requirements under the Kyoto Protocol. The DNA of India approved the project on 24 May 2006 /2/. No public funding has been used for the project activity.

The project is expected to contribute to sustainable development through increased generation of employment, reduction in GHG related to calcination of limestone, reduction of pollution due to disposal of flyash and enhancing energy security in the surrounding communities.

3.2 Project Design

The objective of the proposed project activity is to develop Pozzolana Portland Cement (PPC) grades with high fly-ash content in order to replace clinker in the manufacturing of PPC. Existing blending setup has been used for the project activity and no changes in manufacturing technology are envisaged JAL. While the facilities at Rewa and Bela include clinker production, grinding and mixing of flyash, the facility at Sadva Khurd is restricted to mixing of flyash with the clinker that is transported from the manufacturing locations at Rewa and Bela.

The project activities will reduce clinker production and the associated GHG emissions by increasing the blend of fly ash in PPC produced at the project sites from the current 27 % and beyond but within the stipulation of 35% as per Indian Standard 1489. Emissions arising from the use of fossil fuel for clinker manufacture (calcination) of limestone and consumption of electrical energy will thus be reduced. This approach is considered not to represent common practice in the cement industry in India.

The project proponent has chosen a renewable crediting period of 21 years with the starting date of the first crediting period as 1 April 2004

3.3 Project Baseline

The project applies the approved baseline methodology ACM0005, titled “Consolidated Baseline Methodology for increasing the Blend in Cement Production”.

The baseline methodology adopted is applicable as it has been demonstrated that the project activity:

- Ensures sufficient supply of fly ash and the activity will not lead to other PPC producers to reduce their fly ash blend rate.
- Output is sold domestically and has excluded export of blended cement.
- Adequate data are available on cement types in the market. For the project activity, database from the Cement Manufacturers Association of India has been utilised.



Based on the criteria stipulated in the ACM0005, the project proponents have chosen the regional markets instead of the national market. The Project proponents have selected the region, comprising of Madhya Pradesh (Satna Cluster), Uttar Pradesh, Delhi, Uttaranchal and Bihar. The baseline has been selected by determining the common prevailing clinker percentage of PPC in other manufacturing plants in the selected region that use similar raw material as the project and face similar economic, market and technical circumstances. The data published by the Cement Manufacturers Association of India (CMA) has been sourced for the same. As per the selection criteria stipulated in ACM0005, for selection of the region, it has been justified that,

- i) 94% of total production of the units is sold within the region selected,
- ii) The region selected includes 19 plants (as against 5 plants stipulated in ACM0005) with published data for PPC production and
- iii) Production in the region during the year is more than four times the project activity output.

Moreover, the benchmark for baseline emissions has also been estimated 72.13%, based on the lowest values of the three options stipulated in ACM0005, determined as:

- Based on *the production weighted average mass percentage of clinker in the top 20% (in terms of share of additives) of the total production of the blended cement type in the region* - for all the units

The baseline emission factors from the equations as established by the consolidated methodology ACM0005 and the data used for arriving at the “Baseline emission factor” are validated and found to be in order. JAL has followed the approach that gypsum and additives together constitute as ‘additives’ and accordingly the clinker percentage has been established.

As the project activity is located at sites spread across the western India, the power for grinding and clinker manufacturing activities are drawn from the western regional grid. Consequently, the grid emission factors have been estimated for the western regional grid and the same have been verified to be appropriate. The baseline emission factor has been calculated as a combined margin (CM), consisting of the combination of simple operating margin (OM) and build margin (BM) factors, as per ACM0002 and as required in ACM0005.

It has been evidenced that the project proponent has the relevant records of operating history for the period 2000 to 2004 for the units in question and it has been demonstrated that in the absence of the project activity, it is likely that the existing practice of cement production would have continued.

3.4 Additionality

The additionality of the project activity has been established using the “Tools for the demonstration and assessment of Additionality” approved by the CDM-EB. The project activity primarily demonstrates the additionality through the barriers of technology and prevailing practice

Step 0:

It has been established that CDM was considered prior to the start of the project activity and the following primary documentation to this effect has been evidenced:



- Statement to shareholders at the 8th Annual General Body Meeting
- Internal Management Notes on increasing the fly ash content in February 2004
- Interactions with CDM consultants in 2003-2004

Step 1:

The alternative scenarios identified to the project activity were (1) Increase in additive content in cement production (2) Continue with the existing additive content in cement production, and (3) Further decrease in the additive content in cement production. All three scenarios meet the requirements of the Bureau of Indian Standards specification ARE: 1489 (Part 1) for the production of fly ash blended Pozzolana Portland Cement.

Step 2:

Investment Analysis has not been chosen

Step 3:**Barrier Analysis:**

It has been addressed that OPC cements are more popular among customers and PPC cements of similar quality/grade are not available and hence not widely accepted. Higher investments would be required to develop blended/PPC cements with comparable or superior standards. Moreover, good quality of fly ash is not always ensured by power plants posing risk and challenges for cement manufacturers.

It has been demonstrated by JAL and evidenced through letters from traders that sale of PPC is difficult and tenders from governmental bodies are inviting bids for OPC only, which prove and support the claim that market perception to PPC is poor. The argument by JAL that CDM allows dedicated research and marketing effort to overcome these barriers is considered as reasonable. The resistance to the newer blend of cement in a market used to the normal blend of cement is thus a major barrier, also considering that the project activity is being implemented in all the three plants of the project proponent

Step 4: Common Practice Analysis

The common practice in the cement industry is a fly ash blend level between 15-26% (even though the IS: 1489 specification specifies a limit of 15-35 %). Hence, increasing the blend levels of fly ash beyond 26%, as is the case with the project activity is not considered as common.

Step 5: Impact of CDM registration

The impact of the project's registration as a CDM project will be positive and will likely impact the project proponents' research and marketing efforts towards overcoming the barriers.

In conclusion, it is deemed likely that the project activity would not have been implemented in the absence of the CDM.

3.5 Monitoring Plan

The project applies the approved monitoring methodology ACM0005, titled "Consolidated Baseline Methodology for increasing the Blend in Cement Production".



The monitoring methodology adopted is applicable and justified as the proposed project activity aims to increase the share of additive fly ash in the production of PPC beyond current practices in India.

The baseline emission factor has been calculated as a combined margin (CM), consisting of the combination of simple operating margin (OM) and build margin (BM) factors, as per ACM0002 and as required by ACM0005. The CM has been determined ex ante and verified to be 0.837 tCO₂/MWh.

The monitoring plan adequately addresses all necessary information for monitoring and reporting of emission reductions due to the project activity. All critical data are either measured or calculated and parameters such as cement production, coal consumption, fly ash consumption etc are recorded on a daily basis and archived for the crediting period plus 2 years beyond as per the methodology requirements. The monitoring plan also provides for monitoring of leakage, such as emissions caused by transportation of fly ash. Calibration and maintenance of process instrumentation are also as per approved monitoring methodology and are governed by the company's established procedures contained in its quality management systems. The documentation have been reviewed and revised accordingly to also cover issues such as internal audit, performance reviews and corrective actions pertaining to the blended cement project.

3.6 Calculation of GHG Emissions

The calculation of the GHG emissions has been done as per the ACM0005 version 2. All the aspects related to the direct and indirect GHG emissions have been addressed and the calculations are presented in a transparent manner.

The project, on implementation, is expected to result in reductions of 33 609 tons of CO₂ equivalent per year, during the first seven years of the crediting period.

3.7 Environmental Impacts

Although environmental regulations do not warrant an Environment Impact Assessment (EIA) for projects involving investments less than INR 500 million, JAL has undertaken and completed the process of a "brief EIA". No adverse environmental impacts are foreseen due to the project activity. JAL has also obtained relevant air and water consents from the respective State Pollution Control Boards for all the sites.

3.8 Comments by Local Stakeholders

JAL has identified the following as the stakeholders for the project activity - local community, CMA, NTPC, industry/technical experts and customers/users have been consulted and clearances obtained. Through meetings and interactions, stakeholders were invited to discuss on the environmental and socio-economic impacts of the project activity. Local stakeholders support the project and no modifications to the project design were deemed necessary. As the project is not expected to have considerable social and environmental impacts, the local stakeholder consultation process carried out for the project is deemed sufficient.



4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

According to the modalities for the validation of CDM projects, the validator shall make publicly available the PDD and receive, within 30 days, comments on the validation requirements from Parties, stakeholders and UNFCCC accredited Non-governmental Organisations (NGOs) and make them publicly available.

The PDD has been published on DNV Certification's Climate Change website - <http://www.dnv.com/certification/climatechange/Projects/ProjectDetails.asp?ProjectId=312> on 25th October 2005. Parties, stakeholders and NGOs were through the UNFCCC CDM website invited to provide comments on the validation requirement during a period of 30 days from 26th October to 24th November 2004. No comments were received.



5 VALIDATION OPINION

Det Norske Veritas Certification (DNV Certification) has validated the “Increasing the additive blend in cement production by Jaiprakash Associates Ltd (JAL)”. The validation was performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to the Kyoto Protocol criteria for the CDM, the CDM rules and modalities as agreed in the Marrakech Accords and relevant decisions by the CDM Executive Board.

The review of the project design documentation (PDD) and the subsequent follow-up interviews have provided DNV with sufficient evidence to determine the fulfilment of stated criteria.

Jaiprakash Associates Ltd is the only project participant in this project. The DNA of India has confirmed that the project assists in achieving sustainable development and has accorded the approval for the project.

The validation did not reveal any information indicating that the project can be seen as a diversion of ODA funding towards India.

The project activity will reduce clinker production and associated GHG emissions by displacing clinker with fly ash in the production of Pozzolana Portland Cement. Emissions arising from the calcination of limestone, fossil-fuel based kiln combustion and consumption of electrical energy will be reduced. By increasing the percentage of fly ash in the cement production, the project is expected to result in reductions of 33 609 tons of CO₂ equivalent per year that are real, measurable and gives long-term benefits to the mitigation of climate change. An analysis of relevant barriers demonstrates that the proposed project is not a likely baseline scenario and emission reductions are hence additional to any that would occur in its absence.

The project correctly applies the approved baseline methodology ACM0005, “Consolidated Baseline Methodology for increasing the Blend in Cement Production”. The baseline has been selected by determining the common prevailing clinker percentage of PPC in other manufacturing plants in the selected region that use similar raw material as the project and which face similar economic, market and technical circumstances. It is justified that the proposed project activity itself is not a likely baseline scenario.

In summary, it is DNV’s opinion that the project as described in the PDD of December 2005 meets all relevant UNFCCC requirements for the CDM and correctly applies the approved baseline and monitoring methodology ACM0005. Hence, DNV requests the registration of the “Increasing the additive blend in cement production by Jaiprakash Associates Ltd (JAL)” as a CDM project activity.



REFERENCES

Documents provided by the project proponent that relate directly to the project:

- /1/ Jaiprakash Associates Ltd (JAL) - *Clean Development Mechanism Project Design Document – “Increasing the additive blend in cement production by Jaiprakash Associates Ltd (JAL)”* Version 1.1 of December 2005 and its earlier version
- /2/ Indian DNA, Host country approval letter - dated 24 May 2006

Background documents related to the design and/or methodologies employed in the design or other reference documents:

- /3/ International Emission Trading Association (IETA) & the World Bank’s Prototype Carbon Fund (PCF): *Validation and Verification Manual*. <http://www.vvmanual.info>
- /4/ ACM0005 /Version 02/ 28 November 2005 Consolidated Baseline Methodology for Increasing the Blend in Cement Production Approved methodology
- /5/ IPCC: *Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories*. 2000

Persons interviewed during the validation, or persons who contributed with other information that are not included in the documents listed above:

- /6/ Mr. R.B. Singh (Finance),
Mr. Alok Joshi (Production),
Mr. P.Prakash (Marketing),
Mr. R. Srivastava (Corporate representative),
Mr. A.Pandey and Mr. A. Sangal (Emergent Ventures)

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PPENDIX A

CDM VALIDATION PROTOCOL

Table 1 Mandatory Requirement for Clean Development Mechanism (CDM) Project Activities

Requirement	Reference	Conclusion	Cross Reference / Comment
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3	Kyoto Protocol Art.12.2	OK	Table 2, Section E.4.1
2. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof	Kyoto Protocol Art. 12.2, CDM Modalities and Procedures §40a	OK	Table 2, Section A.3
3. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC	Kyoto Protocol Art.12.2.	OK	Table 2, Section E.4.1
4. The project shall have the written approval of voluntary participation from the designated national authority of each party involved	Kyoto Protocol Art. 12.5a, CDM Modalities and Procedures §40a	CAR-1	A letter of Approval from Indian DNA dated 24 May 2006
5. The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change	Kyoto Protocol Art. 12.5b	OK	Table 2, Section E
6. Reduction in GHG emissions shall be additional to any that would occur in absence of the project activity, i.e. a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity	Kyoto Protocol Art. 12.5c, CDM Modalities and Procedures §43	OK	Table 2, Section B.2
7. Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance	Decision 17/CP.7	OK	The project has been proposed as an unilateral project
8. Parties participating in the CDM shall designate a national authority for the CDM	CDM Modalities and Procedures §29	OK	The Indian DNA for CDM is the National Clean Development Mechanism (CDM) Authority.

Requirement	Reference	Conclusion	Cross Reference / Comment
9. The host Party and the participating Annex I Party shall be a Party to the Kyoto Protocol	CDM Modalities §30/31a	OK	India has ratified the Kyoto protocol on 26 August 2002.
10. The participating Annex I Party's assigned amount shall have been calculated and recorded	CDM Modalities and Procedures §31b	OK	The project has been proposed as an unilateral project
11. The participating Annex I Party shall have in place a national system for estimating GHG emissions and a national registry in accordance with Kyoto Protocol Article 5 and 7	CDM Modalities and Procedures §31b	OK	The project has been proposed as an unilateral project
12. Comments by local stakeholders shall be invited, a summary of these provided and how due account was taken of any comments received	CDM Modalities and Procedures §37b	OK	Table 2, Section G
13. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out.	CDM Modalities and Procedures §37c	OK	Table 2, Section F
14. Baseline and monitoring methodology shall be previously approved by the CDM Executive Board	CDM Modalities and Procedures §37e	OK	Table 2, Section B.1.1 and D.1.1
15. Provisions for monitoring, verification and reporting shall be in accordance with the modalities described in the Marrakech Accords and relevant decisions of the COP/MOP	CDM Modalities and Procedures §37f	OK	Table 2, Section D
16. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days, and the project design document and comments have been made publicly available	CDM Modalities and Procedures §40	OK	The PDD has been published on DNV's Climate Change website. Parties, stakeholders and NGOs were through the UNFCCC CDM website invited to

Requirement	Reference	Conclusion	Cross Reference / Comment
			provide comments on the validation requirement during a period of 30 days from 26 October to 24 November 2005. No comments were received.
17. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances	CDM Modalities and Procedures §45c,d	OK	Table 2, Section B.2
18. The baseline methodology shall exclude to earn CERs for decreases in activity levels outside the project activity or due to force majored	CDM Modalities and Procedures §47	OK	Table 2, Section B.2
19. The project design document shall be in conformance with the UNFCCC CDM-PDD format	CDM Modalities and Procedures Appendix B, EB Decision	OK	

Table 2 Requirements Checklist

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
A. General Description of Project Activity <i>The project design is assessed.</i>					
A.1. Project Boundaries <i>Project Boundaries are the limits and borders defining the GHG emission reduction project.</i>					
A.1.1. Are the project's spatial (geographical) boundaries clearly defined?	/1/	DR,I	The project activity covers 3 existing plants of JAL. Two of the plants are located in Rewa and Bela districts of Madhya Pradesh, India and the third is in Sadva Khurd, in Allahabad district of Uttar Pradesh, India. Addresses of these sites are clearly defined in the PDD in section A.4.1		OK
A.1.2. Are the project's system (components and facilities used to mitigate GHGs) boundaries clearly defined?	/1/	DR, I	The project system boundaries include the cement production plant, onsite power generation and the power generation in the grid.		OK
A.2. Technology to be employed <i>Validation of project technology focuses on the project engineering, choice of technology and competence/ maintenance needs. The validator should ensure that environmentally safe and sound technology and know-how is used.</i>					
A.2.1. Does the project design engineering reflect current good practices?	/1/	DR, I	The objective of the proposed project activity is to develop PPC grades with high		OK

* MoV = Means of Verification, DR= Document Review, I= Interview

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			fly-ash content, beyond the current levels used in Satan Cluster of India, to replace clinker in the manufacturing of PPC. The project does not involve any major changes with regard to the manufacturing technology and reflects current good practices.		
A.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?	/1/	DR, I	The technology for blending fly ash was indigenously developed by JAL. It will enable utilisation of fly ash beyond the current average blend level used in Satan Cluster of India.		OK
A.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	/1/	DR	It is unlikely that the project technology will be substituted by other more efficient technologies within the project period.		OK
A.2.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	/1/	DR	Since there are no major changes in the production technology, extensive initial training might not be required. However, the same has not been addressed in the PDD clearly.	GL-1	OK
A.2.5. Does the project make provisions for meeting training and maintenance needs?	/1/	DR	Training and maintenance needs have not been addressed in the PDD	GL-1	OK
A.3. Contribution to Sustainable Development <i>The project's contribution to sustainable development is assessed.</i>					
A.3.1. Is the project in line with relevant legislation and plans in the host country?	/1/	DR	The proposed project is a voluntary initiative by JAL. There are no regulatory requirements related to blended cements in India. Except IS 1489 (part 1) which		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			stipulates that the fly ash content in the blended cement must vary between 15% and 35%. The project otherwise complies with all the rules and regulations of the host country.		
A.3.2. Is the project in line with host-country specific CDM requirements?	/1/	DR	Evidence of host country approval has not been provided	CAR-1	OK
A.3.3. Is the project in line with sustainable development policies of the host country?	/1/	DR	As in A.3.2	CAR-1	OK
A.3.4. Will the project create other environmental or social benefits than GHG emission reductions?	/1/	DR	Yes, the project will create other benefits such as creating new employment opportunities, contributing to reduced energy requirements, limestone conservation and reducing problems associated with handling, storage and disposal of fly ash.		OK
B. Project Baseline					
<i>The validation of the project baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline scenario.</i>					
B.1. Baseline Methodology					
<i>It is assessed whether the project applies an appropriate baseline methodology.</i>					
B.1.1. Is the baseline methodology previously approved by the CDM Executive Board?	/1/	DR	Yes, the project applies approved consolidated baseline methodology ACM0005 "Consolidated methodology for increasing the blend in cement production".		OK
B.1.2. Is the baseline methodology the one deemed	/1/	DR	Yes, the chosen baseline methodology is	GL-2	OK

* MoV = Means of Verification, DR= Document Review, I= Interview

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
most applicable for this project and is the appropriateness justified?			<p>applicable to the proposed project activity as the project aims to increase the share of additive fly ash in the production of PPC beyond current practices in India.</p> <p>It has been demonstrated that the project activity:</p> <ul style="list-style-type: none"> • Ensures sufficient supply of fly ash and the activity will not lead to other PPC producers to reduce their fly ash blend rate. • Output is sold domestically and has excluded export of blended cement • Has obtained a database from the Cement Manufacturers Association of India. <p>Evidence that fly ash is abundantly available and that otherwise, this would have been dumped onto wasteland, as indicated in the PDD shall be clearly demonstrated.</p>		
B.2. Baseline Determination <i>The choice of baseline will be validated with focus on whether the baseline is a likely scenario, whether the project itself is not a likely baseline scenario, and whether the baseline is complete and transparent.</i>					
B.2.1. Is the application of the methodology and the discussion and determination of the chosen baseline transparent?	/1/	DR, I	<p>Yes, the discussion and application of the chosen baseline is transparent.</p> <p>The benchmark for baseline emissions has been estimated based on the lowest values of the three options stipulated in ACM0005</p>	CL-3	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			<p>However, the benchmark chosen is not clear for the following reasons:</p> <ul style="list-style-type: none"> Option II and Option III, both are estimated at 72.34%, but option III is chosen without justification. Option II has been estimated based on Clinker percentage in top 10% by share of additives, while ACM0005 stipulates estimation based on Clinker percentage in top 20% by share of additives 		
B.2.2. Has the baseline been determined using conservative assumptions where possible?	/1/	DR	<p>Instead of the national market the project proponents have chosen the regional markets, based on the criteria stipulated in the ACM0005.</p> <p>Moreover, the baseline does not take account of any other GHG gases other than CO₂, Changes in CH₄ and N₂O emissions are considered as negligible and are not taken into account which makes it conservative in nature</p> <p>In the emission reduction calculation the baseline additive (which is taken as 100-clinker %) is not having the endogenous increase of 2% built into it. So the estimation is not correct. Even though the project developer has gone for the renewable crediting period, they have to choose between either annual updation of baseline or ex-ante determination of</p>	CAR-2	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			baseline with an endogenous trend built into the baseline determination. Only at the start of the next crediting period the baseline has to be re-evaluated and determined		
B.2.3. Has the baseline been established on a project-specific basis?	/1/	DR	The baseline has been determined taking into view all the policies/legislations related to cement manufacturing and by mapping all cement manufactures producing PPC type of Blended cement only.		OK
B.2.4. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	/1/	DR	As per the methodology the baseline is selected by determining the common prevailing clinker percentage of PPC in other manufacturing plants in the selected region who use similar raw material as the project and face similar economic, market and technical circumstances.		OK
B.2.5. Is the baseline determination compatible with the available data?	/1/	DR	Yes. The baseline has been determined based on data published by the Cement Manufacturers Association of India (CMA).		OK
B.2.6. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	/1/	DR	In the absence of the project activity, it is very likely that the existing practice of cement production would have continued.		OK
B.2.7. Is it demonstrated/justified that the project activity itself is not a likely baseline scenario?	/1/	DR, I	Yes, the project additionality has been demonstrated through the latest tool for additionality: Step 0: the start date of the project activity is April 2004 Step 1: 3 alternatives to the proposed project activity have been identified and all of them are consistent with the current laws and regulations.	GL4	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			<p>Step 2: Barrier analysis:</p> <p>Technological barriers: It has been argued that OPC cements are more popular among customers and PPC cements of similar quality/grade are not available and hence not widely accepted. Higher investments would be required to develop blended/PPC cements with comparable or superior standards.</p> <p>Moreover, good quality of fly ash is not always ensured by power plants posing risk and challenge for cement manufacturers.</p> <p>Market acceptability barrier: It has been presented that the perception that blended cement does not have the same strength as OPC and limited usage applications of PPC make it less acceptable in the market.</p> <p>Step 3: Common practice analysis: there are no other similar project activities within the project boundary.</p> <p>Step 4: The carbon credits received from the CDM project activity will help remove market barriers restricting increased fly ash content in blended cement.</p> <p>In our opinion, it remains to be more clearly demonstrated that project activity is additional, in the absence of:</p> <ol style="list-style-type: none"> 1. Evidence of project implementation in 2004 – shall be provided. 2. Evidence of considering CDM incentives at the start of the project 		

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			<p>activity shall be provided.</p> <p>3. Step 1 a: how is it demonstrated that in the past few years that additive content in blended cement has stagnated.</p> <p>4. How can it be demonstrated that Most of the investments in infrastructure sector has been made by Government owned companies only</p> <p>5. Step 3:</p> <p>a. Technological barrier arguments – how is this differentiated from other cement plants?</p> <p>b. All documents and evidences as indicated in the PDD for market acceptability barrier shall be submitted</p> <p>6. Common practice: evidence that fly ash content in blended cement ranges from 15% to 26% in most of the other cement plants in the system boundary.</p> <p>7. Product related evidences under step 4.</p> <p>Moreover, it is not convincing that technological and prevailing practice barriers are sufficiently big to prevent JAL from going ahead with the project even without CDM.</p>		

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
B.2.8. Have the major risks to the baseline been identified?	/1/	DR	No risks to the baseline have been identified.		OK
B.2.9. Is all literature and sources clearly referenced?	/1/	DR	Yes		OK
C. Duration of the Project/ Crediting Period <i>It is assessed whether the temporary boundaries of the project are clearly defined.</i>					
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	/1/	DR	The project start date is April 1 st 2004 and the operational lifetime is 25 years.		OK
C.1.2. Is the assumed crediting time clearly defined (renewable crediting period of seven years with two possible renewals or fixed crediting period of 10 years with no renewal)?	/1/	DR	The project adopts a renewable crediting period of 7 years, starting from 1 st April 2004.		OK
D. Monitoring Plan <i>The monitoring plan review aims to establish whether all relevant project aspects deemed necessary to monitor and report reliable emission reductions are properly addressed ((Blue text contains requirements to be assessed for optional review of monitoring methodology prior to submission and approval by CDM EB).</i>					
D.1. Monitoring Methodology <i>It is assessed whether the project applies an appropriate baseline methodology.</i>					
D.1.1. Is the monitoring methodology previously approved by the CDM Executive Board?	/1/	DR	The monitoring methodology is per the approved methodology ACM0005 for "increasing the blend in cement production".		OK
D.1.2. Is the monitoring methodology applicable for this project and is the appropriateness justified?	/1/	DR	Yes, the chosen monitoring methodology is applicable to the proposed project activity		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			as the project aims to increase the share of additive fly ash in the production of PPC beyond current practices in India.		
D.1.3. Does the monitoring methodology reflect good monitoring and reporting practices?	/1/	DR	Yes. All relevant data as stipulated in the approved monitoring methodology have been addressed in the PDD.		OK
D.1.4. Is the discussion and selection of the monitoring methodology transparent?	/1/	DR	Yes		OK
D.2. Monitoring of Project Emissions <i>It is established whether the monitoring plan provides for reliable and complete project emission data over time.</i>					
D.2.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	/1/	DR	All relevant data necessary for the estimation or measuring the GHG emissions within the project boundary have been included in the monitoring plan.		OK
D.2.2. Are the choices of project GHG indicators reasonable?	/1/	DR	Project emissions per tonne of blended cement, T CO ₂ /T of BC has been chosen as GHG indicator.		OK
D.2.3. Will it be possible to monitor / measure the specified project GHG indicators?	/1/	DR	Yes. It will be possible to monitor the specified project GHG indicators.		OK
D.2.4. Will the indicators give opportunity for real measurements of project emissions?	/1/	DR, I	The parameters to be monitored to evaluate the emissions due to the project activities are measurable and has been confirmed on site visit that they can be monitored for real and recorded as per the format.		OK
D.2.5. Will the indicators enable comparison of project data and performance over time?	/1/	DR	Yes		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
D.3. Monitoring of Leakage <i>It is assessed whether the monitoring plan provides for reliable and complete leakage data over time.</i>					
D.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	/1/	DR, I	Leakage emissions for transport of additives have been adequately addressed.		OK
D.3.2. Are the choices of leakage indicators reasonable?	/1/	DR	The leakages are identified for emissions related to transport of additive which increases due to the project activity.		OK
D.3.3. Will it be possible to monitor / measure the specified leakage indicators?	/1/	DR	As the units have the flexibility to run on OPC or PPC, the plan does not address recording of running hours of the conveying system for additives under PPC production specifically.	GL-5	OK
D.3.4. Will the indicators give opportunity for real measurements of leakage effects?	/1/	DR	Yes		OK
D.4. Monitoring of Baseline Emissions <i>It is established whether the monitoring plan provides for reliable and complete project emission data over time.</i>					
D.4.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining baseline emissions during the crediting period?	/1/	DR	Yes, the baseline indicators have been chosen in line with the ACM0005. Captive power and grid power have also been considered in the baseline.		OK
D.4.2. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	/1/	DR	The baseline is evaluated ex-post for each crediting year and the emission due to calcinations, clinker generation both due to consumption of grid electricity and captive generation and grinding /preparation of		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			additive is taken care of.		
D.4.3. Will it be possible to monitor / measure the specified baseline indicators?	/1/	DR	The baseline indicators are all based on available data and actual records of plant operations.		OK
D.4.4. Will the indicators give opportunity for real measurements of baseline emissions?	/1/		Yes.		OK
D.5. Monitoring of Sustainable Development Indicators/ Environmental Impacts <i>It is checked that choices of indicators are reasonable and complete to monitor sustainable performance over time.</i>					
D.5.1. Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts?	/1/	DR	The monitoring of sustainable development indicators has not been included in the monitoring plan. However, this is considered acceptable as the DNA of India does not warrant monitoring of such indicators.		OK
D.6. Project Management Planning <i>It is checked that project implementation is properly prepared for and that critical arrangements are addressed.</i>					
D.6.1. Is the authority and responsibility of project management clearly described?	/1/	DR, I	Authority and responsibility of project management has not been clearly addressed.	CAR-3	OK
D.6.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	/1/	DR, I	No. Authority and responsibility for registration, monitoring, measurement and reporting has not been described.	CAR-3	OK
D.6.3. Are procedures identified for training of monitoring personnel?	/1/	DR, I	Procedures exist as part of the quality management systems of the company. The		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			company is certified to ISO 9001 systems.		
D.6.4. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	/1/	DR	As in D.6.3		OK
D.6.5. Are procedures identified for calibration of monitoring equipment?	/1/	DR	As in D.6.3		OK
D.6.6. Are procedures identified for maintenance of monitoring equipment and installations?	/1/	DR	As in D.6.3		OK
D.6.7. Are procedures identified for monitoring, measurements and reporting?	/1/	DR	As in D.6.3		OK
D.6.8. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	/1/	DR	Most the data is archived in electronic format which are preserved as per standard procedures laid down by the organisation. The procedure has been checked and found to be adequate.		OK
D.6.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	/1/	DR	Procedures exist as part of the quality management systems of the company. Company is certified to ISO 9001 systems.		OK
D.6.10. Are procedures identified for review of reported results/data?	/1/	DR	Same as D.6.3		OK
D.6.11. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	/1/	DR, I	No procedures identified have been identified for internal audits of GHG project compliance with operational requirements.	GAR-3	OK
D.6.12. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	/1/	DR, I	No procedures have been identified for project performance reviews before data is submitted for verification, internally or externally.	GAR-3	OK
D.6.13. Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	/1/	DR, I	No procedures identified have been identified for corrective actions in order to provide for more accurate future monitoring	GAR-2	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			and reporting.		
E. Calculation of GHG Emissions by Source <i>It is assessed whether all material GHG emission sources are addressed and how sensitivities and data uncertainties have been addressed to arrive at conservative estimates of projected emission reductions.</i>					
E.1.Predicted Project GHG Emissions <i>The validation of predicted project GHG emissions focuses on transparency and completeness of calculations.</i>					
E.1.1. Are all aspects related to direct and indirect GHG emissions captured in the project design?	/1/	DR, I	All relevant direct and indirect GHG emissions have been captured in the project design and through the application of the methodology.		OK
E.1.2. Are the GHG calculations documented in a complete and transparent manner?	/1/	DR	From the calculations provided it is presumed that all future production capacities for the coming years will be catering to the domestic market only.		OK
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?	/1/	DR	Yes		OK
E.1.4. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	/1/	DR	No uncertainties in the GHG emission estimates have been forecasted.		OK
E.1.5. Have all relevant greenhouse gases and source categories listed in Kyoto Protocol Annex A been evaluated?	/1/	DR	Yes, mainly CO ₂		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
E.2.Leakage <i>It is assessed whether there leakage effects, i.e. change of emissions which occurs outside the project boundary and which are measurable and attributable to the project, have been properly assessed.</i>					
E.2.1. Are potential leakage effects beyond the chosen project boundaries properly identified?	/1/	DR	<p>Yes Potential leakage effects are related to transportation of fly ash to plant site are identified.</p> <p>The following needs to be clarified.</p> <ul style="list-style-type: none"> It is not clear whether the leakage calculations consider transportation of coarse fly ash back to Reva? Updates in ACM 0005 (Version 02 dated 28 November 2005) with changes to leakage related calculations (Equations 2 and 2.1 of the methodology) needs to be incorporated into the PDD in section D.2.3.2 and Section E.2. Corresponding figures of 'Estimation of leakage' and 'Estimation of emissions reductions' in section E.6 will need to be rechecked. This may also mean a change in estimated emissions reductions figures for all locations given in A.4.4.1 	CAR-4	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
E.2.2. Have these leakage effects been properly accounted for in calculations?	/1/	DR	The calculation accounts for the emissions due to the transportation of the excess amount of additive due to the project activity Pending E.2.1 above	CAR-4	OK
E.2.3. Does the methodology for calculating leakage comply with existing good practice?	/1/	DR	Pending E.2.1 above	CAR-4	OK
E.2.4. Are the calculations documented in a complete and transparent manner?	/1/	DR	ACM0005 prescribes diversion of additives from existing uses be addressed as leakage. The approved methodology calls for discounting the proportion of additive (fly ash) whose surplus availability is not substantiated It needs to be demonstrated as what are the future requirements of the additives in all the units? Have future expansion plans been taken into account? This is not apparent in the PDD for the three units.	GL-6	OK
E.2.5. Have conservative assumptions been used when calculating leakage?	/1/	DR	Pending E.2.1 above	CAR-4	OK
E.2.6. Are uncertainties in the leakage estimates properly addressed?	/1/	DR	Pending E.2.1 above	CAR-4	OK
E.3. Baseline Emissions <i>The validation of predicted baseline GHG emissions focuses on transparency and completeness of calculations.</i>					
E.3.1. Have the most relevant and likely operational characteristics and baseline indicators been chosen as reference for baseline emissions?	/1/	DR	Yes		OK
E.3.2. Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for	/1/	DR	The baseline takes into account all the possible sources of emissions and is in line		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
baseline emissions?			with the approved baseline methodology ACM0005 which is applicable for this project		
E.3.3. Are the GHG calculations documented in a complete and transparent manner?	/1/	DR	While M.P grid has been selected for CM (OM, BM) calculations, the recent Meth Panel guideline advocates use of regional grid data for emission factor determination for countries such as India.	CL7	OK
E.3.4. Have conservative assumptions been used when calculating baseline emissions?	/1/	DR	Yes		OK
E.3.5. Are uncertainties in the GHG emission estimates properly addressed in the documentation?	/1/	DR	No uncertainties in the GHG emission estimates have been identified.		OK
E.3.6. Have the project baseline(s) and the project emissions been determined using the same appropriate methodology and conservative assumptions?	/1/	DR	Yes		OK
E.4.Emission Reductions Validation of baseline GHG emissions will focus on methodology transparency and completeness in emission estimations.					
E.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	/1/	DR	Yes, the project is expected to reduce 31645.7 tCO ₂ e per year resulting in total emission reductions of 221 459.6 tCO ₂ .		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
F. Environmental Impacts <i>Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an EIA should be provided to the validator.</i>					
F.1.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	/1/	DR, I	Impacts are primarily on air – due to the increased quantities of fly ash handled in the project activity. However, these are considered insignificant.		OK
F.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	/1/	DR	EIA is not required for this kind of project activity. However EIA was done at the start of plant and is considered general practice.		OK
F.1.3. Will the project create any adverse environmental effects?	/1/	DR	No significant negative impacts are expected to occur.		OK
F.1.4. Are transboundary environmental impacts considered in the analysis?	/1/	DR	No significant transboundary impacts are expected to occur due to the project activity.		OK
F.1.5. Have identified environmental impacts been addressed in the project design?	/1/	DR	Impacts have been sufficiently addressed and controls in place.		OK
F.1.6. Does the project comply with environmental legislation in the host country?	/1/	DR	It remains to be clarified whether all the units have valid environmental permits such as the Air Consent and the Water Consent. Evidences for each of the units shall be submitted.	GL-8	OK
G. Stakeholder Comments <i>The validator should ensure that a stakeholder comments have been invited and that due account has been taken of any comments received.</i>					
G.1.1. Have relevant stakeholders been consulted?	/1/	DR, I	Yes, stakeholders like local community, government representatives, customers,	GL-9	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			power plants, cement manufacturers etc., have been consulted. However, It is not clear from the PDD the following: 1. At what intervals is stakeholder consultation process carried out – PDD indicates at periodic intervals? 2. When were the last consultations carried out? 3. Did they cover all three sites? 4. What is the exact process of consultation adopted? 5. What were the comments received? 6. The communication letter from the district magistrate is not evident Evidence for all the above.		
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	/1/	DR	Communication was primarily made through letters.		OK
G.1.3. 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?	/1/	DR	Not required for change in the percentage of Fly Ash in PPC.		OK
G.1.4. Is a summary of the stakeholder comments received provided?	/1/	DR	As in G.1.1	CL-9	OK
G.1.5. Has due account been taken of any stakeholder comments received?	/1/	DR	As in G.1.1	CL-9	OK

Table 3 Resolution of Corrective Action and Clarification Requests

Draft report corrective action requests and requests for clarifications	Ref. to Table 2	Summary of project participants' response	Final conclusion
CAR 1: Evidence of host country approval (HCA) has not been provided	A.3.2	Scanned copy of the same provided to DOE.	HCA letter dated 24 May 2006 has been provided. The Corrective Action Request is closed.
CAR 2: In the emission reduction calculation the baseline additive (which is taken as 100-clinker %) is not having the endogenous increase of 2% built into it. So the estimation is not correct. Even though the project developer has gone for the renewable crediting period, they have to choose between either annual updation of baseline or ex-ante determination of baseline with an endogenous trend built into the baseline determination. Only at the start of the next crediting period the baseline has to be re-evaluated and determined.	B.2.2	An endogenous trend of 2% increase has now been considered and an ex-ante determination of the baseline has now been carried out.	Revised PDD and the emission calculations now address an endogenous trend of 2% increase and an ex-ante determination of the baseline has now been carried out. The Corrective Action Request is closed.
CAR 3: Following procedures shall be made clear: <ul style="list-style-type: none"> • Authority and responsibility of project management • registration, monitoring, measurement and reporting • internal audits of GHG project compliance with operational requirements • for project performance reviews before data is submitted for verification, internally 	D.6.1, 6.2, 6.11, 6.12, 6.13	Monitoring plan modified. Monitoring plan to be made part of ISO systems.	Accepted. Complimentary information provided has been verified. The Corrective Action Request is closed.

Draft report corrective action requests and requests for clarifications	Ref. to Table 2	Summary of project participants' response	Final conclusion
<p>or externally</p> <ul style="list-style-type: none"> corrective actions in order to provide for more accurate future monitoring and reporting 			
<p>CAR 4: The following needs to be clarified.</p> <ul style="list-style-type: none"> It is not clear whether the leakage calculations consider transportation of coarse fly ash back to Reva? Updates in ACM 0005 (Version 02 dated 28 November 2005) with changes to leakage related calculations (Equations 2 and 2.1 of the methodology) needs to be incorporated into the PDD in section D.2.3.2 and Section E.2. <p>Corresponding figures of 'Estimation of leakage' and 'Estimation of emissions reductions' in section E.6 will need to be rechecked. This may also mean a change in estimated emissions reductions figures for all locations given in A.4.4.1</p>	E.2.1	<p>Transportation related leakages included. PDD Modified according to new methodology version 2. ER Estimations modified.</p>	<p>Accepted. The revised PDD now addresses the following:</p> <ul style="list-style-type: none"> Leakages due to transportation of fly ash back to Reva. ACM 0005, version 02 <p>Revised estimation of emission reductions has also been verified.</p> <p>The Corrective Action Request is closed</p>
<p>CL 1: Since there are no major changes in the production technology, extensive initial training might not be required. However, the same has not been addressed in the PDD clearly.</p>	A.2.4, 2.5	PDD modified to incorporate training requirements.	<p>Accepted. Training requirements have now been addressed in the PDD.</p> <p>Clarification Request is closed.</p>

Draft report corrective action requests and requests for clarifications	Ref. to Table 2	Summary of project participants' response	Final conclusion
CL 2: Evidence that fly ash is abundantly available and that otherwise, this would have been dumped onto wasteland, as indicated in the PDD shall be clearly demonstrated.	B.1.2	Evidences provided (1- Contract copies with thermal power stations to supply flyash, 2- Government papers showing abundance of flyash in Indian market)	Complimentary information provided has been accepted and accepted. Clarification Request is closed.
CL 3 The benchmark chosen is not clear for the following reasons: <ul style="list-style-type: none"> Option II and Option III, both are estimated at 72.34%, but option III is chosen without justification. Option II has been estimated based on Clinker percentage in top 10% by share of additives, while ACM0005 stipulates estimation based on Clinker percentage in top 20% by share of additives 	B.2.1	Typographic error. PDD Modified.	Revised PDD has now addressed the following: <ul style="list-style-type: none"> The average (weighted by production) mass percentage of clinker for the 5 highest blend cement brands for the relevant cement type in the region, to be 73.13% The production weighted average mass percentage of clinker in the top 20% (in terms of share of additives) of the total production of the blended cement type in the region, to be 72.31% The mass percentage of clinker in the relevant cement type produced in the proposed project activity plant before the implementation of the CDM project activity, to be 72.34% As stipulated in the methodology, the baseline benchmark has been set to be the lowest clinker value amongst the

Draft report corrective action requests and requests for clarifications	Ref. to Table 2	Summary of project participants' response	Final conclusion
			three options, i.e., 72.31%. Clarification Request is closed
<p>CL 4: In our opinion, it remains to be more clearly demonstrated that project activity is additional, in the absence of:</p> <ol style="list-style-type: none"> 1. Evidence of considering CDM incentives at the start of the project activity shall be provided. 2. Step 1 a: how is it demonstrated that in the past few years that additive content in blended cement has stagnated. 3. Step 3: <ol style="list-style-type: none"> a. Technological barrier arguments – how is this differentiated from other cement plants? b. All documents and evidences as indicated in the PDD for market acceptability barrier shall be submitted <p>Moreover, it is not convincing that technological and prevailing practice barriers are sufficiently big to prevent JAL from going ahead with the project even without CDM</p>	B.2.7	<p>Evidences provided.</p> <p>Past few years data showing stagnation in flyash content in PPC, provided in the PDD table 2.</p> <p>The project promoters (largest Player in the region requiring flyash from different sources, developed different brands of blended cements meeting technical requirements and first to introduce 55 Mpa strength blended cement (highest in the segment)</p> <p>Letter from traders saying that PPC selling is very difficult due to market perception and, tenders inviting only OPC from government bodies provided for market acceptability barriers.</p> <p>The biggest barrier for high additive content PPC is market acceptance. Evidences provided for the same.</p> <p>PDD has been revised appropriately addressing the issues.</p>	<p>The following evidences provided have been reviewed and accepted for points (1)</p> <ul style="list-style-type: none"> • Statement to shareholders at the 8th Annual General Body Meeting • Internal Management Notes on increasing the fly ash content in February 2004 • Interactions with CDM consultants in 2003-2004 <p>In the revised PDD the barrier analysis has been elaborated upon, to bring out the barriers associated with technical and market resistance to the high blend of fly ash cement. The argument by JAL that CDM allows dedicated research and marketing effort to overcome these barriers is considered as reasonable</p> <p>Letters from traders indicating that sale of PPC is difficult and tenders inviting bids for OPC only from government bodies provided by JAL support the claim that market perception to PPC is</p>

Draft report corrective action requests and requests for clarifications	Ref. to Table 2	Summary of project participants' response	Final conclusion
			poor. Complimentary information provided is accepted. Clarification Request is closed.
CL 5: As the units have the flexibility to run on OPC or PPC, the plan does not address recording of running hours of the conveying system for additives under PPC production specifically	D.3.3	Monitoring plan modified.	Accepted. Monitoring plan has been revised.
CL 6: ACM0005 prescribes diversion of additives from existing uses be addressed as leakage. The approved methodology calls for discounting the proportion of additive (fly ash) whose surplus availability is not substantiated It needs to be demonstrated as what are the future requirements of the additives in all the units? Have future expansion plans been taken into account? This is not apparent in the PDD for the three units	E.2.4	Surplus availability of flyash was shown by presenting contract copies with thermal power plants to supply flyash. This point was also substantiated by showing Government of India report on surplus availability of flyash in India. Currently less than 15% flyash produced in India is used for some commercial purposes, hence no leakage (through diversion from other use) is expected, also abundance of flyash shall meet future requirement in the plants.	Complimentary information provided is accepted. Clarification request is closed.
CL 7: While M.P grid has been selected for CM (OM,BM) calculations, the recent Meth Panel guideline advocates use of regional grid data for emission factor determination for countries such as India	E.3.3	PDD Modified. Western Regional Grid chosen for grid electricity emission factor.	Accepted. The revised PDD appropriately addresses the western regional grid for estimating the electricity emission factor. Clarification Request is closed.
CL 8: It remains to be clarified whether all the units have valid environmental permits such as the	F.1.6	All three units have obtained all necessary approvals for plant operations.	Evidences have been verified.

Draft report corrective action requests and requests for clarifications	Ref. to Table 2	Summary of project participants' response	Final conclusion
Air Consent and the Water Consent. Evidences for each of the units shall be submitted		Evidences shown during site visit.	Clarification Request is closed.
CL 9: It is not clear from the PDD the following: <ul style="list-style-type: none"> • At what intervals is stakeholder consultation process carried out – PDD indicates at periodic intervals? • When were the last consultations carried out? • Did they cover all three sites? • What is the exact process of consultation adopted? • What were the comments received? • The communication letter from the district magistrate is not evident Evidence for all the above.	G.1.1	A formal Stakeholder consultation with local community carried out once prior to PDD submission. Meetings were held in all three locations. Exact process of consultation included in the revised PDD. No adverse comment received for the project. Letter was sent to DM, but no comments received till date from DM office. Evidences provided during site visit.	The PDD now addresses the process clearly. Clarification Request is closed

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