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Verification Report

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Prototype Carbon Fund The World Bank

Initial and First Periodic Verification of the registered CDM project

Indocement Blended Cement Project UNFCCC Reference No.0526

Report No. 885887

19 November 2009

**TÜV SÜD Industrie Service GmbH
Carbon Management Service
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Initial and First Periodic Verification of the CDM Project:

Indocement Blended Cement Project, UNFCCC Reference No.0526



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Summary: The certification body “Climate and Energy” of TÜV SÜD Industrie Service GmbH has been ordered by The Worldbank to carry out the initial and the first periodic verification of the registered CDM project “Indocement Blended Cement Project, UNFCCC Reference No.0526, performed by PT INDOCEMENT TUNGGAL PRAKARSA Tbk. (Indocement). The verifier confirms that the project is implemented as planned and described in validated project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project does generate GHG emission reductions. The verifier can confirm that the GHG emission reduction for the whole monitoring period is calculated without material misstatements. Our opinion relates to the project’s GHG emissions and resulting GHG emissions reductions reported and related to the valid and registered project baseline and monitoring, and its associated documents. Based on the information we have seen and evaluated we confirm the following statement: Reporting period: 01-01-2005 to 31-10-2006 Verified emission in the above reporting period: <table><tr><td colspan="2">Total</td></tr><tr><td>Baseline emissions</td><td>14.690.465 t CO2eq</td></tr><tr><td>Project emissions</td><td>14.591.936 t CO2eq</td></tr><tr><td>Leakage emission</td><td>3 573 t CO2eq</td></tr><tr><td>Emission Reductions:</td><td>94.956 t CO2eq</td></tr></table> The verification team also determined some few areas of risks for the project in the context of the management / operation system and of quality assurance. Issues indicated as “Forward Action Request” should be submitted as indispensable information to the verification team of the next periodic verification.					Total		Baseline emissions	14.690.465 t CO2eq	Project emissions	14.591.936 t CO2eq	Leakage emission	3 573 t CO2eq	Emission Reductions:	94.956 t CO2eq
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Work carried out by: Thomas Kleiser (Assessment Team Leader) Markus Knödseder (project manager) Sunil Kathuria (GHG auditor) Robert Mitterwallner (GHG auditor)			Internal Quality Control by: Rachel Zhang (deputy head of certification body)											



Abbreviations

Abbreviations that have been used in the report here:

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CO₂eq	CO ₂ equivalent
DNA	Designated National Authority
ERU	Emission Reduction Unit
FAR	Forward Action Request
GHG	Greenhouse Gas
IETA	International Emission Trading Association
Indocement	PT INDOCEMENT TUNGGAL PRAKARSA Tbk.
IVC	Initial Verification Checklist
JI	Joint Implementation
KP	Kyoto Protocol
MP	Monitoring Plan
MVP	Monitoring and Verification Protocol
PDD	Project Design Document
PPA	Power Purchase Agreement
PVC	Periodical Verification Checklist
The Worldbank	Prototype Carbon Fund – The World Bank
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	UN Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1 INTRODUCTION

The Prototype Carbon Fund (PCF) has commissioned an independent verification by TÜV Industrie Service GmbH (TÜV SÜD) of its registered CDM project “Indocement Blended Cement Project, UNFCCC Reference No.0526. The order includes the initial and first periodic verification of the project.

Verification is the periodic independent review and ex post determination by the Designated Operational Entity / Independent Entity of the monitored reductions in GHG emissions during the defined verification period.

This report summarizes the findings of the initial and first periodic verification. It is based on the Validation and Verification Manual (VVM) published by International Emission Trading Association (IETA) in 2008.

Initial and first periodic verification has been performed as one integrated activity. It consisted of a desk review of the project documents including PDD, monitoring plan, validation report, Monitoring Manual, draft monitoring report (January 2005 – October 2006) and further documentations.

The results of the determination were documented by DNV in the validation report: “Indocement Blended Cement Project in Indonesia”, report no. 2006-0210, rev. 1, dated 2006-08-18. This final validation report indicates no remaining issues.

The verification team consists of the following personnel (Markus Knödlse-der left after the first upload of monitoring and verification report TÜV SÜD Industrie Service GmbH and therefore have been substituted by Thomas Kleiser and Robert Mitterwallner).

:

Thomas Kleiser	TÜV SÜD Industrie Service, München	Assessment Team Leader
Markus Knödlse-der	TÜV SÜD Industrie Service, München	Expert
Robert Mitter-wallner	TÜV SÜD Industrie Service, München	Scope 4 and TA 4.2 covered (cement industry) GHG Auditor
Sunil Kathuria	TÜV SÜD India	Local expert, GHG Lead Auditor

1.1 Objective

The objective of verification can be divided in Initial Verification and Periodic Verification:

- Initial Verification:

The objective of an initial verification is to verify that the project is implemented as planned, to confirm that the monitoring system is in place and fully functional, and to assure that the pro-

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ject will generate verifiable emission reductions. A separate initial verification prior to the project entering into regular operations is not a mandatory requirement.

▪ Periodic Verification:

The objective of the periodic verification is to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan; further more the periodic verification evaluates the GHG emission reduction data and express a conclusion with a high, but not absolute, level of assurance about whether the reported GHG emission reduction data is free of material misstatements; and verifies that the reported GHG emission data is sufficiently supported by evidence, i.e. monitoring records. If no prior initial verification has been carried out, the objective of the first periodic verification also includes the objectives of the initial verification.

The verification shall consider both quantitative and qualitative information on emission reductions. Quantitative data comprises the monitoring reports submitted to the verifier by the project entity. Qualitative data comprises information on internal management controls, calculation procedures, and procedures for transfer, frequency of emissions reports, review and internal audit of calculations/data transfers.

The verification is based on criteria set by UNFCCC, the Kyoto Protocol and the CDM modalities and procedures.

1.2 Scope

Verification scope is defined as an independent and objective review and ex post determination by the Designated Operational Entity of the monitored reductions in GHG emissions. The verification is based on the submitted monitoring report and the validated project design documents including its monitoring plan. The monitoring report and associated documents are reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. TÜV SÜD has, based on the recommendations in the Validation and Verification Manual employed a risk-based approach in the verification, focusing on the identification of significant risks of the project implementation and the generation of CERs.

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

The audit team has been provided with a Monitoring Report and underlying data records in December, 2006, covering the period January 2005 to October 2006 inclusive. This document in the final version 09 from 4 August 2009 (IRL No. 54) serves as the basis for the assessment presented herewith. The "corrections requested based on other issues" submitted by the EB on 14 March 2008 are covered by this report.

Studying the existing documentation belonging to this project, it was obvious that the competence and capability of the audit team performing the verification has to cover at least the following aspects:

- Knowledge of Kyoto Protocol and the Marrakech Accords
- Environmental and Social Impact Assessment
- Quality assurance

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- . Technical aspects of cement production
- . Monitoring technologies and concepts
- . Political, economical and technical conditions in host country

According to these requirements TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV certification body “climate and energy”:

Thomas Kleiser is a lead auditor for CDM and JI projects at TÜV SÜD Industrie Service GmbH and head of Certification Body within TÜV SÜD. In this position he is responsible for the implementation of validation and certification processes for GHG mitigation projects. He has participated in more than 90 CDM and JI project assessments.

Markus Knödlseider is an auditor for environmental management systems at the department “Carbon Management Service” in the head office of TÜV SÜD Industrie Service GmbH in Munich. He has been involved in the topic of environmental auditing, baselining, monitoring and verification due to the requirements of the Kyoto Protocol since Oct. 2001. His main focus lies on renewable energies.

Mr. Sunil Kathuria is an auditor for environmental and quality management systems (according to ISO 14001 and ISO 9001) at TÜV SÜD India. He is based in New Dehli. He has received extensive training in the CDM assessment process and participated in plenty of projects.

Robert Mitterwallner is a GHG-Auditor with a background as auditor for environmental management systems (according to ISO 14001), as expert in environmental permit procedures for industrial plants and as expert for environmental impact studies assessment. He is located at TÜV SÜD Industrie Service in Munich since 1990. He has received training in the JI determination as well as CDM validation process and applied successfully as GHG Auditor among others for the scope manufacturing industries. He applied for the technical area of cement industry.

Responsibility for the internal quality control of the project was with the certification body “climate and energy”.

1.3 GHG Project Description

The aim of this project is to manufacture and sell a new type of cement (herein after called “blended cement”) categorized under a new Cement Standard (Indonesian standard SNI 15-7064-2004) (Semen Portland Komposit). This new cement type has been introduced as part of Indocement’s efforts to increase the amount of various additive materials in the cement while maintaining a similar or improved cement quality compared to Ordinary Portland Cement (OPC, SNI-2049-2004 the updated SNI OPC type I standard). Blended cement is produced by increasing the proportion of additive materials such as limestone and pozzolan in the cement fine grinding process, hence reducing the clinker content of cement. The pozzolanic materials used in Indocement’s Sustainable Cement Production Project include coal fly ash and volcanic ash (trass).

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The project is implemented at the three Indocement production sites located at Citeureup and Cirebon, both West Java, and Tarjun South, Kalimantan. Taken together, Indocement operates twelve cement kilns at three plants.

In this project, calcination-, fuel-, and power-related CO₂ emission reductions are achieved by lowering the clinker content per ton of cement.

The project has been implemented completely as projected in the registered PDD. The registered PDD applies the methodology ACM0005 version 03.

2 METHODOLOGY

Starting the initial verification the verifier's first task has been to familiarize with the project. Based on the received documents (see Annex 1) a verification checklist (VC) has been prepared, consisting of the Initial Verification Checklist (IVC) and the Periodic Verification Checklist (PVC) according to the VVM.

These combined checklists serve the following purposes:

- it organizes details of the audit procedure and clarifies the requirements the project is expected to meet; and
- it documents how a particular requirement has been validated and the result of the verification.

During the verification a special focus was given to:

- the correct implementation of the project (installations, monitoring equipment and procedures, quality assurance procedures)
- the correctness of assumptions with impacts on the monitoring and verification process (e.g. baseline assumptions)
- sustainable development and environmental performance parameters
- training programs
- allocation of responsibilities
- the day-to-day operation of the system
- After the document review the audit team conducted
- an on-site inspection
- interviews with the members of the owner, the operator and the CDM advisor in the office

The findings are the essential part of this verification report, which is based on the verification protocols of the VVM. Those protocols consist of four tables – one from the IVC, three from the PVC. The completed protocol is enclosed in Annex 1 and Annex 2 to this report. The structure of the tables is shown in the following:

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Initial Verification Checklist – table 1			
OBJECTIVE	Ref.	COMMENTS	Concl. (incl FARs/CARs)
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	Description of circumstances and further conclusions.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the Verification report. Forward Action Requests (FARs) indicate essential risks for further periodic verifications

Periodic Verification Checklist		
Table 1: Data Management System/Controls		
Expectations for GHG data management system/controls	Score	Verifiers Comments (including Forward Action Requests)
The project operator's data management system/controls are assessed to identify reporting risks and to assess the data management system's/control's ability to mitigate reporting risks. The GHG data management system/controls are assessed against the expectations detailed in the table.	<p>A score is assigned as follows:</p> <p>Full all best-practice expectations are implemented.</p> <p>Partial a proportion of the best practice expectations is implemented</p> <p>Limited this should be given if little or none of the system component is in place.</p>	Description of circumstances and further commendation to the conclusion. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the Verification report. The Initial Verification has additional Forward Action Requests (FAR). FAR indicates essential risks for further periodic verifications

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Periodic Verification Checklist		
Table 2: GHG calculation procedures and management control testing		
Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks
Identification of potential reporting risks based on an assessment of the emission estimation procedures. Identification of key source data. Focus on those risks that impact the accuracy, completeness and consistency of the reported data.	Identification of the key controls for each area with potential reporting risks. Assessment of adequacy of the key controls and eventually test that the key controls are actually in operation. Internal controls include, Understanding of responsibilities and roles, Reporting, reviewing and formal management approval of data; Procedures for ensuring data completeness, conformance with reporting guidelines, maintenance of data trails etc.	Identification of areas of residual risks, i.e. areas of potential reporting risks where there are no adequate management controls to mitigate potential reporting risks Areas where data accuracy, completeness and consistency could be improved are highlighted.

Periodic Verification Checklist		
Table 3: Detailed audit testing of residual risk areas and random testing		
Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvement (including FARs)

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<p>List of residual areas of risks of Periodic Verification Checklist Table 2 where detailed audit testing is necessary.</p> <p>In addition, other material areas may be selected for detailed audit testing.</p>	<p>The additional verification testing performed is described. Testing may include:</p> <ul style="list-style-type: none">Sample cross checking of manual transfers of dataRecalculationSpreadsheet 'walk through' to check links and equationsInspection of calibration and maintenance records for key equipmentCheck sampling analysis resultsDiscussions with process engineers who have detailed knowledge of process uncertainty/error bands.	<p>Having investigated the residual risks, the conclusions are noted here. Errors and uncertainties are highlighted.</p>
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CARs were encountered during the verification process. Addressed CARs had been solved during verification process.

However, the verification team has defined FARs, whenever the current status requires a special focus on this item for the next consecutive verification.

All FARs have to be reported to the verification team of the next Periodic Verification, which has to take into account all such findings.

Monitoring Period: From January 1, 2005 to October 31, 2006

2.2 Review of Documentation and Site Visits

The verification was performed as a desk review and two onsite visits.

The document review included the assessment of

- Project documents including PDD,
- Validation report (results of the validation were documented by DNV in the validation report: "Indocement Blended Cement Project in Indonesia", report no. 2006-0210, rev. 1, dated 2006-08-18. This final validation report indicates no remaining issues
- Applied methodology,
- Monitoring plan, validation report,
- Monitoring Manual,
- Monitoring report and further documentations.

The verification team conducted three onsite visits. At first Mr. Kathuria visited in December 2006 the head quarter of Indocement in Jakarta, Indonesia and all three cement plants. Based

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on first results, TÜV SÜD decided to meet responsible management and staffs again in March 2007 in order to clarify open issues.

Due to the delayed decision regarding the requested deviation from registered monitoring plan the last onsite visit was performed within the second verification in early August 2007. At that visit additional issues effecting the first verification as well were found (see CAR 8) so it has been addressed herewith also. That meeting was performed by Mr. Knödlseider. After the submission of the EB letter from 14 March 2008 until November 2009 several telephone calls between the project owner, the consultant and the DOE were held.

2.3 Resolution of Corrective and Forward Action Requests

The objective of this phase of the verification was to resolve the requests for corrective actions and any other outstanding issues which needed to be clarified for TÜV SÜD's positive conclusion on the GHG emission reduction calculation. Quality and accuracy of the data and documents presented during the on site visit was high. Corrections and clarification was requested since initial statements and sources were not clear or not correct used. Finally all requested corrections and clarification could be solved.



3 INITIAL VERIFICATION FINDINGS

In the following sections the findings of the verification are stated. The verification findings for each verification subject are presented as follows:

The findings from the desk review of the final monitoring report and the findings from interviews during the follow up visit are summarized. A more detailed record of these findings can be found in the Verification Protocol in annex 1.

Where TÜV SÜD had identified issues that needed clarification or that represented a risk to the fulfilment of the project objectives, a Corrective or Forward Action Request, respectively, have been issued. The Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in annex 1.

In the context of Forward Action Requests, risks have been identified, which may endanger the delivery of high quality CERs in the future, i.e. by deviations from standard procedures as defined by the MP. As a consequence, such aspects should receive a special focus during the next consecutive verification. A FAR may originate from lack of data sustaining claimed emission reductions. Forward Action Requests are understood as recommendation for future project monitoring; they are stated, where applicable, in the following sections and are further documented in the Verification Protocol in annex 1.

The final conclusions for verification subject are presented. The verification findings relate to the project implementation as documented and described in the final monitoring report.

Remaining issues, CARs, FARs from initial validation

One task of verification is to check the remaining issues from the previous validation or issues which are clearly defined for assessment in the PDD. The validation report, prepared by DNV, Norway, notes no open issues.

3.1 Project Implementation

3.1.1 Discussion

The scrutiny of a proper implementation of a project is a key issue of an Initial Verification, in order to have a climate change project ready for successful operation. The project is implemented in the cement plants undertaking the CDM project activities are described as follows:

Citeureup factory: With its nine kilns (P1-P8 and P11), the Citeureup cement factory is the biggest of the three factories, with a total installed capacity of about 10.4 million tons of clinker per year (MTPY). The nearly self-contained facility operates limestone and clay quarries, a 300 MW power station, and a paper sack factory (capacity about 200 million bags per year). The Citeureup cement factory produces OPC Type I, Type II, Type V, Portland Composite Cement (PCC), and oil well and white cement.

Cirebon factory: The Cirebon cement factory is a fully integrated cement factory with two kilns (P9 and P10). The total production capacity is about 2.4 MTPY of clinker. The facility operates its own limestone and clay quarries. Electricity is purchased from the national grid. The factory produces OPC Type I and PCC.

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Tarjun factory: The Tarjun cement factory is a fully integrated cement factory with a single kiln (P12). The annual production capacity is about 2.4 MTPY of clinker. The cement plant operates a coal-fired power plant and port facilities. The factory produces OPC Type I and PCC.

Project is being implemented as defined in the PDD and the monitoring of its progress is reported every month in the Monthly performance report by each plant. The construction of the additive silos has been completed in Citeureup, Cirebon and Tarjun. All Plants are equipped to handle increased percentage of additives. Receiving hoppers and storages are in place to bring additive materials to the cement mills.

The plants have the metering and measurement devices such as weigh feeders; analysis equipments available at all the three sites, to monitor various parameters related to project. All equipments are of reputed make and included in the structured calibration plans where they are periodically calibrated

The procedures have been documented for calculating Power consumptions of various equipments. There are also documented procedures for the use of information technology. The procedure includes the defining of roles and responsibilities for access, revision, modification and authority for data collection, storage, archiving and back up. At all three locations the parameters measurements are online, except those tested in laboratories and fed automatically every hour to the production management system. Laboratories results are fed daily in the system.

All monitoring equipment is part of detailed calibration plan under ISO9001:2000 system. The procedures for carrying out internal calibrations have been also documented and a strict control is maintained over the calibration process. On the date of verification, Calibration records of the measuring and monitoring equipment has been verified at site. All the meters have been found to be calibrated regularly as per determined calibration plan for each section.

Data is monitored on hourly basis and then compiled into end of shift basis. Data from the Production management information system .is imported in to excel spreadsheet every day. There are adequate protections and back up arrangements made to ensure effective transfer of data to the main server in Jakarta. There is a person made responsible for import and compilation of data from main server from all the three plants on daily basis.

During verification, it was observed that the following log books and records are maintained manually as well as electronically, to monitor the operation controls,

3.1.2 Findings

OBJECTIVE	COMMENTS
Documentation (IVC 1.4)	Clarification Request No.1 Please provide evidence that the availability of the additives are in abundance for all three plants. Clarification Request No.2 The emissions reductions are not in line with the projections mentioned in the PDD, please provide the clarifications and also provide forecast for the same during remaining crediting period.



3.1.3 Conclusion

The project owner could demonstrate that additives are sufficiently available. The differences in forecasted and real emission reductions are mainly based in a delay of project implementation. That increased the amount of project emissions and hence decreased the emission reduction within the monitoring period.

3.2 Internal and External data

3.2.1 Discussion

The following internal parameters are obtained according to the monitoring plan:

- Percentage of CaO & MgO in Input and output streams measured by calibrated meters through laboratory tests and calculated.
- Quantities of clinker, fly ash, additive received and consumed measured through calibrated weigh bridges & weigh turfs, including data related to transportation of additives for determination of leakages
- Records of Power through captive generation, drawn from grid, measured through calibrated energy meters, invoices raised by the utility companies.
- Power consumption record for each component of cement production viz. up to clinker manufacturing
- Generation records of clinker, OPC and PCC cement recorded in production reports, statutory records of accounts & returns of production submitted to the government.

In case of fossil fuels and alternate fuels the following records are also maintained:

- Fossil fuel consumption
- Energy content of fuels

The records are maintained on daily basis and the production of PCC is statutory, so the chances of misstatement in the records are hereby low.

As mentioned above the responsibility for data collection for each plant lies with the General Manager of each plant. Each General manager has further trained staff to for collection of all data related to this CDM Project and entered into the "Production Management Information System located in the Mainframe at Jakarta. In addition plant has deployed trained engineers with good experience in operation and maintenance of the plant and academically qualified to carry out the task.

The external data used are following:

- Emission factor of fuels – IPCC values are used.
- Calorific Values of fuels – Waste Fuel IPCC values are used, for Tires, VDZ value is used.
- Generation data of applicable grid

During verification assessment some need for correction could be identified as mentioned in following chapter.

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During the onsite visit TÜV SÜD identified the need for requesting the EB in order to deviate from registered monitoring plan, because the consumed electricity could not be determined as planned originally, see "Request for deviation from registered monitoring plan regarding determination of electricity consumption", issued on 05.06.2007. It has been accepted on EB meeting 35.

3.2.2 Findings

OBJECTIVE	COMMENTS
Documentation (IVC 4.1)	Corrective Action Request No.1 The self generated electricity used in PE elec_sg_BC,Y needs to be net energy without the electricity power used for the auxiliary purpose
Documentation (IVC 4.2)	Corrective Action Request No.2 The complete data pertaining to leakages due to transportation of additives is neither in line with the methodology nor with the registered PDD .The same needs to be established for all the three plants, for all type of transportation used, separately as the nature of additives are different for each plant .The data needs to be supported by verifiable evidences.
Documentation (IVC 5.2)	Corrective Action Request 3 The default heat values, Emission factors, carbon fraction of the fuel / external data, taken from external sources e.g IPCC Values, needs to be most current for all calculations. In addition the Monitoring report and back up calculations files must contain those sources in the hyperlinked form, wherever possible.
Documentation (IVC 5.3)	Clarification Request No.3 It is not clear whether grid factor shall be measured annually or will use the figures as announces by the PLN from time to time.

3.2.3 Conclusion

The requested corrections have been considered in the final monitoring report. The project complies with the requirements. According to the methodology the grid factor is calculated – this is in compliance with UNFCCC standards.

3.3 Environmental and Social Indicators

3.3.1 Discussion

No environmental and social indicators are defined in the monitoring plan. The client, however, takes action on a voluntary basis regarding environmental and social issues.

The stack monitoring and ambient air monitoring are carried out every month through internal calibrated equipments and the records for the same are maintained and submitted to government authorities.

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The auditor team on site met a sample of local stakeholders. They expressed their deep appreciations for the project. As per them the project has brought sustainable development by increasing the employment in transport sector due to increased quantity of alternative fuel handling, which the project has brought in. This has also resulted into more employment for the handling agricultural residue.

The company has maintained an environment division at each location which monitors the environmental related parameters on the planned interval through the monitoring equipments maintained and operated by the company

3.3.2 Findings

None

3.3.3 Conclusion

The project complies with the requirements.

3.4 Management and Operational System

3.4.1 Discussion

The company complies with all legal and statutory requirements of the Indonesian Government and the same were made available to the verification team.

Water & air samples are tested. The parameters were found complying with requirements of the emission standard. The company has necessary permissions from the Indonesian Government bodies. The company monitors environmental parameters on the monthly basis and maintains the records of stack monitoring and ambient air quality. The same is published for internal circulations in the Monthly performance report of each plant.

The overall authority of the project is personally supervised by Mr. Yang Ten Chih (Technical Advisor) and Mr. Yang Ten Chih have further delegated responsibility to Mr. Antony Rudrasono for collection and compilation of all data related to this CDM Project. In addition plant has deployed trained engineers with good experience in operation and maintenance of the plant and academically qualified to carry out the task. The responsibilities and authorities are described for each individual as per the ISO9001:2000 system manual.

Since this is a continuous manufacturing plant the emergency procedures with respect to operation controls are available in data control. Persons working at plant are aware of their responsibilities and a documented procedure of the same exists. Data are archived in the physical & electronic forms and then stored electronically.

CDM specific internal audits are implemented and their reports were verified. The findings of such audits were circulated among the concerned departments/plants for initiating corrective actions.

Calculations are laid down in the monitoring report. Additionally the client has submitted the emission reduction in the excel sheets duly supported with the parameters records for the verification.

However, following issues needs to be corrected and clarified.

3.4.2 Findings

OBJECTIVE	COMMENTS
Documentation (IVC 7.6)	<p>Clarification Request No.4</p> <p>Please clarify whether the Cement production data of 2005 & 2006 is exclusive of the exports. If not, the export needs to be excluded as the same are outside the scope of the project activities. The evidence of export production also needs to be submitted to DOE.</p> <p>Corrective Action Request No.4</p> <p>The Power consumption for additive preparation through grid electricity and self generated electricity is not measured separately in line with the methodology.</p> <p>Clarification Request No.5</p> <p>It is not clear whether grid factor shall be measured annually or will use the figures as announces by the PLN from time to time.</p> <p>Corrective Action Request 5</p> <p>The calculations for the parameter which have been taken as Zero in the registered PDD may be excluded in the monitoring report. In addition the repetition of parameters may be avoided in monitoring report e.g. QAF , HVAF</p> <p>Corrective Action Request No.6</p> <p>The monitoring report should state how the quantities are rounded up from the back up calculations and also while rounding off lower value needs to be taken consistently.</p>

3.4.3 Conclusion

The correct amount of cement production has been applied. CAR 4 has been answered and accepted by the EB through the request for deviating from registered monitoring plan. For purchased power the grid factor is determined based on the UNFCCC standards. CAR 5 & 6 has been considered in the updated Monitoring report.

Finally, the determination team confirms that the monitoring report and the Management and Operational Systems are eligible for reliable project monitoring.



4 Periodic Verification Findings

4.1 Defined organizational structure, responsibilities and competencies

4.1.1 Discussion

The overall authority of the project is personally supervised by Mr. Yang (Technical Advisor) who has further delegated responsibility to Mr. Antony for collection and compilation of all data related to this CDM Project. In addition each plant has deployed trained engineers with good experience in operation and maintenance of the plant and academically qualified to carry out the task. The responsibilities and authorities are described for each individual as per the ISO9001:2000 system manual

4.1.2 Findings

None

4.1.3 Conclusion

As indicated in previous section the Management and Operational Systems are eligible for reliable project monitoring

4.2 Completeness of Monitoring

4.2.1 Discussion

The reporting procedures reflect the monitoring plan completely. We confirmed that the monitoring report does comply with the monitoring methodology and PDD.

All parameters were determined as prescribed. The complete data is stored electronically and also the part of Management information system which is controlled by accounts. The necessary procedures have been defined in internal procedures and additional internal documents relevant for the determination of the all the 34 parameters listed in the monitoring plan.

4.2.2 Findings

Forward Action Request No.1

A request for deviation was submitted for this project. It was approved in EB35; however, a Request for Revision of Monitoring Plan must be approved before the next periodic verification.

4.2.3 Conclusion

The project complies with the requirements. The revised Monitoring Plan has been approved by EB on 31 May 2008.



4.3 Accuracy of Emission Reduction Calculations

4.3.1 Discussion

Due to the approved methodology there is no need to make corrections for data uncertainty. The audit team confirms that emission reduction calculations have been performed according to the Monitoring Plan and to the calculation methodology reported in the Monitoring Report.

Moisture penalty has been calculated as per revised method in the monitoring report which is verified by DOE.

4.3.2 Findings

None

4.3.3 Conclusion

All requested corrections have been considered in the final monitoring report (see annex 1). The project complies with the requirements.

4.4 Quality of Evidence to Determine Emission Reductions

4.4.1 Discussion

Concerning verification the calculation of emission reductions is based on internal data (the external grid emission factor is fixed). The origin of those data was explicitly checked. Further on, entering and processing of those data in the monitoring workbook Excel sheet was checked where predefined algorithms compute the annual value of the emission reductions. All equations and algorithms used in the different workbook sheets were checked. Inspection of calibration and maintenance records for key equipment was performed for all relevant meters.

Necessary procedures have been defined in internal procedures and additional internal documents relevant for the determination of the various parameters on daily basis.

4.4.2 Findings

None

4.4.3 Conclusion

The project complies with the requirements.



4.5 EB request for corrections due to minor issues

With letter from 14 March 2008 the EB requested:

The monitoring plan requires the grid emission factor to be calculated annually. The monitoring report and the verification report stated that the grid emission factor for 2005 and 2006 of 0.754 tCO₂/MWh was calculated ex-ante and approved by the DNA. While this grid emission factor was different from the grid emission factor of 0.728 tCO₂/MWh stated in the PDD, further clarification is required as to the term ex-ante used in the monitoring report and verification report.

As per the monitoring plan, the grid emission factor was calculated using the ex-post option of the "tool to calculate the emission factor for an electrical system, version 1.1". The data for y-1 period was used in the ex post emission factor calculations as the data for the year y is available with delay. The DNA of Indonesia approved the ex post emission factor for years 2003, 2004, 2005 and 2006 and published through letter dated 6 August 2009 (IRL No. 55).

The difference between the ER values of earlier submitted monitoring report and latest monitoring report is primarily due to the revision of emission factor from **ex ante to ex post** option.

Caused by this EB letter, the Jamali grid emission factor as well as the underlying data base excel sheet calculation (IRL No. 52) and the excel sheet calculation of CERs (IRL No. 53) and the final monitoring report (IRL No.54) have been changed by the project owner.

All these documents were soundly assessed by the DOE.

According to the registered PDD, page 28, item 9, the grid emission factor has to be calculated following the ACM0002. The most recent version 09 refers to the tool to calculate the emission factor for an electricity system. As indicated in the new data base, the new Jamali grid emission factors are:

- 1.021 tCO₂/MWh (for 2003)
- 0.913 tCO₂/MWh (for 2004) and
- 0.890 tCO₂/MWh (for 2005).

Taking into account the requirements of the above mentioned tool for ex-post option (see EB letter) the emission factor 1.021 tCO₂/MWh is attributable for the baseline year 2004. Meanwhile, 0.913 tCO₂/MWh has to be applied for the year 2005 and the factor 0.890 tCO₂/MWh for the year 2006. This has been done correctly in the excel sheet calculations for the CERs of the first monitoring period (IRL No. 53) and in the monitoring report.

Furthermore, the DOE did a cross-check of the share of fossil and renewable fuel in the underlying data base for this project and the data base of the registered CDM project No. 673 applying as well the Jamali power grid. Since there are no substantial differences between both data bases, the input data for the ex-post grid emission factor for this project is deemed to be credible.

5 PROJECT SCORECARD

The conclusions on this scorecard are based on the revised CDM monitoring report.

Risk Areas		Conclusions			Summary of findings and comments
		<i>Baseline Emissions</i>	<i>Project Emissions</i>	<i>Emission Reductions</i>	
Completeness	Source coverage/ boundary definition	✓	✓	✓	All relevant sources are covered by the monitoring plan and the boundaries of the project are defined correctly and transparently.
Accuracy	Physical Measurement and Analysis	✓	✓	✓	State-of-the-art technology is applied in an appropriate manner. Appropriate back-up solutions are provided.
	Data calculations	✓	✓	✓	Emission reductions are calculated correctly.
	Data management & reporting	✓	✓	✓	Data management and reporting were found to be satisfying.
Consistency	Changes in the project	✓	✓	✓	Results are consistent to underlying raw data.



6 VERIFICATION STATEMENT

The certification body "Climate and Energy" of TÜV SÜD Industrie Service GmbH has been ordered by The Worldbank to carry out the initial and the first periodic verification of the registered CDM project "Indocement Blended Cement Project, UNFCCC Reference No.0526, performed by PT INDOCEMENT TUNGGAL PRAKARSA Tbk. (Indocement).

The verification is based on requirements of the UN Framework Convention on Climate Change (UNFCCC). In this context, the relevant documents are the "Marrakech Accords".

The verifier confirms that the project is implemented as planned and described in the validated project design document. Some changes concerning type of installed turbines and timing of their installation have no impact on the method to calculate emission reductions. Installed equipment being essential for generating emission reduction and for metering the data defined in the monitoring plan runs reliably and is calibrated appropriately. The monitoring system is in place and the project generates GHG emission reductions according to the approved methodology.

The verifier can confirm that the GHG emission reduction is calculated without material misstatements for the whole monitoring period.

Our opinion relates to the project's GHG emissions reductions reported and related to the valid project baseline and monitoring, and its associated documents.

Based on the information we have seen and evaluated, we confirm the following statement:

Reporting period: 01-01-2005 to 31-10-2006.

Verified emission in the above reporting period:

Baseline emissions	14.690.465 t CO ₂ eq
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Project emissions	14.591.936 t CO ₂ eq
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Leakage emission	3 573 t CO ₂ eq
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Emission Reductions:	94.956 t CO ₂ eq
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The verification team also determined some areas of risks for the project in the context of the management system. Those issues indicated as "Forward Action Request" and should be submitted as indispensable information to the verification team of the next periodic verification.

Munich, 2009-11-19

A handwritten signature in blue ink, appearing to read 'Rachel Zhang'.

Rachel Zhang

Deputy Head of Certification
body „Climate and Energy“

Munich, 2009-11-19

A handwritten signature in blue ink, appearing to read 'Thomas Kleiser'.

Thomas Kleiser

Assessment Team Leader


Initial and First Periodic Verification of the CDM Project:

Indocement Blended Cement Project, UNFCCC Reference No.0526




Industrie Service

Annex 1: Initial and Periodic Verification Checklist


		Initial and First Periodic Verification of the "Indocement Blended Cement Project of PT. Indocement Tunggul Prakarsa Tbk, Indonesia.	Page 1 of 28	 Industrie Service
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1 INITIAL VERIFICATION CHECKLIST


OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
1. Opening Session			
1.1. Introduction to audits	1, 2, 3, 4	<p>The intention and the target of the audit were illustrated to the participants of the audit.</p> <p>Participants at the audit were the following persons:</p> <p>Verification team:</p> <p>Mr. Sunil Kathuria Lead Auditor, TUV South Asia</p> <p><u>Interviewed persons: Indocement Tunggul Prakarsa Tbk, Indonesia.</u></p> <p>Mr. Oivind Hoidalen Technical Director</p> <p>Mr. Gunawan Purwadi General Manager Citeureup Plant</p> <p>Mr. Budiono Hendranata General Manager Cirebon Plant</p> <p>Mr. Anang Adji Sunoto Head production Tarjun Plant</p> <p>Mr.T.C.Yang CDM project Advisor</p> <p>MS. Vera Indrawati Manager Quality Assurance and Research.</p> <p>MS.Ingrani Sugito Head Quality Assurance</p> <p>Mr. Santoso Jahja MIS Operation Dept. Head Jakarta</p> <p>Mr.Johnny H.S.Souhoko Electrical and Instrumentation</p> <p>Mr Pantja Dharma Electrical and Instrumentation</p> <p>MS. Dwi Nurcahyani Section Head Quality Control</p>	<input checked="" type="checkbox"/>

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OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
		Mr. Andi Kusumajaya Head- Health Department Mr. Anung Supriyadi Section Head-Hazard Monitoring Mr. Ridwan Industrial Hygiene Officer.	
1.2. Clarification of access to data archives, records, plans, drawings etc.	1, 2, 3, 4,5,7	The verification team got open access to all required plans, data, records, drawings and to all relevant facilities.	<input checked="" type="checkbox"/>
1.3. Contractors for equipment and installation works	1, 2, 3, 4, 5, 7, 26, 49	Project has been implemented as defined in the PDD and the implementation of the project is in process and review periodically through progress reports. There is no change in the major equipments.	<input checked="" type="checkbox"/>
1.4. Actual status of installation works	1, 2, 3, 4, 5, 7, 11, 12, 13, 26, 49	<p>Project is being implemented as defined in the PDD and the monitoring of its progress is reported every month in the Monthly performance report by each plant head. The construction of the fly ash Silos has been completed in all the Citeureup, Cirebon Plants and the Tarjun Plant is equipped to handle increased percentage of additives.</p> <p><u>Clarification Request No.1</u> Please provide evidence that the availability of the additive are in abundance for all three plants.</p> <p><u>Clarification Request No.2</u> The emissions reductions are not in line with the projections mentioned in the PDD, please provide the clarifications and also provide forecast for the same during remaining crediting period.</p>	CR 1 CR 2
2. Open issues indicated in validation report			
2.1. Missing steps to final ap-	1, 2, 3,	Based on the validation report the verification team identified no missing	<input checked="" type="checkbox"/>

		Initial and First Periodic Verification of the "Indocement Blended Cement Project of PT. Indocement Tungal Prakarsa Tbk, Indonesia.	Page 3 of 28	 Industrie Service
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OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
proval	4, 5, 7, 11, 12, 13, 26, 49	steps. The project has been registered under the CDM under the reference number 00000361.	
3. Implementation of the project			
3.1. Physical components	1, 2, 3, 4,5,7, 11,12, 13,26, 49	Project has been implemented as defined in the PDD and there is no change in the major equipments. The fly ash silos and handling systems are installed and are in operation. The bunkers are in place to bring fly ash and other additives.	<input checked="" type="checkbox"/>
3.2. Project boundaries	1, 2, 3, 4, 5, 7, 11, 12, 13, 26, 49	Yes the project boundaries are as defined in the PDD.	<input checked="" type="checkbox"/>
3.3. Monitoring and metering systems	1, 2, 3, 4,5,7,9,10,17, 13,26, 49	<p>The plants have the metering and measurement devices such as weigh feeders; analysis equipments available at all the three sites, to monitor various parameters related to project. All equipments are of reputed make and included in the structured calibration plans where they are periodically calibrated</p> <p>The procedures have been documented for calculating Power consumptions of various equipments. There are also documented procedures for the use of information technology. The procedure includes the defining of roles and responsibilities for access, revision, modification and authority for data collection, storage, archiving and back up. At all three locations</p>	<input checked="" type="checkbox"/>

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OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
		The parameters measurements are online, except those tested in laboratories and fed automatically every hour to the production management system. Laboratories results are fed daily in the system.	
3.4. Data uncertainty	1, 2,3, 4, 7, 9, 10,	Data is monitored on hourly basis and then compiled into end of shift basis. Data from the production management information system .is imported in to excel spreadsheet every day. There are adequate protections and back up arrangements made to ensure effective transfer of data to the main server in Jakarta.	<input checked="" type="checkbox"/>
3.5. Calibration and quality assurance	1, 2,3, 4, 18, 19, 33, 34, 35, 36, 37, 38, 39, 40, 43, 44, 45, 46, 47, 48, 49	Each monitoring equipment is part of detailed calibration plan under ISO9001:2000 system. The procedures for carrying out internal calibrations have been also documented and a strict control is maintained over the calibration process On the date of verification, Calibration records of the measuring and monitoring equipment has been verified at site. All the meters have been found to be calibrated regularly as per determined calibration plan for each section.	<input checked="" type="checkbox"/>
3.6. Data acquisition and data processing systems	1, 2, 3, 4, 7, 18, 19, 20, 21, 22, 23, 24, 25	At all three locations the parameters measurements are online, except those tested in laboratories and fed automatically every hour to the production management system. Laboratories results are fed daily in the system.	<input checked="" type="checkbox"/>
3.7. Reporting procedures	1,2,3,4,	Data is monitored on hourly basis and then compiled into end of shift ba-	<input checked="" type="checkbox"/>

		Initial and First Periodic Verification of the "Indocement Blended Cement Project of PT. Indocement Tunggul Prakarsa Tbk, Indonesia.	Page 5 of 28	 Industrie Service
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OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
	7, 9, 10, 25, 27, 28	sis. Data from the Production management information system .is imported in to excel spreadsheet every day. There are adequate protections and back up arrangements made to ensure effective transfer of data to the main server in Jakarta. There is a person made responsible for import and compilation of data from main server from all the three plants on daily basis	
3.8. Documented instructions	1,2,3,4, 5, 7, 9, 10, 16	<p>During verification, it was observed that the following log books and records are maintained manually as well as electronically , to monitor the operation controls:</p> <ul style="list-style-type: none"> • Receiving and usage of raw materials on daily, monthly and yearly basis • Lab analysis and inspection report for raw materials, Blended cement, Trass, fly ash and other additives. • Meter reading of generation meter in captive units as well as the meters for import of electricity from grid. <p>The records were verified for the monitoring period.</p>	<input checked="" type="checkbox"/>
3.9. Qualification and training	1,2,3,4, 5, 7, 41, 42	<p>The overall authority of the project is personally supervised by Mr. Yang Ten Chih (Technical Advisor) and Mr. Yang Ten Chih have further delegated responsibility to Mr. Antony Rudrasono for collection and compilation of all data related to this CDM Project.</p> <p>Each General manager has further trained staff to for collection of all data related to this CDM Project and put in the "Production Management Information System located in the Mainframe at Jakarta. In addition plant has deployed trained engineers with good experience in operation and maintenance of the plant and academically qualified to carry out the task.</p>	<input checked="" type="checkbox"/>

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OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
3.10. Responsibilities	1, 2, 3, 4, 5, 7	<p>The overall authority of the project is personally supervised by Mr. Yang Ten Chih (Technical Advisor) and Mr. Yang Ten Chih have further delegated responsibility to Mr. Antony Rudrasono for collection and compilation of all data related to this CDM Project.</p> <p>Each plant is under the direct responsibility of a General Manager who has deployed academically qualified, trained engineers with good experience in operation and maintenance of the plant The responsibilities and authorities are described for each individual as per the ISO9001:2000 system manual</p>	<input checked="" type="checkbox"/>
3.11. Troubleshooting procedures	1,2,3,4, 5,7,	The documented procedure for recording of each parameter is included in then CDM Manual. There is a separate procedure laid down for measuring and recording energy related parameters .These procedures include the troubleshooting tips.	<input checked="" type="checkbox"/>
4. Internal Data			
4.1. Type and sources of internal data	1,2,3,4, 6 7, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32	<p>The following internal parameters are obtained according to the monitoring plan:</p> <ul style="list-style-type: none"> Percentage of CaO & MgO in Input and output streams measured by calibrated meters through laboratory tests and calculated. Quantities of clinker, fly ash, additive received and consumed measured through calibrated weigh bridges & weigh turfs ,including data related to transportation of additives for determination of leakages Records of Power through captive generation, drawn from grid, measured through calibrated energy meters, invoices raised by the utility companies. 	CAR 1 CAR 2

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OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
		<ul style="list-style-type: none"> Power consumption record for each component of cement production viz. up to clinker manufacturing, Rolling mills, Packaging. Generation records of clinker, OPC and PPC cement recorded in production reports, statutory records of accounts & returns of production submitted to the government. <p>In case of fossil fuels and alternate fuels the following records are also maintained. :</p> <ul style="list-style-type: none"> Fossil fuel consumption Energy content of fuels <p>However following needs to be corrected</p> <p><u>Corrective Action Request No.1</u></p> <p>The self generated electricity used in $PE_{elec_sg_BC,Y}$ needs to be net energy not including the electricity power used for the auxiliary purpose</p> <p><u>Corrective Action Request No.2</u></p> <p>The complete data pertaining to leakages due to transportation of additives is neither in line with the methodology nor with the registered PDD .The same needs to be established for all the three plants, for all type of transportation used, separately as the nature of additives are different for each plant .The data needs to be supported by verifiable evidences.</p>	
4.2. Data collection	1, 2, 3, 4, 6, 7, 18, 19, 20, 21,	The responsibility for data collection for each plant lies with the General Manager of each plant Each General manager has further trained staff to for collection of all data related to this CDM Project and entered into the “Production Management Information System located in the Mainframe at	<input checked="" type="checkbox"/>

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OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
	22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32,	Jakarta. In addition plant has deployed trained engineers with good experience in operation and maintenance of the plant and academically qualified to carry out the task.	
4.3. Quality assurance	1, 2, 3, 4, 6, 7, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32,	The effective implementation of the quality management system ensures that the data is monitored on hourly basis and then compiled into end of shift basis. The documented procedures are evidenced in each section which is a part of ISO9001:2000 & ISO14001 System documentation for quality assurance	<input checked="" type="checkbox"/>
4.4. Significance and reporting risks	1, 2, 3, 4, 6, 7, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32,	As the records are maintained on daily basis and the production of PPC is a statutory records the chances of misstatement are hereby low.	

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OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
5. External Data			
5.1. Type and sources of external data	1, 2, 3, 4, 6, 7, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32,	<p>The external data used are following:</p> <ul style="list-style-type: none"> • Emission factor of fuels – IPCC values are used. • Calorific Values of fuels – IPCC values are used. • Generation data of applicable grid –collected from the <p><u>Corrective Action Request 3</u></p> <p>The default heat values, Emission factors, carbon fraction of the fuel / external data, taken from external sources e.g IPCC Values, needs to be most current for all calculations.</p> <p>In addition the Monitoring report and back up calculations files must contain those sources in the hyperlinked form, wherever possible.</p>	CAR 3
5.2. Access to external data	1,2,3,4, 5,6,7,	<p><u>Clarification Request No.3</u></p> <p>It is not clear whether grid factor shall be measured annually or will use the figures as announces by the PLN from time to time. Please clarify</p>	CR 3
5.3. Quality assurance	1,2,3,4, 5,6,7,	See chapter 5.1.	<input checked="" type="checkbox"/>
5.4. Data uncertainty	1,2,3,4, 5,6,7,	See chapter 5.1.	<input checked="" type="checkbox"/>
5.5. Emergency procedures	1,2,3,4, 5,6,7	See chapter 5.1.	<input checked="" type="checkbox"/>

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OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
6. Environmental and Social Indicators			
6.1. Implementation of measures	1, 2, 3, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17	<p>Environmental and social indicators are not defined in the monitoring plan. Hence the question is not applicable.</p> <p>But the client takes action on a voluntary basis regarding environmental and social issues:</p> <ul style="list-style-type: none"> ▪ The stack monitoring and ambient air monitoring are carried out every month through internal calibrated equipments and the records for the same are maintained and submitted to government authorities. ▪ The auditor team on site met a sample of local stakeholders. They expressed their deep appreciations for the project. As per them the project has brought sustainable development by increasing the employment in transport sector due to increased quantity of cement, which the project has brought in. This has also resulted into more employment for the landless labour for cutting, stacking and transportation of agricultural residue in the off season. 	<input checked="" type="checkbox"/>
6.2. Monitoring equipment	1, 2, 3, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17	See chapter 6.1.	<input checked="" type="checkbox"/>

		Initial and First Periodic Verification of the "Indocement Blended Cement Project of PT. Indocement Tungal Prakarsa Tbk, Indonesia.	Page 11 of 28	 Industrie Service
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OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
6.3. Quality assurance procedures	1, 2, 3, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17	See chapter 6.1.	<input checked="" type="checkbox"/>
6.4. External data	1, 2, 3, 4, 5, 8, 11, 12, 13, 14, 15, 16, 17	See chapter 6.1.	<input checked="" type="checkbox"/>
7. Management and Operational System			
7.1. Documentation	1, 2, 3, 4, 8, 16	<p>The company complies with all legal and statutory requirements of the Indonesian Government and the same were made available to the verification team.</p> <p>Water & air samples are tested. The parameters were found complying with requirements of the emission standard. The company has necessary permissions from the Indonesian Government bodies. The company monitors environmental parameters on the monthly basis and maintains the records of stack monitoring and ambient air quality. The same is published for internal circulations in the Monthly performance report of each plant</p>	<input checked="" type="checkbox"/>
7.2. Qualification and training	1, 2, 3,	The overall authority of the project is personally supervised by Mr. Yang	<input checked="" type="checkbox"/>

		Initial and First Periodic Verification of the "Indocement Blended Cement Project of PT. Indocement Tunggul Prakarsa Tbk, Indonesia.	Page 12 of 28	 Industrie Service
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OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
	4,8,16	<p>Ten Chih (Technical Advisor) and Mr. Yang Ten Chih have further delegated responsibility to Mr. Antony Rudrasono for collection and compilation of all data related to this CDM Project.</p> <p>In addition plant has deployed trained engineers with good experience in operation and maintenance of the plant and academically qualified to carry out the task. The responsibilities and authorities are described for each individual as per the ISO9001:2000 system manual</p>	
7.3. Allocation of responsibilities	1, 2, 3, 4, 8, 16	Persons working at plant are aware of their responsibilities and a documented procedure of the same exists.	<input checked="" type="checkbox"/>
7.4. Emergency procedures	1, 2, 3, 4,8,16,	Since this is a continuous manufacturing plant the emergency procedures with respect to operation controls are available in data control	<input checked="" type="checkbox"/>
7.5. Data archiving	1, 2, 3, 4,8,16,	Data are archived in the physical & electronic forms and then stored electronically.	<input checked="" type="checkbox"/>
7.6. Monitoring report	1, 2, 3, 4,8,16	<p>Calculations are laid down in the monitoring report. Additional the client has submitted the emission reduction in the excel sheets duly supported with the parameters records for the verification.</p> <p>However, following issues needs to be corrected and clarified.</p> <p><u>Clarification Request No.4</u></p> <p>Please clarify whether the Cement production data of 2005 & 2006 is exclusive of the exports. If not the export needs to be exclude as the same are outside the scope of the project activities. The evidence of export production also needs to be submitted to DOE.</p> <p><u>Corrective Action Request No.4</u></p>	CR 4 CR5 CAR4 CAR5 CAR6

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OBJECTIVE	Ref.	COMMENTS	Conclusion.(incl FARs/CARs)
		<p>The Power consumption for additive preparation through grid electricity and self generated electricity is not measured separately in line with the methodology.</p> <p><u>Clarification Request No.5</u></p> <p>It is not clear whether grid factor shall be measured annually or will use the figures as announces by the PLN from time to time. Please clarify.</p> <p><u>Corrective Action Request 5</u></p> <p>The calculations for the parameter which have been taken as Zero in the registered PDD may be excluded in the monitoring report. In addition the repetition of parameters may be avoided in monitoring report e.g. QAF , HVAF</p> <p><u>Corrective Action Request No.6</u></p> <p>The monitoring report should state how the quantities are rounded up from the back up calculations and also while rounding off lower value needs to be taken consistently.</p>	
7.7. Internal audits and management review	1, 2, 3, 4, 41,42	CDM specific internal audits are implemented and their reports were verified. The findings of such audits were circulated among the concerned departments/plants for initiating corrective actions	<input checked="" type="checkbox"/>

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2 PERIODIC VERIFICATION CHECKLIST

Table 1: Data Management System/Controls


Expectations for GHG data management system/controls	Score	Verifiers Comments (including <i>Forward Action Requests</i>)
1. Defined organizational structure, responsibilities and competencies		
1.1. Position and roles	Full	The overall authority of the project is personally supervised by Mr. Yang Ten Chih (Technical Advisor) and Mr. Yang Ten Chih have further delegated responsibility to Mr. Antony Rudrasono for collection and compilation of all data related to this CDM Project. In addition each plant has deployed trained engineers with good experience in operation and maintenance of the plant and academically qualified to carry out the task. The responsibilities and authorities are described for each individual as per the ISO9001:2000 system manual
1.2. Responsibilities	Full	The overall authority of the project is personally supervised by Mr. Yang Ten Chih (Technical Advisor) and Mr. Yang Ten Chih have further delegated responsibility to Mr. Antony Rudrasono for collection and compilation of all data related to this CDM Project. In addition each plant has deployed trained engineers with good experience in operation and maintenance of the plant and academically qualified to carry out the task. The responsibilities and authorities are described for each individual as per the ISO9001:2000 system manual

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Expectations for GHG data management system/controls	Score	Verifiers Comments (including <i>Forward Action Requests</i>)
1.3. Competencies needed	Full	The overall authority of the project is personally supervised by Mr. Yang (CDM advisor) who has further delegated responsibility to Mr. Antony for collection and compilation of all data related to this CDM Project .In addition each plant has deployed trained engineers with good experience in operation and maintenance of the plant and academically qualified to carry out the task. The responsibilities and authorities are described for each individual as per the ISO9001:2000 system manual
2. Conformance with monitoring plan		
2.1. Reporting procedures	Full	The monitoring plan is as per the registered PDD
2.2. Necessary Changes	Full	<p>The power consumption is not determined as mentioned in the initial monitoring plan. The original monitoring plan indicated that consumer side the power purchased and power self-generated will be measure. This is not possible however. So the project owner issued a request for deviating from registered monitoring plan. The deviation addresses that the entire consumption at each equipment is measured only and further that based on the amount of purchased and self-generated power this proportion will be applied to the consumption.</p> <p>This deviation has been accepted by the EB.</p>
3. Application of GHG determination methods		

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Expectations for GHG data management system/controls	Score	Verifiers Comments (including <i>Forward Action Requests</i>)
3.1. Methods used	Full	The reporting procedures reflect the monitoring plan content. The calculation of the emission reduction is correct.
3.2. Information/process flow	Full	The necessary procedures have been defined in internal procedures and additional internal documents relevant for the determination of the various parameters on daily basis
3.3. Data transfer	Full	The complete data is stored electronically and also the part of Management information system which is controlled by accounts
3.4. Data trails	Full	The necessary procedures have been defined in internal procedures and additional internal documents relevant for the determination of the all the 34 parameters listed in the monitoring plan
4. Identification and maintenance of key process parameters		
4.1. Identification of key parameters	Full	The critical parameters for the determination of GHG emissions are the parameters listed in section D of the approved PDD
4.2. Calibration/maintenance	Full	The company maintains the elaborate calibration plan for each of the equipment & the audit team verified the status for all the equipment and found to be complying with the plan.
5. GHG Calculations		

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Expectations for GHG data management system/controls	Score	Verifiers Comments (including <i>Forward Action Requests</i>)
5.1. Use of estimates and default data	Limited	<p>The carbon emission factor & Net calorific values is used as a predetermined default value which has been defined in the PDD and confirmed during validation of the project. However it is not clear why the complete Cement Production has been considered of OPC type I for the emission reduction calculation. Since the base line is considered as total cement and the lowest of the clinker cement ratio is taken as 0.898. DOE to clarify the use on quantity</p> <p><u>Clarification Request No.6</u></p> <p>Please clarify why the complete cement production has been considered of OPC type I for the emission reduction calculation in place of new cement component conforming to SNI 15-7064-2004 as per the validation report.</p> <p><u>Corrective Action Request No.7</u></p> <p>The emission reduction calculations are not matching with excel files submitted to the DOE -36509 & 144910 for the year 2005 & 2006 respectively against data submitted in the monitoring report against 42677 & 140716, in the linked calculation files.</p>
5.2. Guidance on checks and reviews	Full	<p>CDM specific internal audits are initiated periodically diligently. In addition part of the data is statutory records which are submitted every quarter with the government. Quality assurance procedures are in place and all data information is reviewed for accuracy and correctness by a staff member before submission. Staff is made aware of the quality assurance procedures.</p>

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Expectations for GHG data management system/controls	Score	Verifiers Comments (including <i>Forward Action Requests</i>)
5.3. Internal validation and verification	Full	Monitoring procedure for CDM Project includes the responsibility and frequency for carrying out internal audits. Quality assurance procedures are in place as for example the quantity of raw mix & quantity of clinker produced. The audit team did verify all the parameters listed in monitoring report
5.4. Data protection measures	Full	The necessary procedures relating to Information technology are in place to provide necessary data security, and also prevent the unauthorized use of the same.
5.5. IT systems	Full	The IT system is server based and located in head quarters in Jakarta and has full fledged manpower. The department is also supported by the internal guidelines and procedures to allocate roles and rights for each user. Additionally it clearly defines the responsibility, authority for back up, archiving and protection of data and equipments.



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Table 2: GHG calculation procedures and management control testing

Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks
<p>Potential reporting risks based on an assessment of the emission estimation procedures can be expected to occur in the following fields of action:</p> <ol style="list-style-type: none"> 1. raw data collection 2. calculation methods, <p>Key source data applicable to the project assessed are hereby:</p> <ul style="list-style-type: none"> • Records of Raw material receipts ,including that of fly ash • Production records of clinker, OPC Cement and blended cement. • Metering records for electricity production, electricity export and import from the grid. • Consumption of Electricity for each section of the cement plant. • Laboratory/analytical data (for energy content of fuels) • Accounting records (from communication to Costing Sections), <p>Appropriate calibration and maintenance of equipment resulting in a high accuracy of data supplied</p>	<p>Regarding the potential reporting risks identified in the left column the following mitigation measures have been observed during the document review and the on site mission:</p> <p>Raw data collection:</p> <p>As the project make use of fly ash and the clinker their records of production, procurement, along with the production records of blended cement , fossil and alternate fuels the amount of electricity generated from the plant and the amount of electricity imported and exported to the grid remains to be the main parameter to be obtained for the GHG calculation.</p> <p>Key source data for this parameter are:</p> <ul style="list-style-type: none"> • Main, export and import meter reading. • Invoices and record for Fuels (agricultural residue and coal) for consumption and purchase. <p>The metering equipments are installed appropriately in the enclosure panels and same are of reputed make.</p> <p>Calculation methods:</p> <p>The reporting procedures reflect the monitoring plan content & the calculation of the emission reduction is correct & also additionally deducting the project emis-</p>	<p>The issue remaining is the way the data obtained is used to calculate the emission reduction in a conservative manner according to the approach prescribed in the PDD .as well as the way data obtained is used to calculate the emissions reductions</p>

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Identification of potential reporting risk	Identification, assessment and testing of management controls	Areas of residual risks
<p>should be in place.</p> <p>It is hereby needed to focus on those risks that impact the accuracy, completeness and consistency of the reported data. Risks are weakness in the GHG calculation systems and may include:</p> <ul style="list-style-type: none"> ➤ manual transfer of data/manual calculations, ➤ position of metering equipment ➤ unclear origins of data, ➤ accuracy due to technological limitations, ➤ Compilation of the averages 	<p>sions caused by fossil fuel.</p>	


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Table 3: Detailed audit testing of residual risk areas and random testing

Areas of residual risks	Additional verification testing performed	Conclusions and Areas Requiring Improvement (including <i>Forward Action Requests</i>)
The issue remaining is the way the data obtained is used to calculate the emission reduction in a conservative manner according to the approach prescribed in the PDD .as well as the way data obtained is used to calculate the fuel i.e. coal and fuel consumption.	<p>There has been a complete check of data transferred from readings and invoices and incoming and use data for raw material, fuels to the calculation tool. There was no error in such transfer.</p> <p>The correct installation of the metering equipment can be confirmed.</p>	<p>Having investigated the residual risks, the audit team comes to the following conclusion:</p> <p>Immediate action is needed with respect to the current emission reduction calculation. Those corrections have been considered during the verification process, so no residual risk is open.</p>




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Table 4: Compilation of open issues


Draft report corrective and forward action requests by audit team	Summary of project owner response	Audit team conclusion
<u>Clarification Request No.1</u> Please provide evidence that the availability of the additive are in abundance for all three plants.	The evidence of the availability of the additive is given and shown during the verification. This is provided in a separate study provided to the verifier.	Issue is considered as solved. <input checked="" type="checkbox"/>
<u>Clarification Request No.2</u> The emissions reductions are not in line with the projections mentioned in the PDD, please provide the clarifications and also provide forecast for the same during remaining crediting period.	The emission reduction of 2005 and 2006 is lower compared with the estimation given in the PDD because of the clinker to cement ratio cannot reach the target as forecasted	Issue is considered as solved. <input checked="" type="checkbox"/>
<u>Clarification Request No.3</u> It is not clear whether grid factor shall be measured annually or will use the figures as announces by the PLN from time to time. Please clarify	The PLN baseline emission Grid is estimated ex-ANTE in accordance with ACM 0002. The revised monitoring report stipulates this. The ex-ante calculation for the ex-ante baseline emission factor is available, and it is approved by DNA. The evidence letter from DNA is provided (0.754 t of CO ₂ /MWh).	Issue is considered as solved. <input checked="" type="checkbox"/>
<u>Clarification Request No.4</u> Please clarify whether the Cement production data of 2005 & 2006 is exclusive of the exports. If not the export needs to be excluded as the same are outside the scope of the project activities. The evidence of export production also needs to be submitted to DOE.	Data on export in the excell spreadsheet is available. The emission reduction is calculated based on the total production. However, the final emission reductions are only based on domestic sales by multiplying the quantity of emission reduction per ton of total OPC and PCC cement production to the quantity of domestic sales. Volume of exported cement is excluded from the calculations of	Issue is considered as solved. <input checked="" type="checkbox"/>

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Draft report corrective and forward action requests by audit team	Summary of project owner response	Audit team conclusion
	emission reductions. The revised monitoring report includes only BC which is sold domestically.	
<u>Clarification Request No.5</u> It is not clear whether grid factor shall be measured annually or will use the figures as announces by the PLN from time to time. Please clarify.	The PLN baseline emission Grid is estimated ex-ANTE in accordance with ACM 0002. The revised monitoring report stipulates this. The ex-ante calculation for the ex-ante baseline emission factor is available, and it is approved by DNA. The evidence letter from DNA is provided (0.754 t of CO2/MWh). SAME AS CR NO. 3	Issue is considered as solved. <input checked="" type="checkbox"/>
<u>Clarification Request No.6</u> Please clarify why the complete cement production has been considered of OPC type I for the emission reduction calculation in place of new cement component conforming to SNI 15-7064-2004 as per the validation report.	The complete Cement Production has been considered as relevant type for the emission reduction calculation. Since the base line is considered as total cement and the lowest of the clinker cement ratio is taken as 0.898. This refers to registered PDD, page 40.	Issue is considered as solved. <input checked="" type="checkbox"/>
<u>Clarification Request No. 7:</u> Please provide more detailed information how emissions from transportation is determined.	The project established a system for leakage calculation will be used from 1st of January 2007 onwards. Regarding leakage calculations for 2005 and 2006, please note: - For the fuel economy (kilometre/litre), we are calculating it based on the most conservative value of IPCC , e.g. 2.2 kilometre/litre for the heavy duty Diesel trucks, and 5 kilometre/litre for light duty Diesel trucks. - For 2005 and 2006 data, the distance taken is as follows:	Issue is considered as solved. <input checked="" type="checkbox"/>

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Draft report corrective and forward action requests by audit team	Summary of project owner response	Audit team conclusion
	<p>Citeureup</p> <p>--→ Fly ash: weighted average of the distance and quantity of fly-ash to Serang and Suralaya (330 km, round trip)</p> <p>-→ Trass: the only source is taken from Parung panjang (200 km, round trip)</p> <p>Cirebon:</p> <p>----Trass: the only source is in Cirebon, 26 km, round trip</p> <p>→ catalyst: the only source is Balongan, 130 km, round-trip</p> <p>Tarjun:</p> <p>-→ Trass: source is from rembang, 750 km (sea, 520 km +land 260 km)</p> <p>→ flyash: the only source is taken from asam-asam, 150 km, one-way</p> <p>A separate spreadsheet is given, as well as maps describing the distance of alternative fuels transportation.</p>	
<u>Corrective Action Request No.1</u> The self generated electricity used in $PE_{elec_sg_BC,Y}$ needs to be net energy not including the electricity power used for the auxiliary purpose.	The revised calculation and monitoring report already corrected accordingly. The emissions from self generated power should not include the auxiliary power.	Issue is considered as solved. <input checked="" type="checkbox"/>
<u>Corrective Action Request No.2</u>	The project establishes a system for leakage calculation	Issue is consid-

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Draft report corrective and forward action requests by audit team	Summary of project owner response	Audit team conclusion
<p>The complete data pertaining to leakages due to transportation of additives is neither in line with the methodology nor with the registered PDD .The same needs to be established for all the three plants , for all type of transportation used ,separately as the nature of additives are different for each plant .The data needs to be supported by verifiable evidences.</p>	<p>will be used from 1st of January 2007 onwards.</p> <p>Regarding leakage calculations for 2005 and 2006, please note:</p> <ul style="list-style-type: none"> - For the fuel economy (kilometre/litre), we are calculating it based on the most conservative value of IPCC , e.g. 2.2 kilometre/litre for the heavy duty Diesel trucks, and 5 kilometre/litre for light duty Diesel trucks. <p>Regarding the distance, we distinguish the production sites as follows:</p> <p>--> Citeureup ----->Cirebon --->Tarjun</p>	<p>ered as solved.</p> <p><input checked="" type="checkbox"/></p>
<p><u>Corrective Action Request 3</u></p> <p>The default heat values, Emission factors, carbon fraction of the fuel / external data, taken from external sources e.g IPCC Values, needs to be most current for all calculations.</p> <p>In addition the Monitoring report and back up calculations files must contain those sources in the hyperlinked form, wherever possible .</p>	<ul style="list-style-type: none"> o Different references are taken when IPCC 1996 data is not available or other sources are more valid for cement sector: <ul style="list-style-type: none"> ▪ The default values for heat value are only taken for waste tyres. The reference of this value is "Environmental Data of the German Cement Industry 2001, VDZ" (26 MJ/Kg) , considering that IPCC does not give any value for this type of alternative fuel. ▪ The emission factor of Coal, IDO (Industrial Diesel Oil), Fuel oil and natural Gas is obtained from "WBSCD Cement Sustainability Initiative, CO2 emis- 	<p>Issue is considered as solved.</p> <p><input checked="" type="checkbox"/></p>

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Draft report corrective and forward action requests by audit team	Summary of project owner response	Audit team conclusion
	<p>sion Inventory Protocol, version 2.0"</p> <ul style="list-style-type: none"> The default value for waste oil (waste fuel) is taken from IPCC 2006 (Table 1.2, page 1.18, Volume 2 chapter 1) since this value is not available in IPCC 1996. The value is 40.2 GJ/ton or 8256.9 Mcal/kl 	
<p><u>Corrective Action Request No.4</u></p> <p>The Power consumption for additive preparation through grid electricity and self generated electricity is not measured separately in line with the methodology.</p>	<p>The Power consumption for additive preparation through grid electricity and self generated electricity cannot be measured separately.</p> <p>Since electricity from the grid and self generated electricity are integrated into a combined, single power line before entering the cement plant facility and then distributed to each motor/drive, these can not only be measured (m) but need to be measured and calculated (m,c). Therefore, the power which is consumed for clinker production, grinding of Blended Cement (BC) and preparing the additives is channeled through this single line, and the power consumption for these activities needs to be calculated based on the proportional share of captive power production and purchased power from the grid.</p> <p>A deviation for the monitoring report has been requested and approved on EB-35.</p>	<p>Issue is considered as solved. See also FAR1.</p> <p>☑</p>
<p><u>Corrective Action Request 5</u></p> <p>The calculations for the parameter which have been taken as Zero in the registered PDD may be excluded in the monitoring report. In addition the repetition of parameters may be</p>	<p>This is incorporated in revised monitoring report. All values which have been taken as Zero in the registered PDD and is excluded in the revised monitoring report</p>	<p>Issue is considered as solved.</p> <p>☑</p>

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Draft report corrective and forward action requests by audit team	Summary of project owner response	Audit team conclusion
avoided in monitoring report e.g. QAF, HVAF.		
<u>Corrective Action Request No.6</u> The monitoring report should state how the quantities are rounded up from the back up calculations and also while rounding off lower value needs to be taken consistently.	The revised monitoring report is rounded up without decimals, but the values shown are not values which are used for the actual calculation. Please refer to the spreadsheet provided to get the actual data and values for the actual emission reduction calculation.	Issue is considered as solved. <input checked="" type="checkbox"/>
<u>Corrective Action Request No.7</u> The emission reduction calculations are not matching with excel files submitted to the DOE -36509 & 144910 for the year 2005 & 2006 respectively against data submitted in the monitoring report against 42677 & 140716, in the linked calculation files.	<p>The calculation has changed due to the followings:</p> <p>A. The grid electricity emission factor is changed from 0.728 to 0.754</p> <p>B. The assumption of fuel consumption for leakage has been changed since the data has been corrected to the supply (distance, truck capacity, fuel consumption)</p> <p>C. Copper slag was categorized as iron slag. currently, the data has been corrected and copper slag and iron slag data is separated</p> <p>The revised monitoring report incorporates all of the changes and remarks which were taken during the verification visit. The final emission reduction for is - 40,417 t CO2 for the year 2005 and 119,887 for January to October 2006.</p>	Issue is considered as solved. <input checked="" type="checkbox"/>
<u>Corrective Action Request No. 8:</u> Given references are identified as being not corrected.	<p>The references in the monitoring reports have been revised accordingly</p> <p>Issues related to uncertainty are:</p> <ul style="list-style-type: none"> o Low heating values (Cirebon use formula to adjust to dry basis)→ put the formula in the monitoring report 	Issue is considered as solved. <input checked="" type="checkbox"/>

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Draft report corrective and forward action requests by audit team	Summary of project owner response	Audit team conclusion
<u>Corrective Action Request No. 9:</u> The submitted monitoring report should state how uncertainties are considered.	A Table explaining how uncertainties are addressed is given in the revised monitoring reports page 13.	Issue is considered as solved. <input checked="" type="checkbox"/>
<u>Forward Action Request No. 1:</u> A request for deviation was submitted for this project. It was approved in EB35; however, a Request for Revision of Monitoring Plan must be approved before the next periodic verification.	To be submitted during 2 nd periodic verification.	<input checked="" type="checkbox"/>


Initial and First Periodic Verification of the CDM Project:

Indocement Blended Cement Project, UNFCCC Reference No.0526




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Annex 2: Reference List

2009-11-06	Initial and First Periodic Verification of the “Indocement Blended Cement Project of PT. Indocement Tunggal Prakarsa Tbk, Indonesia. Information Reference List	Page 1 of 5	 Industrie Service
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Reference No.	Document or Type of Information																																
1	<p>On-site interviews and inspections of the project site were conducted from December 04th to 13th 2006, from March 6th to 9th 2007 and from August 6th to 14th 2007 by the auditing team of TÜV SÜD.</p> <p><u>Verification team:</u></p> <table> <tr> <td>Mr. Sunil Kathuria</td><td>Lead Auditor, TÜV South Asia</td></tr> <tr> <td>Mr. Markus Knödlseider</td><td>Project Leader, TÜV SÜD Carbon Management Service</td></tr> </table> <p><u>Interviewed persons: Indocement Tunggal Prakarsa Tbk, Indonesia.</u></p> <table> <tr> <td>Mr. Oivind Hoidalen</td><td>Technical Director</td></tr> <tr> <td>Mr. Gunawan Purwadi</td><td>General Manager Citeureup Factory</td></tr> <tr> <td>Mr. Budiono Hendranata</td><td>General Manager Cirebon Factory</td></tr> <tr> <td>Mr. Anang Adji Sunoto</td><td>Production Department Head, Tarjun Factory</td></tr> <tr> <td>Mr. Yang Ten Chih</td><td>Technical Advisor</td></tr> <tr> <td>Ms. Vera Indrawati</td><td>Quality Assurance & Research Division Manager</td></tr> <tr> <td>Ms. Inggriani Sugito</td><td>Quality Assurance Department Head</td></tr> <tr> <td>Mr. Widjaja Santoso Jahja</td><td>Network Operation Department Head</td></tr> <tr> <td>Mr. Johnny H.S. Souhoka</td><td>Electrical & Instrument Super Intendant</td></tr> <tr> <td>Mr. Ign. Pantja Dharma</td><td>Electrical & Instrument Planner</td></tr> <tr> <td>Ms. Dwi Nurcahyani</td><td>Quality Assurance Super Intendant</td></tr> <tr> <td>Mr. Andi Kusumajaya</td><td>Health Department Head</td></tr> <tr> <td>Mr. Anung Supriyadi</td><td>Hazard Monitoring Section Head</td></tr> <tr> <td>Mr. Ridwan Hermawan Saputra</td><td>Industrial Hygiene Officer</td></tr> </table>	Mr. Sunil Kathuria	Lead Auditor, TÜV South Asia	Mr. Markus Knödlseider	Project Leader, TÜV SÜD Carbon Management Service	Mr. Oivind Hoidalen	Technical Director	Mr. Gunawan Purwadi	General Manager Citeureup Factory	Mr. Budiono Hendranata	General Manager Cirebon Factory	Mr. Anang Adji Sunoto	Production Department Head, Tarjun Factory	Mr. Yang Ten Chih	Technical Advisor	Ms. Vera Indrawati	Quality Assurance & Research Division Manager	Ms. Inggriani Sugito	Quality Assurance Department Head	Mr. Widjaja Santoso Jahja	Network Operation Department Head	Mr. Johnny H.S. Souhoka	Electrical & Instrument Super Intendant	Mr. Ign. Pantja Dharma	Electrical & Instrument Planner	Ms. Dwi Nurcahyani	Quality Assurance Super Intendant	Mr. Andi Kusumajaya	Health Department Head	Mr. Anung Supriyadi	Hazard Monitoring Section Head	Mr. Ridwan Hermawan Saputra	Industrial Hygiene Officer
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Mr. Andi Kusumajaya	Health Department Head																																
Mr. Anung Supriyadi	Hazard Monitoring Section Head																																
Mr. Ridwan Hermawan Saputra	Industrial Hygiene Officer																																
2	Final Project Design Document for the CDM project “Indocement Blended Cement Project“ of Indocement Tunggal Prakarsa Tbk. dated 05.05.2006																																

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Reference No.	Document or Type of Information
3	Validation Protocol and Annexes for the CDM project “Indocement Blended Cement Project“ of Indocement Tungal Prakarsa Tbk. “ are available at
4	Draft Monitoring Report for “Indocement Blended Cement Project“ dated 17.11.2006 of Indocement Tungal Prakarsa Tbk., Reference no. UNFCCC 0526 for the period 01.01.2005 to 31.10.2006.
5	UNFCCC website, http://www.unfccc.int
6	ACM0005 – “Consolidated Monitoring Methodology for increasing the Blend in Cement Production”.
7	Linked Calculation files, dated 13.12.2006 Indocement Tungal Prakarsa Tbk., and submitted 13.12.2006.
8	Environmental permissions, Ministry of Environment, Republic of Indonesia; dated 07.01.2005 and 08.06.2005, submitted 13.12.2006.
9	PC Local area network security policy, Indocement Tungal Prakarsa Tbk., dated 07.03.2003 submitted 13.12.2006.
10	Sample of service request control system, Indocement Tungal Prakarsa Tbk., dated nil, submitted 13.12.2006.
11	Agreement for purchase of fly ash between PT Indah Kiat Pulp and Paper Tbk & Indocement Tungal Prakarsa Tbk., dated 04.05.2004, submitted 13.12.2006.
12	Agreement for purchase of fly ash between Selakindo Makmur and Indocement Tungal Prakarsa Tbk., dated 06.01.2006, submitted 13.12.2006.
13	Agreement for purchase of fly ash between Yayasan Pendidi Dan Kesijahateraan PT. Indonesia Power and Indocement Tungal Prakarsa Tbk., dated 15.01.2004, submitted 13.12.2006.
14	Decree of State Minister of Environment, dated 07.03.2005, submitted 13.12.2006.
15	List of standard equipments for environmental monitoring, Indocement Tungal Prakarsa Tbk, dated nil submitted 13.12.2006.
16	Work instruction for ambient air monitoring Indocement Tungal Prakarsa Tbk, dated 01.07.2003 submitted 13.12.2006.
17	Sample of quarterly reporting on social and environmental indicator submitted to government of Indonesia, Tbk Indocement Tungal Prakarsa Tbk , dated September, 2006 submitted 13.12.2006.
18	Record of Calibration of Chemical analysis equipment, Indocement Tungal Prakarsa Tbk, dated September, 2006 submitted

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Reference No.	Document or Type of Information
	13.12.2006.
19	Sample record of maintenance of lab equipment, PT Hilab Sciencetama dated 25.07.2006 submitted 13.12.2006.
20	Sample record of Clinker Quality Profile –Plant 11 Indocement Tunggal Prakarsa Tbk , dated October 2006, submitted 13.12.2006
21	Sample record of Raw Mill –Plant 11 Indocement Tunggal Prakarsa Tbk , dated October 2006, submitted 13.12.2006
22	Sample record of Clinker Quality Profile –Plant 9,10,12 for the year 2006 Indocement Tunggal Prakarsa Tbk , dated nil submitted 13.12.2006
23	Sample daily record of chemical composition of Clinker –Plant 9 and 10 for the month of November 2006 Indocement Tunggal Prakarsa Tbk , submitted 13.12.2006
24	Sample daily record of chemical composition of Clinker , Indocement Tunggal Prakarsa Tbk , dated 08.10.06 and 07.12.2006 submitted 13.12.2006
25	Sample of Monthly utility report-Plant 12 , Indocement Tunggal Prakarsa Tbk , dated Nov. 2006 submitted 13.12.2006
26	Minutes of internal meeting on review of progress of project, Indocement Tunggal Prakarsa Tbk , dated Nov. 2006 submitted 13.12.2006
27	Sample report on mined quality profile-citrep plant , Indocement Tunggal Prakarsa Tbk , dated Oct.2006 submitted 13.12.2006
28	Sample of worksheet of daily electricity consumption record, , Indocement Tunggal Prakarsa Tbk , for Jan06, Aug06 and Nov06 submitted 13.12.2006
29	Sample of monthly record of material consumption , Indocement Tunggal Prakarsa Tbk , for Oct06 submitted 13.12.2006
30	Daily chemical composition record of clinker –cirbon plant Indocement Tunggal Prakarsa Tbk , for Aug-Oct 06 submitted 13.12.2006
31	Daily chemical composition record of clinker –Tarjun plant Indocement Tunggal Prakarsa Tbk , for year 2006 submitted 13.12.2006
32	Daily chemical composition record of raw mill –Tarjun plant Indocement Tunggal Prakarsa Tbk , for year 2006 submitted 13.12.2006
33	Samples of Calibration Matrix , Indocement Tunggal Prakarsa Tbk , for year 2006 submitted 13.12.2006
34	Sample of calibration record of weigh feeder for raw coal , Indocement Tunggal Prakarsa Tbk , dated 07.09.2006 submitted 13.12.2006

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Reference No.	Document or Type of Information
35	Calibration record of Bom Calorimeter , Indocement Tunggal Prakarsa Tbk , dated 04.03.2006 submitted 13.12.2006
36	Calibration record of Check weigh record, Indocement Tunggal Prakarsa Tbk dated 17.04.2006 submitted 13.12.2006,
37	Sample of calibration record of energy meter, Hasil Kalibrasi , dated 06.12.2006 submitted 13.12.2006
38	Sample of calibration sample record , Indocement Tunggal Prakarsa Tbk ,dated nil submitted 13.12.2006
39	Sample of calibration records of various weigh feeders, Indocement Tunggal Prakarsa Tbk ,dated November 2006,submitted 13.12.2006
40	Sample of calibration records of various weigh feeders, Indocement Tunggal Prakarsa Tbk ,dated August and November 2006,submitted 13.12.2006
41	Records of internal audit, Indocement Tunggal Prakarsa Tbk ,dated 14.11.2006,submitted 13.12.2006
42	Records of training on monitoring of CDM Parameters , Indocement Tunggal Prakarsa Tbk ,dated 29.11.2006,submitted 13.12.2006
43	Calibration schedule for plant 7 and 8 and it's sample records , Indocement Tunggal Prakarsa Tbk ,dated nil,submitted 13.12.2006
44	Sample of calibration records of Prometers, Indocement Tunggal Prakarsa Tbk ,dated September to November 2006,submitted 13.12.2006
45	Sample record of calibration of kiln feed flow meter, Indocement Tunggal Prakarsa Tbk, dated 10.12. 2006,submitted 13.12.2006
46	Sample record of calibration of on shore packer, Indocement Tunggal Prakarsa Tbk ,dated April and December 2006,submitted 13.12.2006
47	Sample record of calibration of Pfiester feeder, Indocement Tunggal Prakarsa Tbk ,dated April and December 2006,submitted 13.12.2006
48	Sample record of calibration of Solid fuel weigh feeder, Indocement Tunggal Prakarsa Tbk ,dated 08.08.2006,submitted 13.12.2006
49	Site visit photographs, Validation team ,dated 04-13.12.2006 submitted 13.12.2006
50	Draft Monitoring Report for “Indocement Blended Cement Project“ dated March 28. 2007 of Indocement Tunggal Prakarsa Tbk., Reference no. UNFCCC 0526 for the period 01.01.2005 to 31.10.2006
51	Uploaded Monitoring Report for “Indocement Blended Cement Project“ dated 23 December 2007 (version 03) of Indocement

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Reference No.	Document or Type of Information
	Tungal Prakarsa Tbk., Reference no. UNFCCC 0526 for the period 01.01.2005 to 31.10.2006
52	Jamali Grid Emission factor – excel sheet calculation from 25 Mai 2009, version 02
53	CER Excel Sheet calculations for the first monitoring period 2005 and 2006 from 4 August 2009
54	Final Monitoring Report for “Indocement Blended Cement Project“ dated 4 August 2009 (version 09) of Indocement Tungal Prakarsa Tbk., Reference no. UNFCCC 0526 for the period 01.01.2005 to 31.10.2006
55	EFgrid approval of DNA of Indonesia from 6 August 2009