



VALIDATION REPORT

PT CABOT INDONESIA

UTILIZATION OF HEAT CONTENT OF TAIL GAS AT
PT CABOT INDONESIA, CILEGON

Report No: 8000361451-08/143

Date: 2009-06-07

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Client: PT Cabot Indonesia	Client ref.: Mr. Derry
Summary:	<input checked="" type="checkbox"/> positive validation opinion <input type="checkbox"/> negative validation opinion
<p>PT Cabot Indonesia has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project: "Utilization of the heat content of tail gas at PT Cabot Indonesia, Cilegon" with regard to the relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria include article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakech Accords) and the relevant decisions by COP/MOP and CDM Executive Board</p> <p>In the course of the pre-validation 16 Corrective Action Requests (CARs) and 3 Clarification Requests (CLs) were raised and successfully closed.</p> <p>The review of the project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfilment of all stated criteria.</p> <p>In detail the conclusions can be summarised as follows:</p> <ul style="list-style-type: none"> - The project is in line with all relevant host country criteria (Indonesia) and all relevant UNFCCC requirements for CDM. Project activity approval has been obtained from DNA of Indonesia vide the Letter of Approval (HCA) dated 2008-09-25. - The project additionality could sufficiently be justified in the PDD. - The monitoring plan is transparent and adequate. - The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 315,241 tCO₂e will be most likely achieved within the fixed 10 y crediting period. <p>The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.</p>	

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Report title: Utilization of heat content of tail gas at PT. Cabot Indonesia, Cilegon	
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Indexing terms

Climate protection
Kyoto Protocol
CDM
Validation

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Abbreviations

BAU	Business as usual
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CO₂	Carbon dioxide
CO_{2e}	Carbon dioxide equivalent
CP	Certification Program
CR	Clarification Request
DNA	Designated National Authority
EB	CDM Executive Board
EIA	Environmental Impact Assessment
FAR	Forward Action Request
GHG	Greenhouse gas(es)
IPCC	Intergovernmental Panel on Climate Change
PDD	Project Design Document
PP	Project Participant
QC/QA	Quality control/Quality assurance
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1 OBJECTIVE / SCOPE

The purpose of a validation is to have an independent third party assess the project design. In particular the project's baseline, the monitoring plan (MP), and the project's compliance with

- the requirements of Article 12 of the Kyoto Protocol;
- the CDM modalities and procedures as agreed in the Marrakech Accords under decision 3/CMP.1 (17/CP7);
- the annex to the decision;
- subsequent decisions made by COP/MOP & CDM Executive Board and
- other relevant rules, including the host country legislation and sustainability criteria

are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders on the quality of the project and its intended generation of certified emission reductions (CERs).

The validation scope is given as a thorough independent and objective assessment of the project design including especially: the correct application of the methodology, the project's baseline study, additionality justification, local stakeholder commenting process, environmental impacts and monitoring plan, which are included in the PDD and other relevant supporting documents, to ensure that the proposed CDM project activity meets all relevant and applicable CDM criteria.

The information included in the PDD and the supporting documents was reviewed against the requirements as set out by the UNFCCC. The validation team has, based on the requirements in the Validation and Verification Manual^{VVM}, carried out a full assessment of all evidences to assess the compliance of the project with the key areas as outlined in section V.E. and F. of the VVM (version 1).

The validation is based on the information made available to TÜV NORD JI/CDM CP and on the contract conditions. TÜV NORD JI/CDM CP cannot be held liable by any entity for making its validation opinion based on any false or misleading information supplied to it during the course of validation.

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

2 GHG PROJECT DESCRIPTION

2.1 Project Characteristics

Essential data of the project is presented in the following Table 2-1.

Table 2-1: Project Characteristics

Item	Data
Project title	Utilization of heat content of tail gas at PT Cabot Indonesia, Cilegon
Project size	<input type="checkbox"/> Large Scale <input checked="" type="checkbox"/> Small Scale
Project Scope (according to UNFCCC sectoral scope numbers for CDM)	<input type="checkbox"/> 1 Energy Industries (renewable- /non-renewable sources)
	<input type="checkbox"/> 2 Energy distribution
	<input type="checkbox"/> 3 Energy demand
	<input checked="" type="checkbox"/> 4 Manufacturing industries
	<input type="checkbox"/> 5 Chemical industry
	<input type="checkbox"/> 6 Construction
	<input type="checkbox"/> 7 Transport
	<input type="checkbox"/> 8 Mining/Mineral production
	<input type="checkbox"/> 9 Metal production
	<input type="checkbox"/> 10 Fugitive emissions from fuels (solid, oil and gas)
	<input type="checkbox"/> 11 Fugitive emissions from production and consumption of halocarbons and hexafluoride
	<input type="checkbox"/> 12 Solvents use
	<input type="checkbox"/> 13 Waste handling and disposal
	<input type="checkbox"/> 14 Afforestation and Reforestation
	<input type="checkbox"/> 15 Agriculture
Applied Methodology	AMS III.Q: "Waste gas based energy systems" --- Version 1
Crediting period	<input type="checkbox"/> Renewable Crediting Period (7 y) <input checked="" type="checkbox"/> Fixed Crediting Period (10 y)
Start of crediting period ¹	2009-09-01 (or the date of registration)

2.2 Involved Parties and Project Participants

The following parties to the Kyoto Protocol and project participants are involved in this project activity (Table 2-2).

Table 2-2: Project Parties and project participants

Characteristic	Party	Project Participant
Host party	Indonesia	PT Cabot Indonesia (PTCI)
Other involved party/ies	-	-

¹ As per draft PDD

2.3 Project Location

The details of the project location are given in table 2-3:

Table 2-3: Project Location

No.	Project Location
Host Country	Indonesia
Region:	Banten Province
Project location address:	Krakatau Industrial Real Estate, Cilegon
Latitude:	05°59'43.1" South
Longitude:	105°59'45.0" East

2.4 Technical Project Description

The proposed project activity involves the recovery and utilization of previously flared excess tail gas of the PTCL carbon black production site in Cilegon, Indonesia. The waste gas is used to generate steam and electricity in a cogeneration unit.

Electricity generated by the onsite cogeneration unit (5.5 MW gross, 5 MW net) will displace electricity previously purchased from KDL (Krakatau Daya Listrik), the local electricity company. Furthermore it is planned to use part of the generated steam for the substitution of an existing natural gas boiler.

Thus the expected emission reductions are due to the substitution of fossil fuel based electricity generation and the substitution of natural gas based steam generation.

The project involves the installation of a new steam boiler designed to produce 35 ton/h steam at 44 bar. The high pressure steam drives a turbo-generator to produce 5.5 MW of electricity.

The key parameters of the project are given in table 2-4:

Table 2-4: Technical data of the project activity

Parameter	Unit	Value
Electricity generation capacity	MW	5.5 (gross); 5 (net)
Steam production	t/h	35
Steam pressure	MPa	4.4
Tail gas temperature	°C	200 - 239
Design waste tail gas flow rate	Nm ³ /h	41,000
NCV of the tail gas	kcal/Nm ³	500 - 600
Expected days of operation	d/a	350
Expected days of full load operation hours	h/a	7560

3 METHODOLOGY AND VALIDATION SEQUENCE

3.1 Validation Steps

The validation of the project consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the project design document (PDD)
- A desk review of the PDD^{/PDD/} submitted by the client and additional supporting documents with the use of customised validation protocol^{/CPM/} according to the Validation and Verification Manual^{/VVM/}
- Validation planning
- On-Site assessment
- Background investigation and follow-up interviews with personnel of the project developer and its contractors
- Draft validation reporting
- Resolution of corrective actions (if any)
- Final validation reporting
- Technical review
- Final approval of the validation.

The sequence of the validation is given in the table 3.1 below:

Table 3.1: Validation sequence

Topic	Time
Assignment of validation	2008-05-13
Submission of PDD for global stakeholder commenting process	2008-06-07
On-site visit	2008-07-16 to 2008-07-17
Draft reporting finalised	2009-01-13
Technical review on draft reporting finalised	2009-01-16
Final reporting finalised	2009-06-06
Technical review on final reporting finalised	2009-06-07

3.2 Contract review

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the verification can be provided,
- Impartiality issues are clear and in line with the CDM accreditation requirements

a contract review was carried out before the contract was signed.

3.3 Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a verification team, consistent of one team leader and 2 additional Technical Experts, was appointed. Furthermore also the personnel for the technical review and the final approval was determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table 3-2 below.

Table 3-2: Involved Personnel

	Name	Company	Function ¹⁾	Qualification Status ²⁾	Sectoral competence	Technical competence	Host country Competence	Controlling competence
<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Hasnop, Putra	TÜV NORD Indonesia	TM	TE	x	-	x	-
<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Nebel Alexandra	TÜV NORD CERT, Germany	TM	E	x	-	-	-
<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Simamora, Ellys	TÜV NORD Indonesia	-	T	-	-	x	-
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Krupp, Eric	TÜV NORD CERT, Germany	TR, FA	SA	x	x	-	x
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Sudarmadji	TÜV NORD Indonesia	TM	TE	x	x	x	-
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Winter, Rainer	TÜV NORD CERT, Germany	TL	SA	x	x	-	x

¹⁾ TL : Team Leader; TM : Team Member, TR: Technical review; FA: Final approval

²⁾ GHG Auditor Status: A : Assessor; E : Expert; SA: Senior Assessor; T : Trainee; TE Technical Expert

Certificates of appointment for the above mentioned GHG auditors are enclosed in annex 4 of this report.

3.4 Consideration of Public Stakeholder Comments

Acc. to the modalities and procedures the draft PDD, as received from the project participants, has been made publicly available on the dedicated UNFCCC CDM website prior to the validation activity commenced. Stakeholders have been invited to comment on the PDD within the 30 days public commenting period.

In case comments were received, they are taken into account during the validation process. The comments and the discussion of the same are documented in annex 3 of this report.

3.5 Validation Protocol

In order to ensure consideration of all relevant assessment criteria, a validation protocol is used. The protocol shows, in a transparent manner, criteria and requirements, means of validation and the results from pre-validating the identified criteria. The validation protocol reflects the generic CDM requirements each CDM project has to meet as well as project specific issues as applicable. The validation protocol serves the following purposes:

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

The validation protocol as described in Figure 1.

Validation Protocol Table A-1: Requirement checklist				
Checklist Item	Validation Team Comment	Reference	Draft Conclusion	Final Conclusion
<i>The checklist items in Table A-1 are linked to the various requirements the project should meet. The checklist is organised in various sections. Each section is then further sub-divided as per the requirements of the topic and the individual project activity.</i>	<i>The section is used to elaborate and discuss the checklist item in detail. It includes the assessment of the validation team and how the assessment was carried out. The reporting requirements of the VVM shall be covered in this section.</i>	<i>Gives reference to the information source on which the assessment is based on</i>	<i>Assessment based on evidence provided if the criterion is fulfilled (OK), or a CAR, CR or FAR (see below) is raised. The assessment refers to the draft validation stage.</i>	<i>In case a corrective action or a clarification the final assessment at the final validation stage is given.</i>

Figure 1: Validation protocol tables

The completed validation protocol is enclosed in Annex 1 to this report.

3.6 Review of Documents

The draft PDD and supporting background documents related to the project design and baseline were reviewed.

Furthermore, the validation team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data.

3.7 Follow-up Interviews

The validation team has carried out interviews in order to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for CDM.

During validation the validation team has performed interviews to confirm selected information and to resolve issues identified in the document review. The main topics of the interviews are summarized in table 3-3.

Table 3-3: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
Project proponent representatives Project consultant	- Chronological description of the project activity with documents of key steps of the implementation.

Interviewed Persons / Entities	Interview topics
	<ul style="list-style-type: none"> - Technical details of the project realization, project feasibility, designing, operational life time, monitoring of the project - Host Government Approval - Approval procedures and status - Monitoring and measurement equipment and system - Financial aspects - Crediting period - Project activity starting date - Baseline study assumptions - Additionality - Sustainable development issues - Monitoring - Analysis of local stakeholder consultation - Roles & responsibilities of the project participants w.r.t. project management, monitoring and reporting - National Legislation - Editorial issues of the PDD
Local Stakeholders	<ul style="list-style-type: none"> - Stakeholder survey and consultation - Socio-economic issues / benefits because of project - Status of implementation of agreements

A comprehensive list of all interviewed persons is part of section 7 'References'.

3.8 Project comparison

The validation team has compared the proposed CDM project activity with similar projects or technology that have similar or comparable characteristics and with similar projects in the host country in order to achieve additional information esp. regarding:

- Project technology
- Additionality issues
- Reasons for reviews, requests for reviews and rejections within the CDM registration process.

3.9 Resolution of Clarification and Corrective Action Requests

3.9.1 Definition

A **Corrective Action Request (CAR)** will be established where:

- mistakes have been made in assumptions, application of the methodology or the project documentation which will have a direct influence the project results,
- the requirements deemed relevant for validation of the project with certain characteristics have not been met or
- there is a risk that the project would not be registered by the UNFCCC or that emission reductions would not be able to be verified and certified.

A **Clarification Request (CR)** will be issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met.

A **Forward Action Request (FAR)** will be issued when certain issues related to project implementation should be reviewed during the first verification.

3.9.2 Draft Validation

After reviewing all relevant documents and taken all other relevant information into account, the validation team issues all findings in the course of a draft validation report and hands this report over to the project proponent in order to respond on the issues raised and to revise the project documentation accordingly.

3.9.3 Final Validation

The final validation starts after issuance of the proposed corrective action (CA) of the CARs CRs and FARs by the project proponent. The project proponent has to reply on those and the requests are “closed out” by the validation team in case the response is assessed as sufficient. In case of raised FARs the project proponent has to respond on this, identifying the necessary actions to ensure that the topics raised in this finding are likely to be resolved at the latest during the first verification. The validation team has to assess whether the proposed action is adequate or not.

In case the findings from CARs and CRs cannot be resolved by the project proponent or the proposed action related to the FARs raised cannot be assessed as adequate, no positive validation opinion can be issued by the validation team.

The CAR(s) / CR(s) / FAR(s) are documented in chapter 4.

3.10 Technical review

Before submission of the final validation report a technical review of the whole validation procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the validation opinion and the topic specific assessments as prepared by the validation team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

3.11 Final approval

After successful technical review of the final report an overall (esp. procedural) assessment of the complete validation will be carried out by a senior assessor located in the accredited premises of TÜV NORD.

Only after this step the request for registration can be started (in case of a positive validation opinion).

4 VALIDATION FINDINGS

In the following table the findings from the desk review of the draft PDD, visits, interviews and supporting documents are summarised:

Table 4-1: Summary of CARs, CRs and FARs issued

Validation topic ¹⁾	No. of CAR	No. of CR	No. of FAR
General description of project activity (A) - Project specification - Technical project description - Participation - Contribution to sustainable development - PDD editorial aspects - Technology to be employed	1	-	-
Project Baseline, Additionality and Monitoring Plan (B) - Application of the Methodology - Project Boundary - Baseline identification - Calculation of GHG emission reductions Project emissions Baseline emissions Leakage - Additionality determination - Monitoring Methodology - Monitoring Plan - Project management planning	13	2	-
Duration of the Project / Crediting Period (C)	2	-	-
Environmental impacts (D)	-	-	-
Stakeholder Comments (E)	-	1	-
SUM	16	3	0

¹⁾ The letters in brackets refer to the validation protocol

The following tables include all raised CARs, CRs and FARs. For an in depth evaluation of all validation items it should be referred to the validation protocols (see Annex 1).

The preliminary findings of validation process are summarized in the tables below.

	CAR A1			
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> FAR	<input type="checkbox"/> CR	<input type="checkbox"/> None
Findings	The letter of approval is still pending			
Corrective Action	The letter has been made available to the verification team.			
Assessment of validation team	OK			
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken <input checked="" type="checkbox"/> The project complies with the requirements			

	CAR B1			
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> FAR	<input type="checkbox"/> CR	<input type="checkbox"/> None
Findings	The grid emission factor has to be determined on a regional basis, i.e. for the Java - Madura – Bali- (Jamali) grid, in line with the requirements of the “Tool to calculate the emission factor for an electricity system”. The same should be reflected in the ex-ante situation as well as for ex-post calculation in the monitoring plan.			
Corrective Action #1	KDL is not exporting to PLN but importing, even KDL is exporting only in small amount but not in normal situation. For this situation should PT Cabot Indonesia use JAMALI Grid Emission Factor? If yes, which EF, year 2006 or latest (2008)?			
Assessment of validation team #1	1. The GEF of the Jamali Grid shall be used. This is due to a) requirements of the methodology and b) it is most likely that generation capacity within the Jamali Grid will be displaced. 2. The latest available data shall be used.			
Corrective Action #2	The latest GEF of Jamali already use in the latest PDD (see. PDD cabot rev.4) to calculate the baseline emission.			
Assessment of validation team #2	The GEF is not backed up by evidences.			
Corrective Action #3	Latest GEF of the Jamali Grid adopted for all calculations in the PDD ver. 4. This latest JAMALI emission factor is issued and publicly available by DNA February 13, 2009. For details please visit: http://dna-cdm.menlh.go.id/Downloads/Others/KomnasMPB_Grid_Sumatera_JAMALI_2008.pdf or http://dna-cdm.menlh.go.id/en/database			

	CAR B1
Assessment of validation team #3	<p>The GEF is calculated as average OM using option C. It is now based on publicly available sources and duly backed up by the underlying calculation. Nevertheless the calculation was checked and found to include the following mistakes / inconsistencies:</p> <ul style="list-style-type: none"> a) In the underlying Excel sheet the calculation is not fully traceable b) Not all calculation parameters are listed (e.g. densities, NCV) c) The term "Emission Reduction" is used inappropriately. d) Within the OM calculation for PT PJB the fuel "ST" is not defined e) The calculation of the gas related emissions of IP for the year 2002 is found to be incorrect. f) In the BM calculation the thermal efficiency for the Cilegon plant is incorrect. g) In cases where no fuel consumption values are available the BM calculation is not directly based on the given efficiency values which are derived from publicly available sources. This leads to (small) inconsistencies in the calculation. <p>Thus the GEF calculation needs to be revised and all related project documentation has to be updated.</p>
Corrective Action #4	The original file, containing the formulas to calculate GEF is issued by Directorate General of Power and Energy Usage. The file has been submitted to the validator.
Assessment of validation team #4	The file has been received and reviewed. Thus a) and b) have been addressed appropriately. Nevertheless the mistakes e) and f) as well as the other inconsistencies have not been addressed.
Corrective Action #5	The GEF calculations have been revised and a new factor of 0.888 tCO ₂ e/MWh calculated. All the above items have been addressed in the excel file title GHG JAMALI GEF rev 1. ST stands for steam turbine.
Assessment of validation team #5	The calculation sheet has been revised appropriately. CAR is closed out.
Conclusion	<p><input type="checkbox"/> To be checked during next periodic verification</p> <p><input type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> PDD was corrected correspondingly</p> <p><input type="checkbox"/> Appropriate action was not taken / additional action needs to be taken</p> <p><input checked="" type="checkbox"/> The project complies with the requirements</p>

	CAR B2
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> FAR <input type="checkbox"/> CR <input type="checkbox"/> None
Findings	The small boiler is still used under certain operational conditions. This has to be addressed in the PDD, esp. in the monitoring section.
Corrective Action #1	The small boiler is omitted from the project activity section of the PDD since it is no longer used in the project activity. The monitoring plan does not contain a plan for the small boiler (see PDD).

	CAR B2
Assessment of validation team #1	Baseline emissions from the small boiler are still considered in section B.4. and thus for the ex-ante ER calculation
Corrective Action #2	Small boiler already been removed in the entire PDD
Assessment of validation team #2	OK.
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken <input checked="" type="checkbox"/> The project complies with the requirements

	CAR B3
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> FAR <input type="checkbox"/> CR <input type="checkbox"/> None
Findings	The barrier analysis in section B.5 has to be further substantiated.
Corrective Action #1	This section has been revised and is now in the PDD (p 20-24).
Assessment of validation team #1	<p>The financial barrier and the other barriers have been further substantiated. Esp. the described financial barrier is likely to form a significant barrier w.r.t. the additionality assessment.</p> <p>Nevertheless all financial parameters leading to the presented IRR of 10.1 % and the usual cost of capital need to be further backed up by evidences.</p>
Corrective Action #2	2004 financial analysis excel spreadsheet will be use as a back up data.
Assessment of validation team #2	The financial analysis and the applied benchmark still need further substantiation.
Corrective Action #3	The financial barrier had been revised in the PDD, see p. 20. IRR benchmark also mentioned on the same paragraph. Excel file for the IRR calculations submitted as the back up evidence IRR benchmark, see p. 20 on the financial barrier section).
Assessment of validation team #3	<p>The financial analysis as provided in the Excel calculation sheet needs further elaboration and revision w.r.t. the following:</p> <ul style="list-style-type: none"> a) The provided Excel calculation does not include the underlying formulae. b) The Excel calculation sheet shows inconsistencies regarding the application of the inflation rate, the naming of costs (e.g. Operation and Maintenance) c) Justification of all applied parameters by appropriate evidences d) The IRR is not calculated. <p>Furthermore the justification of the applied benchmark value needs to be in line with the UNFCCC guidance (EB 41 Annex 45).</p>

	CAR B3
Corrective Action #4	<ul style="list-style-type: none"> a. PTCI would submit the excel file with the underlying formulae (applied only to the IRR calculation column). b. PTCI has internal consideration to use certain inflation rate in its IRR exercise. The reasons are to be elaborated in separated PDF file. (The file title: Response to TUV Nord CAR B3). c. Each explanation of applied parameters in the IRR file is written is separated PDF file. (The file title: Response to TUV Nord CAR B3). d. IRR is calculated. PTCI will submit the excel file of IRR with underlying formulae, only applied to IRR calculation, not other calculations/formulas. e. PTCI used internal applied benchmark for IRR (it shall be submitted as evidence). (The file title: Response to TUV Nord CAR B3). f. PTCI performed sensitivity analysis with project cost to be +10%/-10%. (The file title: Response to TUV Nord CAR B3).
Assessment of validation team #4	<p>The complete XLS has been submitted. After the review of the same the following problems have not been addressed appropriately.</p> <ul style="list-style-type: none"> 1.) as per the PDD the operational lifetime of the project is 30 y. The chosen assessment period is 10 y. Nevertheless the fair value of the project activity assets at the end of the assessment period has not been considered in the calculations. 2.) It could not sufficiently be justified, why the inflation rate has been applied in relation to the costs but only for the first 2 years in case of the revenue stream. 3.) The sensitivity analysis has to be included in the PDD. 4.) The applied benchmark is not appropriately justified in the PDD. <p>the sensitivity analysis shall be included in the PDD</p>
Corrective Action #5	<ul style="list-style-type: none"> 1). The operational life period have been changed in PDD to 10-15 years to be consistent with Cabot practice. A residual book value has been assigned at the end of 10 years life and IRR calculation revised. 2). Justification for not increased electricity price is referenced in PDD (see Annex 5). 3). Sensitivity analysis and benchmark basis is now included in PDD section B.5.
Assessment of validation team #5	All raised issues have been addressed appropriately. CAR is closed out
Conclusion	<ul style="list-style-type: none"> <input type="checkbox"/> To be checked during next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken / Further evidences are pending <input checked="" type="checkbox"/> The project complies with the requirements

CAR B4				
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> FAR	<input type="checkbox"/> CR	<input type="checkbox"/> None
Findings	All carbon emissions within the project boundary (baseline and project situation) should be addressed in the PDD (taking into consideration para. 11 of AMS III.Q).			
Corrective Action #1	<p>Sources of CO₂ emissions in the baseline are:</p> <ol style="list-style-type: none"> 1. Combustion of fossil fuel in the generation of electricity by KDL and by the national utility PLN using the combined emission factor of 0.844 tCO₂/MWh, please see p 19 and equation (8). 2. Combustion of natural gas by PTCL in a small boiler to generate process steam. This emission will not be included in the baseline emission of GHG (see CAR 2), for the small boiler will not be used in the project activity. 3. The GHG emission originated from the carbon black manufacturing process. This part of the emission is product dependent and is assumed to be the same in the baseline as well as in the project activity. <p>The total baseline emission is stated in equation (9). Source of the project emissions in the project activity is due to the combustion of natural gas only that is going to be used as back up service. This calculation is presented on p 28, the result is in equation (10). The emission reduction is given in equation (11).</p>			
Assessment of validation team #1	<ol style="list-style-type: none"> 1. The applicable GEF is subject to the closure of CAR B1 2. Equation 8 in the PDD version 8 addresses the baseline emissions of the small boiler 3. Baseline emissions from the small boiler are still included in the ex-ante ER calculation 			
Corrective Action #2	<ol style="list-style-type: none"> 1. The new emission factor applied is of 0.908752 tCO₂/MWh 2. Small boiler had been removed from the entire PDD (see comments on CAR B2) 			
Assessment of validation team #2	The specific issues of this CAR have been addressed appropriately. The remaining issues are addressed in CAR B1 above.			
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken / additional action needs to be taken. <input checked="" type="checkbox"/> The project complies with the requirements			

CAR B5				
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	CAR B5			
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> FAR	<input type="checkbox"/> CR	<input type="checkbox"/> None
Findings	The factor f_{cap} should be derived from actual figures of the previously flared (baseline) and actually used (project) tail gas. This shall be reflected in the monitoring plan. Furthermore the corresponding formula should be provided.			
Corrective Action #1	<p>The amount of tail gas flared has been recently calculated. The data are as follows:</p> <ol style="list-style-type: none"> 1. FY 2005 the amount of tail gas flared is 221,507,294 Nm³; 2. FY 2006 the amount of tail gas flared is 281,331,846 Nm³; 3. FY 2007 the amount of flared tail gas is 331,023,535 Nm³. <p>Since the 2007 mode of operation will be the trend of operation in the future, the f_{cap} is calculated as per 2007 data.</p> <p>The amount of tail gas which will be utilized to generate electricity in the project activity is 38000 Nm³/h. Assuming a 90% operation days, the $f_{cap} = (331023535 \text{ Nm}^3/\text{y}) / (299592000 \text{ Nm}^3/\text{y}) = 1.105$.</p>			
Assessment of validation team #1	<ol style="list-style-type: none"> 1. f_{cap} needs to be addressed in the monitoring plan, including the applicable formula. 2. the value for the amount of flared gas in the year 2007 needs to be backed up by additional evidence(s). 			
Corrective Action #2	<p>FY 2007 the amount of flared tail gas is 329,173,548 Nm³. The $f_{cap} = (329,173,548 \text{ Nm}^3/\text{y}) / (316,464,000 \text{ Nm}^3/\text{y}) = 1.04$.</p> <ol style="list-style-type: none"> 1. Need clarification if the f_{cap} need to be addressed in monitoring plan! The f_{cap} calculated based on the amount of TG flared in the baseline using 2007 data (mass balance data/no measurement data available due to technical reasons). We would generate power more than 5.5 MW (gross), meaning the tail gas consumption will not exceeding the amount that available from the process. Generation of the power most likely will be reduce as the tail gas supply decrease according to the carbon black operation situations. However the f_{cap} monitoring plan already added in the section B.7.1. <p>Data will be available as a back up.</p>			
Assessment of validation team #2	The f_{cap} should be addressed and its value should be 1 not 1.04.			
Corrective Action #3	<ol style="list-style-type: none"> 1. f_{cap} monitoring table had been added at the B.7.1 tables 2. Full year of 2007 tail gas data submitted for back up data as requested. 			
Assessment of validation team #3	f_{cap} including the applicable formula has been included in the MP. Nevertheless the detailed 2007 data is still pending.			
Corrective Action #4	The detail 2007 data has been submitted to the validators.			
Assessment of validation team #4	OK			

	CAR B5
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input type="checkbox"/> MR was corrected correspondingly <input type="checkbox"/> Additional action is necessary <input checked="" type="checkbox"/> The project complies with the requirements

	CAR B6
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> FAR <input type="checkbox"/> CR <input type="checkbox"/> None
Findings	The information provided within chapter B.7.1 regarding each monitoring parameter needs further elaboration esp. w.r.t. the installed measuring equipment, the QA/QC procedures and the units used. Used units should reflect the fact that integrated figures (e.g. annual figures) are needed for the monitoring.
Corrective Action	This section has been revised in PDD.
Assessment of validation team	OK
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken <input checked="" type="checkbox"/> The project complies with the requirements

	CAR B7
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> FAR <input type="checkbox"/> CR <input type="checkbox"/> None
Findings	The parameters "Natural gas used in cogeneration" and "Tail gas used in cogeneration plant" are included in both sections B.6.2 and B.7.1.

	CAR B7
Corrective Action #1	<p>Yes, they are intended to be so. B.6.2 portrays the baseline condition, and B.7.1 portrays the project activity condition.</p> <p>In B.6.2, the title should be: Tail gas to be used in Cogeneration plant, that is a design value, and Natural gas used in the small boiler.</p> <p>Additionally :</p> <p>On old process (before CDM project the situation is that Natural gas is a secondary feed stock for Carbon Black manufacturing of PT Carbon Indonesia).</p> <p>Current situation (After the CDM Project)</p> <ol style="list-style-type: none"> 1. Natural Gas is a secondary feedstock for Carbon black manufacturing /PT. Cabot Indonesia. 2. Natural gas is for start up only or back up <p>Section B.7.1 Electricity produced 5.5 MW and 1.5 MW of it exported to KDL</p>
Assessment of validation team #1	<ol style="list-style-type: none"> 1. The same parameter can not be included in both sections B.6.2 and B.7.1 with 2 different applied values. 2. This applies also for the parameter "Electricity import from KDL". 3. If the small boiler is excluded from the project boundary there is no need to include this parameter. <p>Furthermore the parameter "Electricity export to KDL" is included twice in section B.7.1 – including two different applicable values.</p>
Corrective Action #2	<ol style="list-style-type: none"> 1. Need clarification! Does the comments suggesting that the Natural gas used in cogeneration and tail gas used in cogeneration in section B.6.2 shall be removed? 2. Needs clarification (Same as above comments) 3. Small boiler already been removed.
Assessment of validation team #2	The requested CA still needs to be taken.
Corrective Action #3	The correction had been made, only the GEF of Jamali grid that addressed in B.6.2. The rest of parameters had been moved to B.7.1
Assessment of validation team #3	OK
Conclusion	<p><input type="checkbox"/> To be checked during next periodic verification</p> <p><input type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> PDD was corrected correspondingly</p> <p><input type="checkbox"/> Appropriate action was not taken</p> <p><input checked="" type="checkbox"/> The project complies with the requirements</p>

	CAR B8
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	CAR B8			
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> FAR	<input type="checkbox"/> CR	<input type="checkbox"/> None
Findings	The section "Value of date applied..." is not filled for the parameter "Electricity export to KDL" is not filled.			
Corrective Action #1	Value has been input based on real data from January to September 2008, which is: 11,695 MWh/y			
Assessment of validation team #1	This parameter is included twice in section B.7.1. – including 2 different values to be applied for purpose of ex-ante calculation.			
Corrective Action #2	The second table for "Electric export to KDL" was a typo, and had been removed. 11,695 MWh/y is the correct one.			
Assessment of validation team #2	OK			
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken / additional action needs to be taken <input checked="" type="checkbox"/> The project complies with the requirements			

	CAR B9			
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> FAR	<input type="checkbox"/> CR	<input type="checkbox"/> None
Findings	Section B.8 should be filled in.			
Corrective Action #1	Section B.8 is applied only for new methodology not an approved methodology, AMS IIIQ is approved methodology therefore it is not applicable for this project.			
Assessment of validation team #1	This section needs to be filled. The date of completion of the application of the baseline and monitoring methodology and the name of the responsible person(s) / entity(ies) shall be given.			
Corrective Action #2	Date of the final draft already adopted in the PDD ver. 3 see p. 34			
Assessment of validation team #2	OK			
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken <input checked="" type="checkbox"/> The project complies with the requirements			

	CAR B10
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	CAR B10			
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> FAR	<input type="checkbox"/> CR	<input type="checkbox"/> None
Findings	As superheated steam is used also the steam temperature is necessary to be monitored			
Corrective Action #1	The figure is: 420 °C, the Monitoring Plan has been incorporated into the PDD.			
Assessment of validation team #1	The parameter is not included in section B.7.1			
Corrective Action #2	See page 30 revised PDD			
Assessment of validation team #2	OK			
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> PPD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken <input checked="" type="checkbox"/> The project complies with the requirements			

	CAR B11			
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> FAR	<input type="checkbox"/> CR	<input type="checkbox"/> None
Findings	Additional parameters need to be monitored: - imported electricity - NCV of NG should also be monitored. Furthermore all formulae used for the monitoring should be given in the monitoring plan.			
Corrective Action #1	Imported electricity: A corresponding table has been included in section B.7.1 NCV: NCV noted by receiving bills from supplier monthly. Action will be taken by Cabot Indonesia is to add on block for monitoring plan from supplier data later.			
Assessment of validation team #1	Imported electricity: OK. Nevertheless the applied value needs to be backed up by additional evidence. NCV: This parameter shall be included in section B.7.1 A fixed value, as given in B.6.3, is only suitable for ex-ante calculation (see also CR B1). Both parameters need to be considered in section B.6.3.			
Corrective Action #2	1.The NCV monitoring in B.7.1 had been added on the revised PDD. 2.The NCV on B.6.3 was using the Indonesian average value based on the energy survey done nationally. The figure had been use in Indonesia by Indonesian Ministry of Energy, Pertamina the National Oil Company and by the National Research & Application of Technology Body.			

	CAR B11
Assessment of validation team #2	OK
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken / additional action needs to be taken <input checked="" type="checkbox"/> The project complies with the requirements

	CAR B12
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> FAR <input type="checkbox"/> CR <input type="checkbox"/> None
Findings	The description of the monitoring plan (section 7.2) should further be elaborated.
Corrective Action #1	This section has been revised in PDD (see p.35)
Assessment of validation team #1	As B.6.3 does not reflect all formulae applicable for monitoring this section is suitable to describe the complete calculation procedure for monitoring. In order to avoid ambiguity at the verification stage a description of the set of applicable formulae, i.e. how the monitoring parameters are computed, should be included in this section.
Corrective Action #2	The monitoring formulae has been inserted into PDD file in section B.7.2, page 34.
Assessment of validation team #2	OK
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken / additional action needs to be taken <input checked="" type="checkbox"/> The project complies with the requirements

	CAR B13
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> FAR <input type="checkbox"/> CR <input type="checkbox"/> None
Findings	The alternatives listed in para 7 of AMS-I.C shall be discussed in section B.4 of the PDD.
Corrective Action #1	AMS-I.C is not applied to this PT Cabot Indonesia CDM Project since this project is not a renewable energy project but waste heat recovery. The most important point is that Cabot Indonesia is not intent to look for other source of energy but only by using steam or waste heat recovery.

	CAR B13
Assessment of validation team #1	As per para. 9 of AMS III.Q the paragraphs 6 to 13 of AMS.I.C are applicable for computing the baseline emissions.
Corrective Action #2	The alternatives listed in para 7 AMS-I.C discussed at p. 18 on the second paragraphs.
Assessment of validation team #2	OK
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken <input checked="" type="checkbox"/> The project complies with the requirements

	CAR C1
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> FAR <input type="checkbox"/> CR <input type="checkbox"/> None
Findings	The start of the crediting period and the corresponding ER calculation needs to be adjusted.
Corrective Action #1	On PDD page 35 stated September 2008
Assessment of validation team #1	The CP shall not start before April 2009
Corrective Action #2	In the revised PDD starting date mentioned as May 2009
Assessment of validation team #2	Needs to be changed to September 2009
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken <input checked="" type="checkbox"/> The project complies with the requirements

	CAR C2
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> FAR <input type="checkbox"/> CR <input type="checkbox"/> None
Findings	During the site visit it was evidenced that the project starting date was May 2005. Therefore the date given in section C.1.1 needs to be revised.
Corrective Action #1	In 2005 only the internal decision of Cabot Corporation was taken. The project construction started in 2007. Thus the starting date of this CDM project is the year 2007.

	CAR C2
Assessment of validation team #1	As per the CDM glossary of terms the start date shall be considered to be the date on which the project participant has committed to expenditures related to the implementation or related to the construction of the project activity. Thus the date of the management decision (May. 2005) shall be considered as the starting date.
Corrective Action #2	Already changed to May 2005 in the revised PDD to reflect this comment.
Assessment of validation team #2	Not sufficient, the prior consideration of the CDM has to be demonstrated and evidenced in line with the EB guidance Annex 46, EB 41. Furthermore the comment in section C.1.1 is not clear.
Corrective Action #3	Prior consideration of the CDM is demonstrated and evidenced in the PDF file attached (file title is Response to TUV Nord CAR C2.pdf)
Assessment of validation team #3	Sufficient documentation was provided to the validator to arrive at a final conclusion on this issue. Nevertheless the timeline of events shall be included in the PDD.
Corrective Action #4	Detailed timeline of project events is included in PDD together with a discussion demonstrated prior serious consideration of CDM revenues in the project decision initial process. (see PDD section B.5).
Assessment of validation team #4	OK
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken / additional action needs to be taken <input checked="" type="checkbox"/> The project complies with the requirements

	CR A1
Classification	<input type="checkbox"/> CAR <input type="checkbox"/> FAR <input checked="" type="checkbox"/> CR <input type="checkbox"/> None
Findings	Various evidences like (1) stake holder meeting records (2) 3 years data of tail gas quantities in the baseline scenario (3) a proof of serious consideration of CDM during the stage of management decision. could not be provided so far.
Corrective Action #1	All data has been provided

	CR A1
Assessment of validation team #1	<ol style="list-style-type: none"> 1. Stake holder meeting records: OK 2. Tail gas quantities: OK 3. Evidence is still pending that the expected revenues of the CDM played a role at the stage of the management decision to overcome the actual or perceived project barriers.
Corrective Action #2	Need clarifications! We had shown the spreadsheet for the financial analysis developed in 2004 during the visit the file also sent to TUV. On the spreadsheet it mentioned the different when the CDM included in the equations.
Assessment of validation team #2	The decision itself could be evidenced during the site visit. The Excel calculation sheet was provided afterwards. Considering the pending CAR C2 this CR can be closed out.
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken / additional action needs to be taken <input checked="" type="checkbox"/> The project complies with the requirements

	CR A2
Classification	<input type="checkbox"/> CAR <input type="checkbox"/> FAR <input checked="" type="checkbox"/> CR <input type="checkbox"/> None
Findings	SI units shall preferably be used in the PDD and the ER calculation.
Corrective Action #1	Why should be changed to SI units meanwhile almost all CDM project is using tCO ₂ unit?
Assessment of validation team #1	As per the various CDM guidelines (e.g. EB09 Annex 3) shall preferably be used.
Corrective Action #2	All parameters had already been changed to SI units.
Assessment of validation team #2	OK
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken <input checked="" type="checkbox"/> The project complies with the requirements

	CR B1
Classification	<input type="checkbox"/> CAR <input type="checkbox"/> FAR <input checked="" type="checkbox"/> CR <input type="checkbox"/> None
Findings	Additional clarification is needed to determine that the EF calculation is in line with para. 9 of AMS I.D.

	CR B1
Corrective Action #1	Cabot Indonesia is not looking for alternative energy but utilize waste heat recovery / steam therefore AMS-I.C is not applicable
Assessment of validation team #1	See comment CAR B.13
Corrective Action #2	Emission calculations descriptions added in the revised PDD, see p. 19.
Assessment of validation team #2	The approach to determine the GEF has been revised completely and is now in line with the requirements of AMS I.D. Nevertheless necessary corrections (as discussed for CAR B1) have to be included in the PDD. CR is closed out.
Conclusion	<input type="checkbox"/> To be checked during next periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input type="checkbox"/> PDD was corrected correspondingly <input type="checkbox"/> Appropriate action was not taken <input checked="" type="checkbox"/> The project complies with the requirements

5 VALIDATION ASSESSMENT SUMMARY

The following paragraphs include the summary of the final validation assessments after all CARs and CRs are closed out. For details of the assessments pl. refer to the discussion of the validation findings in chapter 4 and the validation protocol (Annex 1).

5.1 General Description of the Project Activity

5.1.1 Participation

LOA

The project is of unilateral kind. A letter of approval has been received from the host party, Indonesia. The letter was provided by the project participant. The authenticity was confirmed during the DNA visit.

The letter confirms that (i) the party involved is a party to the Kyoto Protocol, (ii) that participation is voluntary, and (iii) that the project contributes to the sustainable development of the country. The LOA refers to the precise project title in the PDD being submitted for registration.

The letter of approval is assessed as valid.

Project Participants

The project participant is listed in section A.3 of the PDD and this information is consistent with the contact details provided in annex 1 of the PDD. The DNA of Indonesia has approved the participation of the project participant, together with the letter of approval. No entities other than those approved or authorised to be project participants are listed or indicated in these sections of the PDD.

For an in depth evaluation of these topics, please refer to section A.1 of the table A-1 of annex 1.

5.1.2 Contribution to Sustainable Development

The contribution of the project activity to sustainable development of the host country has been confirmed within the host government approval ^{/LOA/}.

For an in depth evaluation of these topics, please refer to section A.2 of the table A-1 of the annex 1.

5.1.3 PDD Editorial Aspects

The PDD is in line with the structure and guidance given in the latest relevant PDD template^{/PDD-T/} for the type of project and the latest version of the guidelines for completing the PDDs^{/GCSCP/}.

For an in depth evaluation of these topics, please refer to section A.3 of the table A-1 of the annex 1.

5.1.4 Technology to be Employed

The description of the project as contained in the PDD is complete and accurate and it provides the reader with a clear understanding of the nature of the project activity.

The technology and know-how used in the project activity is assessed to be environmentally safe and sound.

For an in depth evaluation of these topics, please refer to section A.4 of the table A-1 of the annex 1 and chapter 2 of this validation report.

5.1.5 Small Scale Projects

The project qualifies as a small scale project activity type III as (i) the expected emission reductions does not exceed 60,000 t CO_{2e}/a and (ii) it is not a debundled component of a large scale CDM project activity.

The project activity applies a valid Small Scale CDM methodology. No meth tools are referenced in this methodology.

For an in depth evaluation of these topics, please refer to section A.5 of the table A-1 of the annex 1.

5.2 Project Baseline, Additionality and Monitoring Plan

5.2.1 Application of the Methodology

The project applies to a valid version of a Small Scale CDM Methodology approved by the Board. By means of cross check it can be confirmed that the applied methodology is directly derived from the methodologies' section on the CDM website^{/unfccc/}.

The project activity meets all applicability conditions of the applied methodology AMS.III.Q (version 1). Beyond this, the proposed project activity meets all the other

possible requirements or stipulations mentioned in all sections of the selected methodology.

Furthermore the project activity is not expected to result in significant emissions, related both to project and leakage, other than those listed in the methodology.

Summarised it is assessed that the project applies a valid version of an approved CDM methodology and the methodology is applicable to the project.

For an in depth evaluation of these topics, please refer to section B.1 of the table A-1 of the annex 1.

5.2.2 Project Boundary

The PDD correctly describes the project boundary including the physical delineation of the project activity and the description of the emission sources and GHGs that are included in the project boundary for the purpose of calculating project and baseline emissions for this project activity.

No emission sources which are impacted by the project activity but not addressed by the approved methodology have been identified during validation.

For an in depth evaluation of these topics, please refer to section B.2 of the table A-1 of the annex 1.

5.2.3 Baseline Identification

The PDD provides a transparent and verifiable description of the identified most plausible baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity.

The procedure to identify the most plausible baseline scenario derived from the methodology (para 9 of the methodology) has been applied correctly and is transparently and sufficiently documented in the PDD.

The identification of possible alternatives of the project activity was carried out appropriately. Furthermore the PP has shown that all relevant policies and circumstances have been identified and correctly considered in the PDD in accordance with the guidance by the CDM EB.

Summarised it can be assessed that the identified baseline scenario reasonably represents what would occur in the absence of the proposed project activity and the approved methodology used is applicable to the identified baseline scenario.

For an in depth evaluation of these topics, please refer to section B.3 of the table A-1 as well as table A-2 of the annex 1.

5.2.4 Calculation of GHG Emission Reductions

The PDD applies steps and equations to calculate project emissions, baseline emissions, leakage and emission reductions as per the requirements of the methodology.

For the calculation of the GHG emission reductions, the correct equations have been used reflecting the methodological choices. Furthermore all equations are applied correctly.

For the data and parameters not to be monitored throughout the crediting period (i.e. they are determined only once and thus remain fixed throughout the crediting period), it is assessed that all data sources, assumptions and calculations are correct, applicable to the project and contribute to a conservative estimate of the emission reductions. For the data and parameters subject to monitoring it is confirmed that the emission reduction estimates provided in the PDD are reasonable and conservative.

The grid emission factor calculation was verified by means of the DNA visit and independent counter calculation. Identified need for corrective action was appropriately addressed by the project participant.

For an in depth evaluation of these topics, please refer to sections B5-B6 of the table A-1 of the annex 1.

5.2.5 Additionality Determination

Consideration of CDM in Decision Making (if Project Starts before Validation)

The starting date of the project activity given in the PDD is before validation start. It is confirmed that this date has been reported in accordance with the CDM glossary of terms. The following sequence of events has been evidenced by the PP:

- a) May 03: CERA study on the project incl. possible CDM incentives
- b) Dec 04: Internal approval for construction
- c) May 05: Project approval from Board of Directors (considered as project starting date)
- d) Nov 05: Purchase order for long-delivery equipment
- e) Dec 05: Search for CDM consultant
- f) July 07: PDD development contract
- g) Jun 08: Global Stakeholder Consultation

In line with the CDM glossary of terms the PP considers May 2005 to be the starting date of the project activity, as the commitment for expenditure has been achieved in this month from the Cabot HQ. Since then the project has undergone various problems which led to various delays in the project realization.

On the basis of the above mentioned the validation team is convinced that the CDM has been considered before the starting date of the project activity. Nevertheless it took about 18 months before additional steps to secure the CDM status were taken. The PP has explained this fact satisfactorily during the site visit and various follow up discussions. The validation team is convinced that this delay was due to serious problems during the project implementation phase (e.g. the project was set on hold, key personnel left) and very low level of experience in the local CDM market.

Application of Methodology / Methodological Tools

The additionality was justified in accordance with attachment A to Appendix B of the simplified modalities and procedures for small scale CDM project activities.

Alternatives

The PDD contains a complete list of all realistic alternatives to the project scenario. The list contains inter alia the project activity not undertaken as a CDM project activity and the continuation of the status quo.

Investment Analysis

The validation team has conducted a thorough assessment of parameters and assumptions used in calculating the relevant financial indicator, the parameters are determined accurately. This was checked by means of cross-checking the evidences provided by the PP as well as acquired through background investigation (public regulation, local tax laws, electricity price policy, etc.); besides, expertise in relevant accounting practices has been consulted.

The calculation of the IRR is in line with the most recent version of the “Guidance on the Assessment of Investment Analysis” as provided by the CDM Executive Board.

All parameters have been evidenced by appropriate evidences. The IRR calculation is based on approaches and estimations available at the time of the management decision. Due to various problems in the project implementation the CAPEX was underestimated at that time and found to be significantly higher when the project was actually realized.

Nevertheless the original calculation shows that the project was only able to achieve an IRR of about 10 %, which is in the order of the WACC of Cabot. Evidence was

provided to the validation team that Cabot usually only invests in projects where the IRR is at least 12 to 13 percent. This has been evidenced during the site visit. Thus this value (interval) can be considered as an appropriate benchmark. In this context it has to be mentioned that the project could only be realized by Cabot as it is part of the carbon black plant in Cilegon.

The validation team identified the fact that the electricity prices were not escalated after 2 years as a critical assumption. The PP has provided sufficient evidences (see annex 5 of the PDD) that this assumption can be considered as reasonable at the time of decision making.

The approach of the sensitivity analysis included by the project participants has been assessed as appropriate. On the basis of experiences from the project implementation the justifications as provided by the project participants can be considered as appropriate.

To summarize, sufficient confidence was gained to arrive at the conclusion that the financial benefit gained from the project activity did not meet the usual financial expectations of Cabot without CDM revenues whereas the CDM benefits enable an acceptable financial return.

Barrier Analysis

The PP has justified the additionality on the basis of

- a) Investment barriers
- b) Technological barriers
- c) Other barriers

Though all barriers are justified to a certain extent, none of the barriers was assessed by the validation team to be a decisive barrier which would have prevented the project from realization.

For an in depth evaluation of these topics, please refer to sections B8 of the table A-1 of the annex 1.

Summary

The procedure to justify the additionality of the project activity derived from the methodology or required methodological tools has been applied correctly and is transparently documented in the PDD.

The validation team is convinced that the CDM was seriously considered during the Management Decision for the project.

Considering all statements above, the validation team arrived at the conclusion that the project activity is **additional** because the project is not financially viable without CDM revenues, whereas none of the other presented barriers could be considered as a decisive barrier for the project implementation.

5.2.6 Monitoring Methodology

The monitoring methodology (AMS III.Q; version 1) has been applied correctly.

For an in depth evaluation of these topics, please refer to section B9 of the table A-1 of the annex 1.

5.2.7 Monitoring Plan

The monitoring plan covers all monitoring parameters as stipulated in the applied monitoring methodology. The monitoring plan can be implemented and the validation team arrived at the conclusion that all monitoring arrangements are feasible within the project design.

For an in depth evaluation of these topics, please refer to section B9 of the table A-1 of the annex 1.

5.2.8 Project Management Planning

The project management planning is appropriate for the purpose of the projects monitoring.

For an in depth evaluation of these topics, please refer to section B.14 of the table A-1 of the annex 1.

5.2.9 Crediting Period

The project starting date is May 2005 and the duration of the crediting period is fixed 10 years from 2009-09-01 to 2019-08-31, which is deemed realistic and appropriate.

For an in depth evaluation of these topics, please refer to section C of the table A-1 of the annex 1.

5.2.10 Environmental Impacts

The Host Country Indonesia does not require an Environmental Impact Assessment (EIA) for the project. Furthermore on the basis of document review and the on-site visit the validation team is convinced that negative environmental impacts due to the project are unlikely to occur.

For an in depth evaluation of these topics, please refer to section D of the table A-1 of the annex 1.

5.2.11 Comments by Local Stakeholders

The local stakeholder consultation process for the project was carried out in line with the applicable requirements.

For an in depth evaluation of these topics, please refer to section D of the table A-1 of the annex 1.

6 VALIDATION OPINION

PT Cabot Indonesia has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project: "Utilization of the heat content of tail gas at PT Cabot Indonesia, Cilegon" with regard to the relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria include article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakech Accords) and the relevant decisions by COP/MOP and CDM Executive Board.

In the course of the pre-validation 16 Corrective Action Requests (CARs) and 3 Clarification Requests (CLs) were raised and successfully closed.

The review of the project design documentation and additional documents related to baseline and monitoring methodology, the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfilment of all stated criteria.

In detail the conclusions can be summarised as follows:

- The project is in line with all relevant host country criteria (Indonesia) and all relevant UNFCCC requirements for CDM. Project activity approval has been obtained from DNA of Indonesia vide the Letter of Approval (HCA) dated 2008-09-25.
- The project additionality could sufficiently be justified in the PDD.
- The monitoring plan is transparent and adequate.
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 315,241 tCO₂e will be most likely achieved within the fixed 10 y crediting period.

The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.

Essen, 2009-06-06



Rainer Winter
TÜV NORD JI/CDM Certification
Program
Validation Team Leader

Essen, 2009-06-07



Eric Krupp
TÜV NORD JI/CDM Certification
Program
Final Approval

7 REFERENCES

Table 7-1: Documents provided by the project participant

Reference	Document
/ADD/	<ol style="list-style-type: none"> 1. Environmental monitoring and measurement and assessment; 2. Project Milestone Schedule; 3. Financial executive summary; 4. Tail gas emission 5. Capital management system
/DPR/	<p>Detailed Project Feasibility Study extracts for</p> <ul style="list-style-type: none"> • Lifetime of the project activity (10-15 years) • Engineering Budget • Technical details of the project realisation, geology, environmental considerations, turbine location, equipment parameter (turbine, generator)
/ECSD/	Evidence of Construction Starting Date
/EIA/	Environmental Impact assessment, 05 September 2007
/HCA/	Host Country Approval (25 September 2008)
/LTL/	Layout of Turbines Location
/MD/	<ol style="list-style-type: none"> 1. Director Meeting Minutes for CDM Introduce, date 17 January 2008 2. The Project Construction Permission by Development & Reform Commitment which CDM activity was involved dated 08 January 2008
/MMM/	Monitoring and Management Manual
/PDD/	Project Design Document entitled "Utilization of heat content of tail gas at PT. Cabot Indonesia" The document version no. 04 dated 08 June 2008.
/PHT/	Photographs of progress of construction activity at the project site
/PLR/	<ol style="list-style-type: none"> 1. The Approved Feasibility Study Report and Construction Permission by Development & Reform Commitment 2. Project Land Occupation Approval
/PO/	Turbine Supplier, Generator Supplier contract
/SSR/	Stakeholders Survey Records , date 17 January 2008

Reference	Document
/WD/	Wiring Diagram; PID Cogen system – Tail Gas System P&I Diagram
/XCS/	Emission reduction excel calculation sheet

Table 7-2: Background investigation and assessment documents

Reference	Document
/AM/	Approved SSC Methodology AMS-III.Q: “Waste gas based energy systems”
/AM-IC/	Approved SSC Methodology AMS-I.C: “Thermal energy for the user with or without electricity”
/AM-ID/	Approved SSC Methodology AMS-I.D: “Grid connected renewable energy generation “
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/GCSCP/	UNFCCC: Guidelines for completing the simplified project design document (CDM-SSC-PDD) and the form for submissions on methodologies for small-scale CDM project activities (F-CDM-SSC-Subm)
/IPCC/	2006 IPCC Guidelines for National Greenhouse Gas Inventories
/GEF/	Official data sources for Grid Emission Factor (NWPG Grid)
/IPCC-RM/	Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual
/ISBMM/	Indicative simplified baseline and monitoring methodologies for selected small scale CDM project activity categories (Version 12, EB 41, annex 20)
/KP/	Kyoto Protocol (1997)
/MA/	Decision 3/CMP.1 (Modalities and procedures for a clean development mechanism as defined in Article 12 of the Kyoto Protocol)
/PDD-T/	PDD Template: CDM-SSC-PDD - Project Design Document form for Small-Scale project activities

Reference	Document
/SMP/	Simplified modalities and procedures for small-scale clean development mechanism project activities (Annex II to Decision 21/CP.18)

Table 7-3: Websites used

Reference	Link	Organisation
/cam/	www.cabot-corp.com	PT. Cabot Indonesia
/cd4cdm/	www.cd4cdm.org	UNEP Riso Centre
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications
/unfccc/	http://cdm.unfccc.int	UNFCCC

Table 7-4: List of interviewed persons

Reference	Mol ¹	Date		Name	Organisation / Function
/IM01/	V	2008-07-16 to 2008-07-17	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Johnson K. Sitorus	PT Cabot Indonesia / Director & Financial Controller
/IM01/	V	2008-07-16 to 2008-07-17	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Lucky Soemawisastra	PT Cabot Indonesia / Technical & Engineering Manager
/IM01/	V	2008-07-16 to 2008-07-17	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	John GC Brouwer	PT Cabot Indonesia / Cogen Engineer & Jetty Master
/IM01/		2008-07-16 to 2008-07-17	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Priyatna	PT Cabot Indonesia / Operation Manager
/IM01/	V	2008-07-16 to 2008-07-17	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Agus Muchliawan	PT Cabon Indonesia / Environment Engineer

¹⁾ Means of Interview: (Telephone, E-Mail, Visit)

ANNEX

- A1:** Validation Protocol
- A2:** Assessment of Financial Parameters
- A3:** Outcome of the Global Stakeholder Consultation Process
- A4:** Appointment Certificates of Team Members

ANNEX 1: VALIDATION PROTOCOL

Table A-1: Requirements Checklist

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
A. General Description of Project Activity				
A.1. Approval <i>The written approval of the parties involved is a mandatory requirement</i>				
A.1.1. Has the project written approvals of all parties involved?	No letters of approval have been received so far. Letter of Approval (25 September 2008) has been received from Project Participant	/IM01/	CAR A1	OK
A.1.2. Are the approvals issued from organisations listed as DNAs on the UNFCCC CDM website?	N/A (see above)	-	See CAR above	OK
A.1.3. Does the written approvals confirm	Indonesia is a party to the Kyoto Protocol. The UNFCCC	/unfccc/	See	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
that the corresponding party is a party to the Kyoto protocol?	website has been checked. The LoA has been issued by Indonesia DNA dated 25 September 2008.		CAR above	
A.1.4. Does the written approvals confirm that the corresponding party is a party to the Kyoto protocol?	N/A (see above)	-	See CAR above	OK
A.1.5. Does the written approvals confirm that the participation is voluntary?	N/A (see above)	-	See CAR above	OK
A.1.6. Does the written approval from the host country confirm that the project contributes to the sustainable development in the country?	N/A (see above)	-	See CAR above	OK
A.1.7. Does the written approvals refer to the precise project title in the PDD submitted for registration?	N/A (see above)	-	See CAR above	OK
A.1.8. Is the information regarding the project participants listed in section A3 and in Annex 1 of the PDD internally consistent to each other?	N/A (see above)	-	See CAR above	OK
A.1.9. Are all project participants listed in the PDD approved at least by one Party involved?	LoA has been issued for this project by Indonesia DNA dated 25 September 2008.	-	See CAR above	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
A.1.10. Are any other project participants approved but not listed in the PDD?	N/A (see above)	-	See CAR above	OK
A.2. Contribution to Sustainable Development <i>The project's contribution to sustainable development is assessed.</i>				
A.2.1. Has the host country confirmed that the project assists it in achieving sustainable development?	Letter of approval has been issued by the Indonesian DNA. Pl. refer to CAR A1		CAR A1	OK
A.2.2. Will the project create other environmental or social benefits than GHG emission reductions?	The project will create other environmental and social benefits than GHG emission reductions such as: <ul style="list-style-type: none"> - Improvement of air quality because of substitution of fossil fuel combustion. - Additional employment and income generation. - Improvement of electricity supply situation 	/PDD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
A.3. PDD editorial aspects <i>Is the PDD established using the latest procedures and forms and the latest guidance by the EB</i>				
A.3.1. Has the latest version of the PDD form been applied?	The latest version of the CDM-SSC-PDD (version 03) has been applied. No deviations thereof have been observed.	/PDD/ /PDD-T/ /unfccc/	OK	OK
A.3.2. Has the PDD been duly filled in accordance with the latest guidance(s)?	The PDD has in general been filled in accordance with the PDD guidelines. Minor editorial issues have been discussed with the PPs during the site visit. Nevertheless 1 CR was issued in order to improve the PDD: SI units shall preferably be used in the PDD and the ER calculation.	/PDD/ /unfccc/	OK CR A2	 OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
A.4. Technology to be employed <i>Validation of project technology focuses on the project engineering, choice of technology and competence/ maintenance needs. The validator should ensure that environmentally safe and sound technology and know-how is used.</i>				
A.4.1. Does the PDD contain a clear, accurate and complete project description and is this description in accordance with the real situation or (in case of greenfield projects) is it most likely that the project will be implemented acc to the project description?	<p>The project description is mainly given in section A.2 of the PDD. The description can be assessed as clear and transparent enough to enable a clear understanding of the project activity. The description could in general be verified during the site visit. Nevertheless the following CAR had to be raised:</p> <p>CAR B2: The small boiler is still used under certain operational conditions. This has to be addressed in the PDD, esp. in the monitoring section.</p> <p>For assessment the validation team has</p> <ul style="list-style-type: none"> (1) reviewed the PDD in detail (2) carried out a site visit incl. inspection of the construction on site, review of the technical data of the project related equipment and (3) carried out interviews with the PPs. 	/PDD/ /IM01/	CAR B2	OK
A.4.2. In case the project involves alteration of the existing installation or process,	The project involves the tail gas utilization from the carbon black production. A new steam boiler and a turbo – generator	/PDD/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
is a clear description available regarding the differences between the project and the pre-project situation?	<p>have been installed on site to enable the project activity. Apart from CAR B2 (see above) the scenario before and after has been clearly described and evidenced during the site visit.</p> <p>For assessment the validation team has</p> <ul style="list-style-type: none"> (1) reviewed the PDD in detail (2) carried out a site visit incl. inspection of the construction progress on site, review of the technical data of the project related equipment (3) checked old and updated layout plans and (4) carried out interviews with the PPs. 	/IM01/ /WD/ /LTL/		
A.4.3. Does the project design engineering reflect current good practices and does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	The validation team has checked the technical key data by reviewing the technical documentation from the technology supplier and checked the installed equipment during the on-site visit. The validation team arrived at the conclusion that the technology in the project design reflects current good practice and can be assessed to be state of the art.	/PDD/ /PLR/ /PO/ /IM01/	OK	
A.4.4. Does the project make provisions for meeting training and maintenance	The operational personnel has been trained to operate the newly installed equipment. Nevertheless it has to be mentioned, that the considered project activity is only an	/PDD/ /IM01/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
needs?	addition to a very complex technology which is already operated and maintained for several years before. Therefore already existing operational experience could be utilized.			
A.5. Small scale project activity <i>Is it assessed whether the project qualifies as small-scale CDM project activity</i>				
A.5.1. Does the project qualify as a small scale CDM project activity as defined in decision 1 / CMP.2 paragraph 28?	<input type="checkbox"/> The project does not qualify as a SSC project activity. <input checked="" type="checkbox"/> The project qualifies as a SSC project activity because the following criterion as per para 28 of decision 1/CMP.2 is met: <input type="checkbox"/> Type I: Maximum output capacity < 15 MW <input type="checkbox"/> Type II: Maximum output of 60 GHh/year <input checked="" type="checkbox"/> Type III: Emission reductions < 60 kt/year. Para 28 of decision 1/CMP.2 together with the original decision 17/CP.7 (paragraph 6 (c)) have been reviewed.	/unfccc/	OK	
A.5.2. Does the project apply one of the approved small scale categories and any methodology and tool referred therein?	The project activity applies the approved small scale methodology AMS-III.Q "Waste gas based energy systems" version 01. This version is applicable until 2009-06-09. No meth tools are referenced in this methodology.	/unfccc/ /IM01/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
A.5.3. Is the small scale project activity not a debundled component of a larger project activity?	The project activity is directly related to the carbon black production plant and the first one of its kind in this industry. Furthermore it is the first CDM project activity of the PP. Therefore the project is not to be considered as a debundled component of a LSC CDM project activity.		OK	
B. Project Baseline, Additionality and Monitoring Plan				
B.1. Application of the Methodology				
B.1.1. Does the project apply an approved and applicable CDM methodology and a valid version thereof?	<p>The project activity applies the approved small scale methodology AMS-III.Q "Waste gas based energy systems" version 01. This version is applicable until 2009-06-09.</p> <p>To ensure that the applied methodology is approved by the executive board and the PP has chosen the latest version, the methodologies section of UNFCCC CDM website was visited. Furthermore to assess the applicability of the project, the PDD was reviewed and the applicability determination of the PDD was counterchecked against the criteria given in the</p>	/PDD/ /AM/ /unfccc/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
	applicability section of the Methodology. The information in the PDD was checked during on-site visit to proof that the PDD information is valid and reflects the reality of the project.			
B.1.2. Is the applied CDM methodology identical with the version available on the UNFCCC website?	<input type="checkbox"/> The methodology applied by the PPs is identical with the version available on UNFCCC website. <input checked="" type="checkbox"/> The methodology applied has already been revised by the EB. Nevertheless this version of the methodology is still valid until 2009-06-09.	/PDD/ /AM/ /unfccc/	OK	
B.1.3. Are all applicability criteria in the methodology, the applied tools or any other methodology component referred to therein fulfilled?	<p>All applicability criteria for this project activity are met because:</p> <ul style="list-style-type: none"> • The project activity utilize waste gas at the existing facility for the generation of electricity and for direct use as steam. • The project activity is a new initiative • The emission reductions are estimated to be below the threshold value of 60 kt/a. • The energy produced is measurable. • The electricity generated is used onsite and exported to the grid. • In the pre-project scenario the waste gas was flared. To prove this manufacturer's specifications / information, schemes and diagrams from the construction of the 	/PDD/ /AM/ /LITL/ /PLR/ /PO/ /WD/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
	facility were presented to the validation team.			
B.1.4. Is the project in accordance to every other stipulation or requirement mentioned in all sections of the methodology?	<p>Generally the project follows all applicability criteria, baseline calculation approach, leakage and monitoring requirements of AMS-III.Q. Nevertheless, mistakes in realizing methodological requirements have occurred and need correction. In order to do so the following CARs and CRs have been addressed:</p> <p>The grid emission factor has to be determined on a regional basis, i.e. for the Java - Madura – Bali- (Jamali) grid, in line with the requirements of the “Tool to calculate the emission factor for an electricity system”. The same should be reflected in the ex-ante situation as well as for ex-post calculation in the monitoring plan.</p> <p>All carbon emissions within the project boundary (baseline and project situation) should be addressed in the PDD (taking into consideration para. 11 of AMS III.Q).</p>	/PDD/ /AM/	CAR B1 CAR B4	OK OK
B.2. Project Boundaries <i>Project Boundaries are the limits and borders defining the GHG emission reduction project.</i>				
B.2.1. Are the project's spatial boundaries (geographical) clearly defined?	In accordance with AMS-III.Q the project boundary encompasses all tail gas capture and utilization installations as well as the existing steam boiler which will be substituted	/PDD/ /IM01/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
	by the additional steam production. The suitability of the boundary definition was evidenced during the on-site visit.			
B.2.2. Are all sources and GHGs included in the project boundary as required in the applied methodology?	The baseline and project emissions are determined on the basis of the requirements of AMS I. C, paragraphs 6 to 13 and paragraphs 10 and 11 of AMS III.Q. All relevant sources have been identified and considered. In line with these stipulations only CO ₂ emissions are accounted for.	/PDD/ /AM/ /AM-IC/	OK	
In case the methodology allows to choose whether a source and/or gas is to be included, is the choice sufficiently	Not applicable, since the methodology does not allow such choices.	/PDD/ /AM/ /AM-IC/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.3. Baseline Identification <i>The choice of the baseline scenario will be validated with focus on whether the baseline is a likely scenario, and whether the methodology to define the baseline scenario has been followed in a complete and transparent manner.</i>				
B.3.1. What is the baseline scenario?	In the baseline scenario the tail gas was completely combusted in an open flame flare. Electricity has been imported from the KDL grid. Natural gas was used to generate steam in the existing steam boiler.	/PDD/ /IM01/	OK	
B.3.2. What other alternative scenarios have been considered?	<p>Two other alternatives to the proposed project activity have been analysed by the PPs:</p> <ul style="list-style-type: none"> the continuation of the current situation, i.e. flaring of the tail gas and purchasing electricity from KDL. Captive generation of electricity using fossil fuels. <p>Both options as well as the chosen project activity have been discussed in the PDD. All project scenarios are considered as plausible. Nevertheless AMS I-C para 7 (which is applicable under AMS-III.Q identifies 5 baseline scenarios including the baseline alternative of renewable energy sources for steam generation. Furthermore the steam generation in the baseline situation is not addressed. Therefore a corresponding CAR B13 was raised.</p>	/PDD/ /AM/ /AM-I.C/	CAR B13	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
<p>B.3.3. Has the baseline scenario been determined according to the methodology?</p>	<p>As per para 9 of AMS III.Q the computing of the baseline emissions the procedure of AMS-I.C (para 6-13) shall be used.</p> <p>As per para 9 of AMS-I.C the the baseline emissions for the import of electricity from the grid shall be calculated as the amount of electricity produced multiplied by the CO₂ emission factor. The emission factor for grid electricity shall be calculated as per the procedures detailed in AMS I.D. So far it could not sufficiently be validated, that the calculated emission factor is in line with para 9 of this methodology. The validation team is convinced, that the grid emission factor is not correctly determined.</p> <p>A corresponding corrective action request CAR B1 and a clarification request (CR B2) was raised.</p> <p>The baseline emissions due to the combustion of natural gas are calculated in line with the applicable methodological requirements.</p>	<p>/PDD/ /AM/ /AM-IC/ /AM-ID/</p>	<p>CAR B1 CR B2</p>	<p>OK</p>
<p>B.3.4. In case alternatives have to be considered, are all scenarios supplemental to those provided in the methodology reasonable in the context of the project activity?</p>	<p>No supplemental scenarios have been presented.</p>	<p>/PDD/</p>	<p>OK</p>	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.3.5. In case alternatives have to be considered, is no plausible alternative scenario excluded in the baseline identification in the PDD?	Please see comment above.	/PDD/	See CAR above	OK
B.3.6. Has the baseline scenario been determined using conservative assumptions where possible?	The baseline scenario is the continuation of the previous practice of tail gas flaring and the operation of the steam boiler. The determination of the baseline scenario was assessed to be conservative as far as the validation team as arrived at a final opinion. Thus esp. the CR regarding the grid emission factor has to be closed out in order to arrive at a final assessment.	/PDD/ /IM01/	See CR above	OK
B.3.7. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	The PDD addresses the legal situation and current local policies regarding comparable project activities. The validation team confirms that the project activity is undertaken voluntarily and not as part of national policy implementations.	/PDD/ /IM01/	OK	
B.3.8. Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced?	So far the grid emission factor calculation could not be validated on the basis of official data. Thus a corresponding CR was raised (see above). As far as literature or other sources is used for justification these sources are clearly	/PDD/	See CR above	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
	referenced.			
B.4. Calculation of GHG Emission Reductions – Project emissions <i>It is assessed whether the project emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.</i>				
B.4.1. Are the equations applied correctly according to the applied approved methodology?	All equations are applied correctly. All formulae used have been compared with the methodological requirements, as stipulated in AMS-III.Q, AMS-I.C and AMS-I.D.	/PDD/ /XLS/ /AM/ /AM-IC/ /AM-ID/	See CR above	OK
B.4.2. In case the methodology allows for different methodological choices, are the equations applied properly justified and have they been used reflecting the other methodological choices (i.e. baseline identification)?	The methodology does not allow for different methodological choices. Not applicable.	/PDD/ /XLS/ /AM/ /AM-IC/ /AM-ID/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.4.3. Have conservative assumptions been used when calculating the project emissions?	During site visit it was evidenced that the steam boiler has not been dismantled. Therefore the project emission calculation can not be assessed as conservative. A corresponding CAR (CAR B4) was raised.	/PDD/ /XLS/	CAR B4	OK
B.4.4. Are all data and parameters which remain fixed throughout the crediting period correct, applicable to the project and will lead to a conservative estimation of emission reductions?	The “Emission factor for KDL” was assessed to be not appropriate for ER calculation. A corresponding CAR (CAR B1) was raised above. Therefore the corresponding parameters in section B6.2 have to be revised. Furthermore the parameters “Natural gas used in cogeneration...” and “Tail gas used in cogeneration plant are included in both sections (B.6.2 and B.7.1.) Correspondingly CAR B7 was raised. The “Emission factor for natural gas fuel” is appropriately listed in section B.6.2.	/PDD/ /XLS/	CAR B7 See CAR above	OK
B.4.5. Is the choice of the value for the data and parameters which have to be monitored reasonable?	The choice of values for the data and parameters to be monitored is reasonable but insufficient. Thus, with respect to the choice of values and parameters for the data which have to be monitored the following CARs / CRs have been raised. CAR B5 – regarding the monitoring of the factor f_cap CAR B6 – regarding more detailed information regarding the monitoring equipment.	/PDD/ /XLS/	CAR B5, CAR B8, CAR B10, CAR B11,	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
	CAR B8 – regarding the completeness of parameter description CAR B11 - regarding additional parameters which are necessary to be monitored CAR B10 – regarding the superheated pressure energy content monitoring CAR B12 – regarding the description of the monitoring plan CR B1 – regarding the applicable NCV values		CAR B12, CR B1	
B.5. Calculation of GHG Emission Reductions – Baseline emissions <i>It is assessed whether the baseline emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.</i>				
B.5.1. Are the equations applied correctly according to the applied approved methodology?	All equations are applied correctly. Nevertheless regarding the appropriateness of the calculation approach pl. refer to chapter B.3.	/PDD/ /XLS/	OK	
B.5.2. In case the methodology allows for	Same as in section B.3	/PDD/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
different methodological choices, are the equations applied properly justified and have they been used reflecting the other methodological choices (i.e. baseline identification)?		/AM/ /XLS/		
B.5.3. Have conservative assumptions been used when calculating the baseline emissions?	See B.3.6	/PDD/ /XLS/	See CARs above	OK
B.5.4. Are all data and parameters which remain fixed throughout the crediting period correct, applicable to the project and will lead to a conservative estimation of emission reductions?	Please refer to section B.4	/PDD/ /XLS/	See CARs above	OK
B.5.5. Is the choice of the value for the data	Please refer to section B.4.5	/PDD/	See	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
and parameters which have to be monitored reasonable?		/XLS/	CARs above	
B.6. Calculation of GHG Emission Reductions – Leakage <i>It is assessed whether leakage emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.</i>				
B.6.1. Are the equations applied correctly according to the applied approved methodology?	As per para 7 of AMS-I.C – which is applicable under AMS-III.Q - no leakage calculation is required.	/AM/ /AM-IC/		OK
B.6.2. In case the methodology allows for different methodological choices, are the equations applied properly justified and have they been used reflecting the other methodological choices (i.e. baseline identification)?	N/A	-		-

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.6.3. Have conservative assumptions been used when calculating the leakage emissions?	N/A	/PDD/ /XLS/	CAR B6, CAR B7, CR B8	OK
B.6.4. Are all data and parameters which remain fixed throughout the crediting period correct, applicable to the project and will lead to a conservative estimation of emission reductions?	N/A	-		-
B.6.5. Is the choice of the value for the data and parameters which have to be monitored reasonable?	N/A	-		-

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.7. Emission Reductions <i>The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change.</i>				
B.7.1. Are the emission reductions real, measurable and give long-term benefits related to the mitigation of climate change.	The emission reductions are real, measurable and give long-term benefits related to the mitigation of climate change. In the course of validation of the baseline determination, monitoring approach, ER calculation including respective input values have been reviewed. Though, uncertainties w.r.t. data used for calculation, monitoring of ERs and approach chosen for the determination of the baseline emissions the overall mitigation of climate change due to real emission reduction can be determined doubtless.	/PDD/		OK
B.8. Additionality Determination <i>The assessment of additionality will be validated with focus on whether the project itself is not a likely baseline scenario.</i>				
B.8.1. Did the additionality justification follow the requirements of the applied methodology and/or methodological tools?	AMS III.Q. does not provide for the additionality justification. Hence, Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities has been applied in order to justify the project's additionality.	/PDD/ /IM01/		OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
Consideration of CDM before project start				
B.8.2. Is the project starting date reported in accordance with the CDM glossary of terms?	During the site visit it was evidenced that the management decision to go for the project was taken in May 2005. Thus the date given in the PDD needs to be revised. A corresponding CAR (CAR C2) was raised.	/PDD/ /IM01/	CAR C2	
B.8.3. In case the project start date is before commencing of validation, was the incentive from the CDM seriously considered and are details given in the PDD?	The project start date is before commencing of validation. Therefore the PP was requested to provide a project specific additional written evidence to confirm the serious consideration of the CDM before starting the project. In this context a corresponding CR (CR A1) has been raised.	/PDD/ /IM01/ /IM02/	See CAR above	
B.8.4. How and when was the decision to proceed with the project taken?	PTCI is operating a so called Capital Management System (CMS). As per this system the management decision is one milestone for every investment project. The decision was taken in May 2005 by Mr. K. Burness.	/PDD/	See CAR above	
B.8.5. Is the project start date consistent with the available evidences?	The validation team has checked the CMS. The management decision is embedded in other project milestones, so that the validation team is convinced that this date is realistic.	/PDD/ /IM01/		OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.8.6. Was the decision to proceed with the project taken by a person entity which has the authority to do so?	The decision was taken by the upper management of CABOT, i.e. Mr. Burness.	/PDD/ /IM01/	OK	
B.8.7. How was the CDM involved in the decision making process?	During the site visit no evidence regarding the CDM consideration could be provided to the validation team. Therefore a corresponding CR (CR A1) was raised.	/PDD/	CR A1	OK
B.8.8. Can the CDM involvement in the decision assessed as serious?	See above	/PDD/	See CR above	OK
Identification of alternatives Step 1 (in case of SSC projects pl. skip steps 1 and 2)				
B.8.9. Have all realistic alternatives been identified to the project?	N/A			-
B.8.10. Contains the list of alternatives at least the status-quo situation and the project not undertaken as a CDM project?	N/A			-

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.8.11. Do all identified alternatives comply with applicable regulation?	N/A			-
Investment analysis Step 2 <i>In case the investment analysis as per step 2 is chosen to justify the additionality Annex 2 "Assessment of Financial Parameters" has to be used to provide additional details of the calculation parameters..</i>				
B.8.12. Is an appropriate analysis method chosen for the project (simple cost analysis, investment comparison analysis or benchmark analysis)?	N/A			-
B.8.13. Is a clear, viewable and unprotected Excel spreadsheet available for the investment calculation?	N/A			-
B.8.14. Does the period chosen for the investment analysis reflect the	N/A			-

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
technical lifetime of the project activity or in case a shorter period is chosen, is the fair value of the project activity's assets at the end of the investment analysis period (as a cash inflow) included?				
B.8.15. Is the fair value calculated in accordance with local accounting regulations (where available) or international best practice?	N/A			-
B.8.16. Is the book value as well as the expectation of the potential profit or loss included in the fair value calculation?	N/A			-
B.8.17. Are depreciation and other non-cash related items added back to net profits for the purpose to calculate	N/A			-

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
the financial indicator?				
B.8.18. Is taxation excluded in the investment analysis or is the benchmark intended for post tax comparisons?	N/A			-
B.8.19. Were the input values used in the investment analysis valid and applicable at the time of the investment decision?	N/A			-
<i>Investment comparison and benchmark analysis</i>				
B.8.20. In case of project IRR: Are the costs of financing expenditures (loan repayments and interests) excluded from the calculation of project IRR?	N/A			-
B.8.21. In case of equity IRR: Is the part of the investment costs, which is financed by equity considered as net cash outflow and is the part financed by debt excluded in net cash outflow?	N/A			-
<i>Benchmark analysis</i>				
B.8.22. Is the type of benchmark chosen	N/A			-

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
appropriate for the type of IRR calculated (e.g. local commercial lending rates or weighted average costs of capital for project IRR; required/expected returns on equity for equity IRR)?				
B.8.23. Is the benchmark value suitable for the project activity?	N/A			-
<i>Benchmark analysis / internal company benchmark</i>				
B.8.24. Is it ensured that the project cannot be developed by other developers than the PP?	N/A			-
B.8.25. Was the benchmark consistently used in the past for similar projects with similar risks?	N/A			-
Barrier analysis Step 3 or SSC additionality assessment				
B.8.26. Are there any barriers given which have a clear and definable impact on the profitability of the project?	No barriers have been identified which have a clear and definable impact on the profitability of the existing project	/PDD/		OK
B.8.27. How is it justified and evidenced that the barriers given in the PDD are real?	The PPs have justified the additionality based on a) Investment barriers b) Technological barriers and	/PDD/ /IM01/	CAR B3	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
	<p>c) Other barriers.</p> <p>Assessment:</p> <p><i>Investment barriers:</i> The justification of investment barriers follows a very general approach and does not reflect in detail to the specific conditions of the project site itself. As it became evident that the project activity was considered earlier on and thus has faced some kind of barriers additional justification is necessary.</p> <p>Technological barriers: Various technological barriers have also been identified. Though altogether these barriers might altogether create a certain barrier for investment the validation team is not convinced that technological barriers really have prevented the project from earlier realization.</p> <p>Other barriers: The same logic also applies for the other stated barriers in the PDD. The validation team is not convinced that the listed barriers would have prevented the project.</p> <p>Altogether CAR B3 was raised stating that the complete barrier analysis in section B.5 has to be further substantiated.</p>			
B.8.28. How is it justified that one or a set of real barriers prevent(s) the implementation of the project activity?	The validation team has arrived at the conclusion that additional evidences are necessary for the justification of additionality.	/PDD/ /IM01/	See CAR above	
Common practice analysis Step 4				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
(in case of SSC projects skip this step)				
B.8.29. Is the defined region for the common practice analysis appropriate for the technology/industry type?	N/A			-
B.8.30. To what extent similar projects have been undertaken in the relevant region?	N/A			-
B.8.31. In case similar projects are identified, are there any key differences between the proposed project and existing or ongoing projects and what kind of differences are observed?	N/A			-
B.9. Monitoring Methodology <i>It is assessed whether the project applies an appropriate baseline methodology.</i>				
B.9.1. Are all monitoring parameters required by the applied methodology contained in the monitoring plan?	No, see section B.4.5	/PDD/ /AM/ /AM-IC/ /AM-ID/	See CARs and CRs above	OK
B.9.2. In case different approaches can be chosen acc. to the methodology, is the selection of parameters justified	Not applicable, see above	/PDD/ /AM/		-

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
and correct?				
B.9.3. Are the means of monitoring of all parameters contained in the monitoring plan in accordance with the requirements of the applied methodology?	No, see section B.4.5	/PDD/ /AM/		-
B.9.4. Are all parameters appropriately labelled?	Yes, no unclear labelling of parameters has been observed.	/PDD/ /AM/		OK
B.9.5. Is it likely that the monitoring arrangements described in the PDD can properly be implemented in the context of the project activity?	The monitoring arrangements are insufficient w.r.t. the necessary extent of detail. Please consider the CARs and CRs above. Furthermore the description of the monitoring plan (section 7.2) should further be elaborated. Above this also section B.8 shall be filled in.	/PDD/ /AMS- IIG/ /IM01/	CAR B9 CAR B12	OK
B.9.6. Are the means of implementation of the monitoring plan, including QA/QC procedures sufficient to ensure that emission reductions can be reported without material misstatement?	No see CAR B12 above	/PDD/ /IM01/	See CAR above	OK
B.9.7. Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later?	All monitored data required for verification and issuance will be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever is later.	/PDD/ /IM01/		OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.10. Monitoring of Project Emissions <i>It is established whether the monitoring plan provides for reliable and complete project emission data over time.</i>				
B.10.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	No, see CARs and CRs raised above	/PDD/ /AM/ /AM-IC/ /IM01/	See CARs and CRs above	OK
B.10.2. Are the choices of project GHG indicators reasonable and conservative?	No, see CARs and CRs raised above	/PDD/ /AM/ /AM-IC/ /IM01/	See CARs and CRs above	OK
B.10.3. Is the measurement method clearly stated for each GHG value to be monitored and deemed appropriate?	All applicable measurement methods are described sufficiently as far as not stated differently above	/PDD/ /AM/ /AM-IC/ /IM01/	See CARs / CRs above	OK
B.10.4. Is the measurement equipment described and deemed appropriate?	All applicable measurement equipment are described sufficiently as far as not stated differently above	/PDD/ /AM/ /AM-IC/ /IM01/	See CARs / CRs above	OK
B.10.5. Is the measurement accuracy	No detailed information regarding the measurement accuracy	/PDD/	See	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
addressed and deemed appropriate? Are procedures in place on how to deal with erroneous measurements?	is given in the PDD. Please refer to CAR B6	/IM01/	CAR above	
B.10.6. Is the measurement interval identified and deemed appropriate?	See B.10.5	/PDD/ /IM01/	See CAR above	OK
B.10.7. Is the registration, monitoring, measurement and reporting procedure defined?	See B.10.5	/PDD/ /IM01/	See CAR above	OK
B.10.8. Are procedures identified for maintenance of monitoring equipment and installations? Are the calibration intervals being observed?	See B.10.5	/PDD/ /IM01/	See CAR above	OK
B.10.9. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?	See B.10.5	/PDD/ /IM01/	See CAR above	OK
B.11. Monitoring of Baseline Emissions <i>It is established whether the monitoring plan provides for reliable and complete baseline emission data over time.</i>				
B.11.1. Does the monitoring plan provide for the collection and archiving of all	No, see CARs and CRs raised above	/PDD/ /AM/	See CARs	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
relevant data necessary for determining baseline emissions during the crediting period?		/AM-IC/ /IM01/	and CRs above	
B.11.2. Are the choices of baseline GHG indicators reasonable and conservative?	No, see CARs and CRs raised above	/PDD/ /AM/ /AM-IC/ /IM01/	See CARs and CRs above	OK
B.11.3. Is the measurement method clearly stated for each baseline indicator to be monitored and also deemed appropriate?	See B.10.5	/PDD/ /IM01/	See CAR above	OK
B.11.4. Is the measurement equipment described and deemed appropriate?	See B.10.5	/PDD/ /IM01/	See CAR above	OK
B.11.5. Is the measurement accuracy addressed and deemed appropriate? Are procedures in place on how to deal with erroneous measurements?	See B.10.5	/PDD/ /IM01/	See CAR above	OK
B.11.6. Is the measurement interval for baseline data identified and deemed appropriate?	See B.10.5	/PDD/ /IM01/	See CAR above	OK
B.11.7. Is the registration, monitoring, measurement and reporting procedure defined?	See B.10.5	/PDD/ /IM01/	See CAR above	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.11.8. Are procedures identified for maintenance of monitoring equipment and installations? Are the calibration intervals being observed?	See B.10.5	/PDD/ /IM01/	See CAR above	OK
B.11.9. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	See B.10.5	/PDD/ /IM01/	See CAR above	OK
B.12. Monitoring of Leakage <i>It is assessed whether the monitoring plan provides for reliable and complete leakage data over time.</i>				
B.12.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	As per para 7 of AMS-I.C – which is applicable under AMS-III.Q - no leakage calculation is required.	-		-
B.12.2. Are the choices of project leakage indicators reasonable and conservative?	N/A	-		-
B.12.3. Is the measurement method clearly stated for each leakage value to be monitored and deemed appropriate?	N/A	-		-

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.13. Monitoring of Sustainable Development Indicators/ Environmental Impacts <i>It is assessed whether choices of indicators are reasonable and complete to monitor sustainable performance over time.</i>				
B.13.1. Is the monitoring of sustainable development indicators/ environmental impacts warranted by legislation in the host country?	<p>It was evidenced during the validation that no monitoring of sustainability indicators is not required for this and comparable project activities.</p> <p>Environmental monitoring parameters are stipulated by Indonesian legislation as part of regular surveillance checks. Therefore no environmental parameters need to be monitored within the framework of this project activity.</p>	/PDD/ /IM01/		OK
B.13.2. Does the monitoring plan provide for the collection and archiving of relevant data concerning environmental, social and economic impacts?	N/A	-		-
B.13.3. Are the sustainable development indicators in line with stated national priorities in the Host Country?	N/A	-		-

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
B.14. Project Management Planning <i>It is checked that project implementation is properly prepared for and that critical arrangements are addressed.</i>				
B.14.1. Is the authority and responsibility of overall project management clearly described?	The description of lines of authority and responsibility shall be improved. Pl. see CAR B.7. Nevertheless the project activity is embedded in an existing carbon black production site with various comparable monitoring tasks. The validation team is convinced that the responsible persons of the PP will allocate the tasks and responsibilities within this project activity to experienced and skilled personnel.	/PDD/ /IM01/		OK
B.14.2. Are procedures identified for training of monitoring personnel?	The project has already started operation. Corresponding trainings have been carried out. The plant is operated by skilled and well trained personnel. Nevertheless after the registration of the project training regarding CDM specific issues is considered to be useful.	/PDD/ /IM01/		OK
B.14.3. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	No specific CDM related procedures have been identified. Pl. refer to CAR B6.	/PDD/ /IM01/	See CAR above	OK
B.14.4. Are procedures identified for review of reported results/data?	No specific CDM related procedures have been identified. Pl. refer to CAR B6.	/PDD/ /IM01/	See CAR above	OK
B.14.5. Are procedures identified for corrective actions in order to provide	No specific CDM related procedures have been identified. Pl. refer to CAR B6.	/PDD/	See CAR	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
for more accurate future monitoring and reporting?		/IM01/	above	
C. Duration of the Project/ Crediting Period <i>It is assessed whether the temporary boundaries of the project are clearly defined.</i>				
C.1. Are the project's starting date and operational lifetime clearly defined and evidenced?	The project's starting date was verified against the project documentation during the site visit.	/PDD/		OK
C.2. Is the start of the crediting period clearly defined and reasonable?	The expected start of crediting period (2008-09-01) is expired and corrective action was requested in form of CAR C1.	/PDD/	CAR C1	OK
D. Environmental Impacts <i>Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an EIA should be provided to the validator.</i>				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
D.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	The document review and the investigation on site has doubtlessly revealed that negative impacts on the environment due to the project activity are very unlikely are going to occur.	/PDD/ /IM01/		OK
D.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	The host government does not request for an EIA. Sufficient evidence has been achieved during the site visit.	/PDD/ /IM01/		OK
D.3. Will the project create any adverse environmental effects?	No adverse environmental effects are expected due to the project activity.	/PDD/ /IM01/		OK
D.4. Are transboundary environmental impacts considered in the analysis?	No transboundary effects are expected due to the project activity. Please see comment above.	/PDD/ /IM01/		OK
D.5. Have identified environmental impacts been addressed in the project design?	Please refer to D.3.	/PDD/ /IM01/		OK
D.6. Does the project comply with environmental legislation in the host country?	Yes, the project fully complies with environmental legislation in the host country. The project has achieved environmental clearance in January 2008. The corresponding documents were reviewed during the on-site visit.	/PDD/ /IM01/ /MD/		OK
For Small-scale projects				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
D.7. Does host country legislation require an analysis of the environmental impacts of the project activity?	Please refer to D.2	/PDD/ /IM01/		OK
D.8. Does the project comply with environmental legislation in the host country?	Please refer to D.6.	/PDD/ /IM01/		OK
D.9. Will the project create any adverse environmental effects?	Please refer to D.3.	/PDD/ /IM01/		OK
D.10. Have environmental impacts been identified and addressed in the PDD?	Please refer to D.3.	/PDD/ /IM01/		OK
E. Stakeholder Comments <i>The validator should ensure that stakeholder comments have been invited with appropriate media and that due account has been taken of any comments received.</i>				
E.1. Have relevant stakeholders been invited to consultation?	A stakeholder meeting was carried out on 2008-01-17. The list of invited persons was reviewed during the site visit. In consideration of the kind of project and the location of the plant the list of invited persons was assessed to be appropriate. Nevertheless the stakeholder meeting records could not be made available during the site visit. Therefore a Clarification Request (CR A1) was raised	/PDD/ /IM01/ /SSR/	CR A1	OK
E.2. Have appropriate media been used	Local media was used for the invitation.	/ /IM01/		OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (Means and results of assessment)	Ref.	Draft Concl.	Final Concl.
to invite comments by local stakeholders?		/SSR/		
E.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	The host government does not require a stakeholder consultation.	/PDD/ /IM01/		OK
E.4. Is an appropriate summary of the stakeholder comments received provided in the PDD?	Yes, please refer to section E.2 in the PDD.	/PDD/		OK
E.5. Has due account been taken of any stakeholder comments received?	By means of additional interviews during the site visit with local stakeholders who took part in the stakeholder meeting the validation team is convinced that due account has been taken of the comments made during the stakeholder meeting.	/IM01/		OK

ANNEX 2: ASSESSMENT OF FINANCIAL PARAMETERS

Table A-2: Assessment of Financial Parameters

<input type="checkbox"/>	No financial parameters are used for additionality justification						
<input checked="" type="checkbox"/>	Assessment of all financial parameters see below						
Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
Capital Expenditure	6,857,035	USD	Cabot Capital management system	/CMS/	<input checked="" type="checkbox"/>	<input type="checkbox"/>	This Capital Expenditure is the estimate cost provided by equipment suppliers. Management approval is made available on Cabot Capital Management system (CMS) and checked by DOE during validation site visit.
Electricity Supply	37,800,000	kWh/a	Calculation in line with the ER calculation	/PDD/	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The value is in line with the ER calculation and deemed appropriate for this kind of installation
Project Lifetime	10-15	year	Assumption based on experience	-	<input checked="" type="checkbox"/>	<input type="checkbox"/>	It can be considered a reasonable assumption that the operational lifetime will be in this timeframe
Inflation Rate	6.0	%	Statistical data of Indonesia	Statistic Indonesia (BPS file)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The value is assuming as average of inflation rate and for details could be accessed at http://www.bps.go.id/sector/cpi/table3.shtml
Tax Rate	30	%	Tax Regulations	President Decree No. 17 year 2000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The value is derived from Indonesia document No.(2000) 17 and issued as President Decree, hence, it can be considered to be reasonable.

Depreciation Rate	10	%	Tax Regualtions	Tax rule	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The value is a general depreciation rate, which means that the depreciation time is 10 years.
Operational Expenses	1,013,882	US\$/a	CL Cogen Financial Exercise Air Cooled Calculation	Plant operation records, design data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Operation and Maintenance consists of various parts. The calculation is based on figures of the Cabot Carbon black plant operation and a breakdown to the project activity as well as estimated costs in line with the project design. Available figures have been checked on site.

ANNEX 3: OUTCOME OF THE GSCP

Table A-3: Outcome of the Global Stakeholder Consultation Process

<input checked="" type="checkbox"/>	No comments were received during the global stakeholder consultation period					
<input type="checkbox"/>	Comments were received during the global stakeholder consultation period. The comments (in unedited form) and the consideration/response of the validation team are presented below:					
Comment No.:	Comment by:	Inserted on:	Subject	Comment ^{*)}	Response validation team ^{*)}	Conclusion (incl. CARs CLs or FARs)

^{*)} In case clarifications have been requested by the validation team corresponding rows shall be added

ANNEX 4: APPOINTMENT CERTIFICATES OF TEAM MEMBERS



CERTIFICATE OF APPOINTMENT

Mr. Dipl.-Ing. Rainer Winter

born on 1963-02-21

satisfies the requirements as specified in the TÜV NORD
JI/CDM CP directives and is hereby appointed as

TÜV NORD JI/CDM Senior Assessor

The present appointment will terminate on 2010-07-05
Certification registration No. 04 02 154-03

Essen, 2007-07-06

Deputy of TÜV NORD JI/CDM Certification Program
of TÜV NORD CERT GmbH



CERTIFICATE OF APPOINTMENT

Ms. Alexandra Nebel

born on 1980-07-25

satisfies the requirements as specified in the TÜV NORD
JI/CDM CP directives and is hereby appointed as

TÜV NORD JI/CDM Expert

For the following scopes: 1, 14, 15

The present appointment will terminate on 2012-02-03
Certification registration No. 09 02 01 - 95

Essen, 2009-02-04


Head of TÜV NORD JI/CDM Certification Program
of TÜV NORD CERT GmbH