

# VALIDATION REPORT

## RENEWAL OF THE CREDITING PERIOD

A.T. BIOPOWER CO., LTD.

A.T. BIOPOWER RICE HUSK POWER  
PROJECT IN PICHIT, THAILAND

UNFCCC REF. No. : 1026

CP #2 from 2012-12-21 to 2019-12-20  
(incl. both days)

**Report No: MY-RCP 11/068 – 11/560**

**Date: 2014-04-30**

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R-No.: MY-RCP 11/068 – 11/560

<b>Validation Report:</b>	<b>Report No.</b>	<b>Rev. No.</b>	<b>Date of 1<sup>st</sup> issue:</b>	<b>Date of this rev.</b>		
	MY-RCP 11/068 – 11/560	0	2014-04-30	2014-04-30		
<b>Project:</b>	<b>Title:</b>		<b>Registr. Date:</b>	<b>UNFCCC-No.:</b>		
	A.T. Biopower Rice Husk Power Project in Pichit, Thailand		2007-06-18	1026		
	<b>Project Scale:</b>					
	<input checked="" type="checkbox"/> Large Scale <input type="checkbox"/> Small Scale					
<b>Crediting Periods:</b>	<b>Crediting period renewal:</b>					
	<input checked="" type="checkbox"/> 1 <sup>st</sup> renewal <input type="checkbox"/> 2 <sup>nd</sup> renewal					
	<b>Crediting periods (actual / planned):</b>		<b>From:</b>	<b>To:</b>		
	First Crediting Period		2005-12-21	2012-12-20		
	Second Crediting Period		2012-12-21	2019-12-20		
	Third Crediting Period		N/A	N/A		
<b>Project Participant(s):</b>	<b>Client:</b>					
	A.T. Biopower Co., Ltd.					
	<b>Non Annex 1 country:</b>		<b>Annex 1 country:</b>			
	Thailand		Japan			
	<b>PP from Non Annex 1 country:</b>		<b>PP from Annex 1 country:</b>			
	A.T. Biopower Co., Ltd.		Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.			
<b>Applied methodology/ies:</b>	<b>Title (at registration):</b>		<b>Version No.:</b>	<b>Scope(s) / TA(s)</b>		
	Consolidated methodology for grid-connected electricity generation from biomass residues		ACM0006 ver.04.0	1 / 1.1		
	<b>Title (at renewal of CP)</b>		<b>Version No.:</b>	<b>Scope(s) / TA(s)</b>		
	Consolidate methodology for electricity generation from biomass residues in power-only plants		ACM0018 ver.03.0	1 / 1.1		
<b>Validation team / Technical Review and Final Approval:</b>	<b>Validation Team:</b>		<b>Technical review:</b>	<b>Final approval:</b>		
	Cheong, Chun Yuen (Robert) – TL Cheong, Chee Yin (Nicholas) – TM Vasasmith, Nattapon – TM Semail, Alex - ETE		Winter, Rainer Nebel, Alexandra	Nebel, Alexandra		
<b>PDD Versions (for the new CP)</b>	<b>Reg. PDD</b>		<b>Draft RCP PDD</b>		<b>Final RCP PDD</b>	
	<b>Date</b>	<b>Version</b>	<b>Date</b>	<b>Version</b>	<b>Date</b>	<b>Version</b>
	2012-11-28	05.1	2012-06-10	1.0	2014-03-26	3.0
<b>Expected Emission reductions: [t CO<sub>2</sub>e]</b>	<b>Expected emission reductions over the last crediting period [t CO<sub>2</sub>e]:</b>			<b>Expected emission reductions over the new crediting period [t CO<sub>2</sub>e]:</b>		
	495,405			381,544		
<b>Summary of Validation opinion</b>	<input checked="" type="checkbox"/> Positive validation opinion <input type="checkbox"/> Negative validation opinion					
	As a result of the validation the validation team confirms that: <input checked="" type="checkbox"/> The baseline for the new crediting period is in compliance with the national and/or sectoral policies and circumstances applicable at the time of requesting the renewal of the crediting period and with the latest approved baseline methodology applicable. <input checked="" type="checkbox"/> The monitoring plan is in line with the latest monitoring methodology applicable to the project activity. <input checked="" type="checkbox"/> The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 381,544tCO <sub>2</sub> e are most likely to be achieved in the 2 <sup>nd</sup> CP.					
<b>Document information:</b>	<b>Filename:</b>			<b>Confidential content:</b>	<b>No. of pages:</b>	
	2014-04-30 11-560 AT Biopower RCP FVR .docx			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	79	

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## Abbreviations

<b>BAU</b>	Business as usual
<b>CA</b>	Corrective Action / Clarification Action
<b>CAR</b>	Corrective Action Request
<b>CDM</b>	Clean Development Mechanism
<b>CER</b>	Certified Emission Reduction
<b>CL</b>	Clarification Request
<b>CO<sub>2</sub></b>	Carbon dioxide
<b>CO<sub>2</sub>e</b>	Carbon dioxide equivalent
<b>CP</b>	Certification Program // Crediting Period
<b>DNA</b>	Designated National Authority
<b>EB</b>	CDM Executive Board
<b>ER</b>	Emission Reductions
<b>ETS</b>	Emission Trading Scheme
<b>FAR</b>	Forward Action Request
<b>GHG</b>	Greenhouse gas(es)
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>PCP</b>	Project Cycle Procedure
<b>PDD</b>	Project Design Document
<b>PS</b>	Project Standard
<b>QC/QA</b>	Quality control/Quality assurance
<b>RCP</b>	Renewal of Crediting Period
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>VVS</b>	CDM Validation and Verification Standard

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## 1 OBJECTIVE / SCOPE

A.T. Biopower Co., Ltd. has commissioned the TÜV NORD JI/CDM Certification Program (CP) to carry out validation of the request for renewal of the crediting period (RCP) for the project

“A.T. Biopower Rice Husk Power Project in Pichit, Thailand”

with regard to the relevant UNFCCC requirements. The project has been registered on 2007-06-18 under the UNFCCC registration No. 1026. The PPs have chosen a 7 year crediting period which is now due for renewal. The PPs have thus notified the UNFCCC about their intention to request the renewal of the crediting period.

The objective of this RCP validation is the review by an independent entity whether the project is still compliant with the applicable sections of:

- the CDM project standard,
- the CDM cycle procedure
- the updated applied UNFCCC Methodology ACM0018 ver.03.0 and
- the methodological tool “Assessment of the validity of the original / current baseline and update of the baseline at the renewal of the crediting period”.

As per the requirements of the CDM Validation and Verification Standard<sup>VVS/</sup> (section 11) the validation is based on

- the registered and/or latest updated version of the PDD (including revisions of the monitoring plan)<sup>PDD1/PDD2/PDD3/</sup>,
- the updated emission reduction calculation spread sheet <sup>ER/</sup>,
- further supporting documents made available to the validator as well as
- information collected through performing interviews and during the on-site assessment.

Furthermore publicly available information, such as the host country legislation, was considered as far as available and required.

## 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		A.T. Biopower Rice Husk Power Project in Pichit, Thailand
Project size		<input checked="" type="checkbox"/> Large Scale <input type="checkbox"/> Small Scale
Project Scope (according to UNFCCC sectoral scope numbers for CDM)	<input checked="" type="checkbox"/>	1 Energy Industries (renewable- /non-renewable sources)
	<input type="checkbox"/>	2 Energy distribution
	<input type="checkbox"/>	3 Energy demand
	<input 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
	<input type="checkbox"/>	16 Carbon Capture and Storage
Applied Metho- dology	At registration	ACM0006 ver.04.0: Consolidated methodology for grid-connected electricity generation from biomass residues
	At RCP	ACM0018 ver.03.0: Consolidate methodology for electricity generation from biomass residues in power-only plants
Technical Area(s)		1.1
Renewal of crediting period		<input checked="" type="checkbox"/> first renewal <input type="checkbox"/> second renewal
CDM registration No.		1026
Date of registration		2007-06-18

### 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
Non-Annex 1 Country	Thailand	A.T. Biopower Co., Ltd.
Annex 1 Country	Japan	Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.

## 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	Thailand
Region:	Pichit province
Project location address:	96 Moo 2 Hor-Krai sub-district, Bang-Moon-Nak district
Latitude:	16° 04' 16.58" N
Longitude:	100° 23' 48.36" E

## 2.4 Technical Project Description

The project activity involves the installation of a 22.5 MW biomass power-only plant exporting approx. 134,000 MWh/y of electricity to the Thai national grid to replace the mixed fossil fuel based electricity in the grid system.

The technical key data are provided in table 2-4 below.

**Table 2-4:** Technical data of the project activity

Parameter	Unit	Value
<b>Boiler</b>		
Manufacturer		Electrowatt-Ekono (Thailand) Ltd.
Capacity	t/h	91
Designed Pressure	Barg	76
No. of Units		1
<b>Turbine</b>		
Manufacturer		Electrowatt-Ekono (Thailand) Ltd.
No. of Units		1
Rated Capacity	MW	22.5
<b>Generator</b>		
Manufacturer		Electrowatt-Ekono (Thailand) Ltd.
No. of Units		1
Rated Capacity	MW	22.5
Rated power factor		0.8
Rated Voltage	kV	6.6

## 2.5 Project History

Essential events since the registration of the project are presented in the following Table 2-5.

**Table 2-5:** Status of previous Monitoring Periods

#	Item	Time	Status
1	Project Registration	2007-06-18	Registered
1	1 <sup>st</sup> Monitoring period	2005-12-21 to 2007-06-30	Issued



#	Item	Time	Status
2	2 <sup>nd</sup> Monitoring period	2007-07-01 to 2007-12-31	Awaiting Issuance Request
3	3 <sup>rd</sup> Monitoring period	2008-01-01 to 2010-12-31	Awaiting Issuance Request
4	4 <sup>th</sup> Monitoring period	2011-01-01 to 2011-12-31	Awaiting Issuance Request
5	5 <sup>th</sup> Monitoring period	2012-01-01 to 2012-12-20	Awaiting Issuance Request
6	1 <sup>st</sup> Renewal of CP	2012-12-21 to 2019-12-20	Requesting Renewal

An overview of all Post Registration Changes is given in the following table.

**Table 2-6:** Overview Post Registration Changes

#	Applicable from – to / as of	MP	Type of post registration change <sup>1)</sup>	Description	Status <sup>2)</sup> / Date
1			CrPDD	Correction to the capacity of the generator turbine rated power, Annex PPs, parameters description and PDD editorial errors.	Approved on 2013-08-09
2			PCfrMP	Corrections and revision to MP for several parameters	Approved on 2013-08-09

- <sup>1)</sup> TDfrMP : Temporary deviation from registered monitoring plan  
 TDfMM : Temporary deviation from the monitoring methodology  
 CrPDD : Corrections to the registered PDD  
 PCfrMP : Permanent changes from registered Monitoring Plan  
 PCfMM : Permanent changes from Monitoring Methodology  
 CoPD : Changes to the project design of a registered project activity
- <sup>2)</sup> Approval (by EB) or Acceptance (by DOE)

### **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
- Desk review of the PDD and supporting documents
- 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

#### **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 validation 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 validation team, consistent of one team leader and 2 additional team members, were appointed. Furthermore also the personnel for the technical review and the final approval were 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 <sup>1)</sup>	Qualification Status <sup>2)</sup>	Scheme competence <sup>3)</sup>	Technical competence <sup>4)</sup>	Verification competence <sup>5)</sup>	Host country Competence	On-site visit
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Cheong, Chun Yuen (Robert)	TN Malaysia	TL	SA	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Cheong, Chee Yin (Nicholas)	TN Malaysia	TM <sup>A)</sup>	LA	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Semail, Alex	TN Malaysia	TE	ETE	<input checked="" type="checkbox"/>	1.1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Nattapon, Vasasmith	TN Thailand	TM	A	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Winter, Rainer	TN CERT GmbH	TR <sup>B)</sup>	SA	<input checked="" type="checkbox"/>	1.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	-
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Alexandra Nebel	TN CERT GmbH	TR/ FA <sup>B)</sup>	SA	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	-

1) TL: Team Leader; TM: Team Member; TR: Technical review; OT: Observer-Team; OR: Observer-TR; FA: Final approval

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

3) GHG auditor status (at least Assessor)

4) As per S01-MU03 or S01-VA070-A2 (such as 1.1, 1.2, ...)

5) In case of verification projects

A) Team Member: GHG auditor (at least Assessor status), Technical Expert (incl. Host Country Expert or Verification Expert), not ETE

B) No team member

All team members contributed to the review of documents, the assessment of the project activity and to the preparation of this report under the leadership of the team leader.

All team members as indicated in the table above attended in the complete site-visit.

Technical Experts contributed to the assessment of special aspects of the project activity, e.g. technical or host country aspects.

Statements of competence for the above mentioned team members are enclosed in annex 3 of this report.

### 3.4 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 CDM requirements for RCP. The validation protocol serves the following purposes:

- It organizes, details and clarifies the applicable requirements;
- 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 is described in Figure 1.

<b>Validation Protocol Table A-1: Requirement checklist</b>				
<b>Checklist Item</b>	<b>Reference</b>	<b>Validation Team Comments</b>	<b>Draft Conclusion</b>	<b>Final Conclusion</b>
<i>The checklist items in table A-1 are linked to the various requirements the project should meet. The checklist is organized in various sections. Each section is then further subdivided as per the requirements of the topic and the individual project activity.</i>	<i>Gives reference to the information source on which the assessment is based.</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 VVS shall be covered in this section.</i>	<i>Assessment based on evidence provided if the criterion is fulfilled (OK), or a CAR, CL 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 table

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

### 3.5 Review of Documents

The revised PDD version and supporting background documents related to the RCP 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.

### 3.6 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 RCP.

The site included in the project activity have been visited.

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 A.T. Biopower Co. Ltd Project consultant Advance Energy Plus Co. Ltd (AEP)	<ul style="list-style-type: none"> <li>- Project history</li> <li>- Monitoring and measurement equipment and system.</li> <li>- Remaining lifetime of equipment</li> <li>- Crediting period</li> <li>- Baseline study assumptions</li> <li>- Roles &amp; responsibilities of the project participants</li> <li>- National legislation</li> <li>- ER calculation</li> <li>- Ex-ante parameters</li> <li>- Changes of parameters</li> <li>- Editorial issues of the revised PDD</li> </ul>

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

## 3.7 Resolution of Clarification and Corrective Action Requests

### 3.7.1 Definition

A **Corrective Action Request (CAR)** is established where:

- mistakes have been made in assumptions, application of the methodology or the project documentation which will have a direct influence on the project results,
- the requirements relevant for validation of the renewal of crediting period have not been met or
- omissions or incomplete information might lead to a risk that the renewal of crediting period could not be approved by the UNFCCC or
- Required information has not been provided.

A **Clarification Request (CL)** is 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 subsequent verification.

### 3.7.2 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

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report and hands this report over to the project participant(s) in order to request responses on the issues raised and to revise the project documentation accordingly.

### **3.7.3 Final Validation**

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

In case the findings from CARs and CLs 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), CL(s) and FAR(s) are documented in chapter 4.

## **3.8 Technical review**

Before submission of the final validation report a technical review of the whole RCP 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 validation 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.

## **3.9 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 document submission to the UNFCCC 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 revised PDD, visits, interviews and supporting documents are summarized:

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

Validation topic <sup>1)</sup>	No. of CAR	No. of CL	No. of FAR
General description of project activity (A) - Project specification - Technical project description - Participation	2	0	0
Project Baseline, Estimated Emission Reductions and Monitoring Plan (B) - Application of the Methodology - Baseline validity and update - Calculation of GHG emission reductions Project emissions Baseline emissions Leakage - Applicability of data and parameters defined ex-ante - Monitoring Methodology - Monitoring Plan	10	3	0
Duration of the Project / Crediting Period (C)	0	0	0
PDD editorial aspects (D)	2	0	0
<b>SUM</b>	<b>14</b>	<b>3</b>	<b>0</b>

<sup>1)</sup> The letters in brackets refer to the validation protocol

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

Finding	A1		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The date of the renewal of crediting period in section A.1 and C.2.2 of the PDD version 01 is incorrect.		

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Finding	A1						
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	<p>The date of renewal of crediting period has been revised in the PDD version 02 sections A.1 and C.2.2. to 21/12/2012 to 20/12/2019.</p> <table border="1"> <tr> <td><input checked="" type="checkbox"/> Changes in PDD</td><td>Section(s): A.1 &amp; C.2.2</td><td>New version No.: 02</td></tr> <tr> <td><input type="checkbox"/> Changes in XLS</td><td>Worksheet(s):</td><td>New version No.:</td></tr> </table>	<input checked="" type="checkbox"/> Changes in PDD	Section(s): A.1 & C.2.2	New version No.: 02	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
<input checked="" type="checkbox"/> Changes in PDD	Section(s): A.1 & C.2.2	New version No.: 02					
<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:					
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>PDD version 02, section A.1 and C.2.2: The start date of crediting has been updated correctly from 2012-12-21 to 2019-12-20.</p> <p>CLOSED</p>						
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input type="checkbox"/> Additional action should be taken (finding remains open)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>						

Finding	A2												
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR												
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>The technical specification of the project activity is not found in section A.3 of the PDD version 01. Correction is requested.</p>												
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	<p>The technical specification of the main equipments has been summarized and included in the revised PDD version 02 section A.3. Table 1, the detail is below:</p> <p>The technical specification reflects the actual implementation of the project activity.</p> <table border="1"> <thead> <tr> <th>Main equipment</th><th>Supplier</th><th>Specification</th></tr> </thead> <tbody> <tr> <td>Boiler</td><td>Electrowatt-Ekono (Thailand) Ltd.</td><td>Design pressure = 76 barg Design temperature = 485°C Capacity = 91 T/HR</td></tr> <tr> <td>Turbine</td><td>Electrowatt-Ekono (Thailand) Ltd.</td><td>Condensing turbine Inlet steam pressure 65 bar. A Inlet temperature 480°C Speed (turbine/generator) 4900/1500 rpm Rated output (at generator terminal) 22.5 MW.</td></tr> <tr> <td>Generator</td><td>Electrowatt-Ekono (Thailand) Ltd.</td><td>Rated capacity 22.5 MW Rated Voltage 6.6 kV Rated current 260 A Rated power factor 0.8 Rated frequency 50 Hz Rated Speed 1500 rpm</td></tr> </tbody> </table>	Main equipment	Supplier	Specification	Boiler	Electrowatt-Ekono (Thailand) Ltd.	Design pressure = 76 barg Design temperature = 485°C Capacity = 91 T/HR	Turbine	Electrowatt-Ekono (Thailand) Ltd.	Condensing turbine Inlet steam pressure 65 bar. A Inlet temperature 480°C Speed (turbine/generator) 4900/1500 rpm Rated output (at generator terminal) 22.5 MW.	Generator	Electrowatt-Ekono (Thailand) Ltd.	Rated capacity 22.5 MW Rated Voltage 6.6 kV Rated current 260 A Rated power factor 0.8 Rated frequency 50 Hz Rated Speed 1500 rpm
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Finding	A2		
	<input checked="" type="checkbox"/> Changes in PDD	Section(s): A.3	New version No.: 02
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 02 section A.3: Table 1 is added for the equipment specifications. The equipment was checked during onsite and confirmed are correct. <b>CLOSED</b>		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed		

Finding	B1		
<b>Classification</b>	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	PDD version 01, section B.2: The applicability criteria for ACM0006 version 4 at the time of the registration permits co-generation and no co-generation. It is request to include in the PDD on how this applicability is not applicable anymore to the project and leads to the change of using ACM0018.		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The revised PDD version 02 was revised. The following description was included in section B.2. <p>“The project activity is power-only generation project and applied ACM0006 version 4, which allowed both co-generation and none co-generation project activity, during the time of registration. However, based on the ACM0006 version 10 EB52 Annex08 onwards, the applicability of methodology was restricted to power and heat projects. The power-only projects were excluded from this methodology (Refer to latest version of ACM0006 Consolidated methodology for electricity and heat generation from biomass version 12.1.1 EB69 Annex17 valid from 02/03/2012 onwards, history of the document, page 87/89) and applied with a new consolidated methodology ACM0018 “Electricity generation from biomass residues in power-only plants”. Therefore, applicable methodology for project activity in the renewal crediting period is ACM0018 version 3.0.</p> <p>In conclusion, the latest version of ACM0006 is not applicable for the project activity.</p>		
	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.2	New version No.: 02
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 02, section B.2: The above explanation has been included in the revised PDD which states ACM0006 is not applicable for biomass power-only power plant based on ACM0006 version 12.1.1. Therefore ACM0018 version 03.0 was applied since the PA is a biomass power-only plant. <b>CLOSED.</b>		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed		

Finding	B2		
<b>Classification</b>	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	PDD version 01, section B.4, table 6, it has included B8 as the baseline scenario. Clarification is requested on why there is no BE and Leakage determined for scenario B8.		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The baseline scenario B8 was removed from the revised PDD version 02, table 6. Only B1 & B3 are considered as baseline scenarios as per the first crediting period. The baseline scenarios for first renewal of crediting period still remain the same.		
	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.4	New version No.: 02
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 02 section B.4: The baseline scenario in table 1 is corrected to reflect the same as during the time of registration. Baseline scenario B8 was not available at the time of project registration for assessment. It is removed since the primary source of the biomass residue and/or the fate cannot be identified in the absence of the project activity at the registration time whereby at the time of applied methodology ACM0006 does not has to demonstrate. Therefore it is correct to remove.  CLOSED		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed		

Finding	B3		
<b>Classification</b>	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section B.3 of the PDD version 01, clarification is requested on how the CH <sub>4</sub> emission is excluded from the wastewater treatment as it treatment method is anaerobic.		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The justification/explanation of excluded CH <sub>4</sub> from wastewater treatment from the biomass residues has been revised in PDD version 02 table 5 as "Excluded since there is no wastewater from the treatment of biomass residues."		
	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.3	New version No.: 02
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 02 Section B.3: Table 5 has been corrected to exclude CH <sub>4</sub> emissions since there is no wastewater generated by the biomass used by the PA.  CLOSED.		

Finding	B3
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Finding	B4
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section B.4 of the PDD version 01, the continual of the original baseline has not been fully demonstrated in accordance with EB66 Annex 47.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	In the first paragraph of revised PDD section B.4, was added that "Current baseline complies with all relevant mandatory national and/or sectoral policies. There is no change for the baseline in using biomass for generation of electricity" <input checked="" type="checkbox"/> Changes in PDD Section(s): B.4 New version No.: 02 <input type="checkbox"/> Changes in XLS Worksheet(s): New version No.:
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 02 section B.4: The revised PDD includes an explanation that the baseline of the PA has not been changed since registration. The PA complies with all relevant mandatory national and/or sectoral policy. The validation team has sought confirmation from the host country DNA, and confirmed there is no policy established for biomass used for power generation. <sup>/TGO/</sup> CLOSED.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Finding	B5
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	PDD version 01 section B.6.1: Correction is requested to include the project emission calculation and monitoring on the electricity consumed from the Grid during the non-operational hours.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The project emission calculation and monitoring on electricity consumed from the grid during power plant shutdown time was added in the revised PDD version 02 accordance with "Tool to calculate baseline, project and/or leakage emissions from electricity consumption" version 01 EB39 Annex 7. Electricity consumed from the Grid included in parameter PE <sub>ELV</sub> ) <input checked="" type="checkbox"/> Changes in PDD Section(s): B.6.1 New version No.: 02 <input type="checkbox"/> Changes in XLS Worksheet(s): New version No.:

R-No.: MY-RCP 11/068 – 11/560

Finding	B5
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>PDD version 02 Section B.6.1: The project emission from usage of grid electricity is included in revised PDD to calculate PE by applying the “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” version 01 EB39 Annex 7. Parameter EC<sub>PJ,y</sub> is added in Section B.7.1 as the monitored parameter for consumption of grid electricity by PA.</p> <p>CLOSED</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input type="checkbox"/> Additional action should be taken (finding remains open)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	B6
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>No ex-ante values were provided in section B.6.2 of the PDD version 01</p>

R-No.: MY-RCP 11/068 – 11/560

Finding	B6																								
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	<p>Ex-ante values were provided in section B.6.2 of the revised PDD version 02 and detail below:</p> <table border="1"> <thead> <tr> <th>Exante values</th><th>Value</th><th>Source of data</th></tr> </thead> <tbody> <tr> <td>GWPC<sub>H4</sub></td><td>21 until 31/12/2012 25 from 01/01/2013</td><td>IPCC</td></tr> <tr> <td>Biomass residues categories and quantities used for the selection of the baseline scenario selection and assessment of additionality.</td><td>113,909</td><td>On-site assessment of biomass residues categories and quantities</td></tr> <tr> <td>EFCO<sub>2,f</sub></td><td>245 gCO<sub>2</sub>/t km for light vehicle and 129 gCO<sub>2</sub>/t km for heavy vehicle and</td><td>Tool "Project and leakage emissions from road transportation of freight" (Version 01.0.0)</td></tr> <tr> <td>EF<sub>grid,OM,y</sub></td><td>0.6996 tCO<sub>2</sub>e/MWh</td><td>Thailand Greenhouse Gas Management Organization (TGO)</td></tr> <tr> <td>EF<sub>grid,BM,y</sub></td><td>0.4231 tCO<sub>2</sub>e/MWh</td><td>Thailand Greenhouse Gas Management Organization (TGO)</td></tr> <tr> <td>EF<sub>CO<sub>2</sub>,grid,CM,y</sub></td><td>0.5113 tCO<sub>2</sub>e/MWh</td><td>Thailand Greenhouse Gas Management Organization (TGO)</td></tr> <tr> <td>TDL</td><td>5.8%</td><td>DEDE and calculated</td></tr> </tbody> </table> <p> <input checked="" type="checkbox"/> Changes in PDD    Section(s): B.6.2    New version No.: 02  <input type="checkbox"/> Changes in XLS    Worksheet(s):    New version No.:         </p>	Exante values	Value	Source of data	GWPC <sub>H4</sub>	21 until 31/12/2012 25 from 01/01/2013	IPCC	Biomass residues categories and quantities used for the selection of the baseline scenario selection and assessment of additionality.	113,909	On-site assessment of biomass residues categories and quantities	EFCO <sub>2,f</sub>	245 gCO <sub>2</sub> /t km for light vehicle and 129 gCO <sub>2</sub> /t km for heavy vehicle and	Tool "Project and leakage emissions from road transportation of freight" (Version 01.0.0)	EF <sub>grid,OM,y</sub>	0.6996 tCO <sub>2</sub> e/MWh	Thailand Greenhouse Gas Management Organization (TGO)	EF <sub>grid,BM,y</sub>	0.4231 tCO <sub>2</sub> e/MWh	Thailand Greenhouse Gas Management Organization (TGO)	EF <sub>CO<sub>2</sub>,grid,CM,y</sub>	0.5113 tCO <sub>2</sub> e/MWh	Thailand Greenhouse Gas Management Organization (TGO)	TDL	5.8%	DEDE and calculated
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<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>PDD version 02 section B.6.2: The values for the respective ex-ante parameters as stated above are included in the revised PDD. The sources for the data are checked and are correct.</p> <p>CLOSED</p>																								
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<p> <input type="checkbox"/> To be checked during the first periodic verification  <input type="checkbox"/> Additional action should be taken (finding remains open)  <input checked="" type="checkbox"/> The finding is closed         </p>																								

Finding	B7
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Finding	B7																																								
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR																																						
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The baseline emission value provided in section B.6.3 of the PDD version 01 is inconsistent with the excel spread sheet. Correction is requested.																																								
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	<p>The baseline emission figured in section B.6.3 of the revised PDD was revised to be the same as excel spread sheet. The latest revised figure shown as below</p> <table border="1"> <thead> <tr> <th>Parameter</th><th>Value</th><th>Unit</th></tr> </thead> <tbody> <tr> <td>EG<sub>PJ,y</sub></td><td>104,014</td><td>MWh</td></tr> <tr> <td>EF<sub>BL,EL,y</sub></td><td>0.5113</td><td>tCO<sub>2</sub>/MWh</td></tr> <tr> <td>BE<sub>EL,y</sub></td><td>53,182</td><td>tCO<sub>2</sub></td></tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Parameter</th><th>21/12/12-31/12/12</th><th>2013-2018 (each year)</th><th>01/01/19-20/12/19</th><th>Unit</th></tr> </thead> <tbody> <tr> <td>BE<sub>EL,y</sub></td><td>1,603</td><td>53,182</td><td>51,579</td><td>tCO<sub>2</sub></td></tr> <tr> <td>BE<sub>BR,y</sub></td><td>141</td><td>5,561</td><td>5,393</td><td>tCO<sub>2e</sub></td></tr> <tr> <td>BE<sub>y</sub></td><td>1,744</td><td>58,743</td><td>56,973</td><td>tCO<sub>2</sub></td></tr> </tbody> </table> <table border="1"> <tbody> <tr> <td><input checked="" type="checkbox"/> Changes in PDD</td><td>Section(s): B.6.3</td><td>New version No.: 02</td></tr> <tr> <td><input type="checkbox"/> Changes in XLS</td><td>Worksheet(s):</td><td>New version No.:</td></tr> </tbody> </table>			Parameter	Value	Unit	EG <sub>PJ,y</sub>	104,014	MWh	EF <sub>BL,EL,y</sub>	0.5113	tCO <sub>2</sub> /MWh	BE <sub>EL,y</sub>	53,182	tCO <sub>2</sub>	Parameter	21/12/12-31/12/12	2013-2018 (each year)	01/01/19-20/12/19	Unit	BE <sub>EL,y</sub>	1,603	53,182	51,579	tCO <sub>2</sub>	BE <sub>BR,y</sub>	141	5,561	5,393	tCO <sub>2e</sub>	BE <sub>y</sub>	1,744	58,743	56,973	tCO <sub>2</sub>	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.6.3	New version No.: 02	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
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<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed																																								

Finding	B8								
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR						
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	PDD version 01, ER spreadsheet: The calculation in the excel sheet is required to be traceable. Values used shall be reference with proper relevant and/or quantitative documented evidence.								
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	<p>The calculation in spread sheet was revised to be traceable and put more remarked on the source of information. The last 7 years actual monitoring data from year 2005-2012 was used as the source of information.</p> <table border="1"> <tbody> <tr> <td><input checked="" type="checkbox"/> Changes in PDD</td><td>Section(s): B.6.4</td><td>New version No.: 02</td></tr> <tr> <td><input checked="" type="checkbox"/> Changes in XLS</td><td>Worksheet(s): Parameter</td><td>New version No.: 02</td></tr> </tbody> </table>			<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.6.4	New version No.: 02	<input checked="" type="checkbox"/> Changes in XLS	Worksheet(s): Parameter	New version No.: 02
<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.6.4	New version No.: 02							
<input checked="" type="checkbox"/> Changes in XLS	Worksheet(s): Parameter	New version No.: 02							



Finding	B8
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>The reference for the data applied in the ER spreadsheet has been included which are derived from the 1<sup>st</sup> crediting period monitored data. The data applied were reviewed and can be confirmed are from the 1<sup>st</sup> CP monitored data from year 2005 to 2012.</p> <p>CLOSED</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input type="checkbox"/> Additional action should be taken (finding remains open)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	B9		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	PDD version 01 section B.7.1: The monitoring of type of trucks (e.g. heavy or light as per define in the EB0 Annex23), is required to be included in the monitoring plan.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	EB63 Annex 10 Methodological tool: Project and leakage emissions from transportation of freight version 01.1.0 were revised to EB70 Annex23 version 01.1.0. Option B from the tool was applied to use for the project activity. The monitoring of type of trucks was described as per EB70 Annex23 §19 in section B.7.1 parameter $FR_{f,m}$ . Additional comment.		
	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.7.1	New version No.: 02
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 02 Section B.7.1 Parameter $FR_{f,m}$ is included in monitoring of the type of trucks in accordance to EB70 Annex 23.  CLOSED		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed		

Finding	B10
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>The project emission caused by the onsite transportation of the biomass fuel is not included in the project activity. This is required by the methodology. Correction is requested in section B.7.1 of the PDD version 01 on the Quantity of fuel combusted in process j during year y.</p>

Finding	B10		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	<p>The project emission caused by the onsite transportation of biomass is calculated based <math>PE_{FC,i,y} = \sum FC_{i,j,y} \times COEF_{i,y}</math> where combustion process j is comprised of “Diesel consumption for start up process” and “Diesel consumption for onsite transportation”. Both process j are utilized same type of diesel i provided by the contract supplier. The monitor parameter <math>FC_{i,j,y}</math> was corrected and reflected the actual implementation.</p>		
	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.7.1	New version No.: 02
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>PDD version 02 Section B.7.1, Parameter <math>FC_{i,j,y}</math>: In the additional comments, the method of determine the PE for combustion of diesel fuel is added.</p> <p>CLOSED</p>		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed		

Finding	B11		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>The following values stated in section B.7.1 of the PDD version 01 are not consistent with the excel spread sheet:</p> <ol style="list-style-type: none"> <li>Biomass residues categories and quantities used in the project activity</li> <li>Quantity of fuel type i combusted in process j during the year y</li> </ol>		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	<p>The value of parameters below was revised in the PDD section B.7.1 to be the same as excel spread sheet;</p> <ol style="list-style-type: none"> <li>Biomass residues categories and quantities used in the project activity : The revised figures stated in PDD section B.7.1 and spread sheet tab “Baseline” row B54</li> <li>Quantity of fuel type i combusted in process j during the year y</li> </ol> <p>The revised figures stated in PDD section B.7.1 and spread sheet tab “Project” row B23</p>		
	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.7.1	New version No.: 02
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>PDD version 02, section B.7.1 and ER spreadsheet:</p> <ol style="list-style-type: none"> <li>The quantity of biomass residues used is corrected and based on the 1st CP average amount used.</li> <li>The quantity of fuel used by the PA is corrected and based on the 1st CP data.</li> </ol> <p>The data in PDD and ER are consistent.</p> <p>CLOSED.</p>		



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Finding	B11
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Finding	B12				
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR				
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	According to EB66 Annex 8, the accuracy of measurement for applicable equipment is required to be included in section B.7.1 of the PDD version 01.				
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The accuracy of measurement of individual monitor parameter equipment was included in revised PDD version 02 section B.7.1. <input checked="" type="checkbox"/> Changes in PDD <table border="1"> <tr> <td>Section(s): B.7.1</td> <td>New version No.: 02</td> </tr> </table> <input type="checkbox"/> Changes in XLS <table border="1"> <tr> <td>Worksheet(s):</td> <td>New version No.:</td> </tr> </table>	Section(s): B.7.1	New version No.: 02	Worksheet(s):	New version No.:
Section(s): B.7.1	New version No.: 02				
Worksheet(s):	New version No.:				
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 02 Section B.7.1: The accuracy of the instrument for each measure parameters is corrected and based on the instrument accuracy. CLOSED.				
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed				

Finding	B13				
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR				
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The monitoring plan in section B.7.3 of the PDD version 01 does not include the provisions in case of data loss or malfunction of the monitoring equipment.				
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	In the revised PDD section B.7.3, the plan for deal with data lost or malfunction of the monitoring equipment was added as below: “The gathered monitoring data will be digitally stored in a recorder. At regular intervals, data will be printed out and archived. All data will be kept for at least two years following the end of the crediting period or the last issuance of CERs (whatever is the later). For all monitoring supervision, maintenance, data storage, data handling and plausibility check measures will be elaborated by ATB for their monitoring and management staff. In case of data loss the printed out can be used also in case of malfunction of monitoring equipment the average of printed out data from the previous month will be used.” <input checked="" type="checkbox"/> Changes in PDD <table border="1"> <tr> <td>Section(s): B.7.3</td> <td>New version No.: 02</td> </tr> </table> <input type="checkbox"/> Changes in XLS <table border="1"> <tr> <td>Worksheet(s):</td> <td>New version No.:</td> </tr> </table>	Section(s): B.7.3	New version No.: 02	Worksheet(s):	New version No.:
Section(s): B.7.3	New version No.: 02				
Worksheet(s):	New version No.:				

Finding	B13
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 02, Section B.7.3: Provisions for data loss and malfunction of monitoring equipment is included and is acceptable and reasonable.  <b>CLOSED</b>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Finding	B14
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	PDD version 02, Section B.2, Applicability Table 2: criterion 3: This criterion is not optional. All possible ways of biomass acquisition are mentioned. Specification is missing whether the “field and rice mill” is off-site or on-site, and in case it is off-site, specification is missing whether it is from nearby area, special supplier or from the market.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	Table 2: Criterion 3 was revised as follow “The biomass residues are obtained off-site from the field and identified rice mills nearby area”. <input checked="" type="checkbox"/> Changes in PDD      Section(s): B.2      New version No.: 03 <input type="checkbox"/> Changes in XLS      Worksheet(s):      New version No.:
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 03, section B.2, Applicability Table 2: criterion 3 has been revised to state biomass residues are obtained off-site from fields and nearby rice mills..  During the onsite visit, the validation team has checked on the monthly reports and interview the PP to confirm the purchase of the biomass residues from rice fields and rice mills. <sup>/IMO1/MR/</sup>  Therefore, the criterion is applicable
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Finding	B15
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	PDD version 02, Section B.2: Applicability Table 3: criterion 3: It is not transparently discussed why rice husk is not considered a biomass residue from a production process.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as</i>	Table 3: Criterion 3 was revised as follow “The biomass residue used in the project activity is supplied from rice production process. The implementation of the project is not result in an increase of the processing capacity of rice to the rice mill”

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Finding	B15		
part of the CA, the PP is requested to indicate the revised sections as well as the new version No.	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.2	New version No.: 03
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>PDD version 03, Section Section B.2: Applicability Table 3: criterion 3 is revised to include "The implementation of the project is not result in an increase of the processing capacity of rice to the rice mill".</p> <p>The validation team has reviewed the rice production records issued by the local Department of Agriculture <sup>/RPR/</sup> and conduct interview <sup>/IM03/</sup> that there is no increase in the rice milling capacities in the region around the PA.</p> <p>Therefore the justification is correct and is applicable.</p>		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input type="checkbox"/> The finding is closed		

Finding	B16		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	PDD version 02, section B.4: Outcome of step 1b, last paragraph: The sentence is not complete: "Alternative both for power generation and used of biomass residues which is outcome of step 1a demonstrated above are in compliance with mandatory applicable legal and regulatory."		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	PDD section B.4, step 1b is revised as "Both alternatives for power generation and used of biomass residues which is outcome of step 1a demonstrated above are in compliance with mandatory applicable legal and regulatory".		
	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.4	New version No.: 03
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 03, section B.4, step 1b. The sentence has been corrected accordingly.		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input type="checkbox"/> The finding is closed		

Finding	B17		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR

Finding	B17
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	PDD version 02, section B.4: 1. “Outcome of Step 2a” and sentence above this header: “It is concluded that there is no barrier identified.” This is not correct as the barriers are demonstrated later under the additionality section B.5. 2. In the “Outcome of Step 2a” there should be at least a reference to the barrier discussion in section B.5.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	PDD section B.4: 1. The sentence above step 2a is deleted. 2. The outcome of step 2a is revised to the investment and technological barriers that prevent the implementation of the proposed project activity not undertaken as a CDM project activity is added and discussion of barrier is in section B.5.
	<input checked="" type="checkbox"/> Changes in PDD    Section(s): B.4    New version No.: 03 <input type="checkbox"/> Changes in XLS    Worksheet(s):    New version No.:
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 03, Section B.4: 1. The sentence above outcome step 2a is deleted since it is not relevant. 2. The outcome of step 2a is updated to include the 2 barriers of investment and technological faced by the PA which were further justified in section B.5, step 3 barrier analysis. The PA is undergoing RCP and the barrier analysis is maintain as at the time of registration.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Finding	B18
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	PDD version 02, section B.5: It should be made clearer that the section B.5. is not updated with regard to the methodology applied
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	Section B.5 was revised as regards to the methodology applied
	<input checked="" type="checkbox"/> Changes in PDD    Section(s): B.5    New version No.: 03 <input type="checkbox"/> Changes in XLS    Worksheet(s):    New version No.:

Finding	B18
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 03 Section B.5 is updated to include the applied methodology for RCP and the additionality remains the same as at registration.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Finding	B19
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	PDD version 02, Section B.6.1: The last sentence is not complete of Step 1.4, as regards to "According to no fossil fuel would be used for electricity generation in the baseline scenario at the project site, <b>Case 2: No connection to the electricity grid is applied.</b> "
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	Section B.6.1 step 1.4 last sentence is revised to <b>Case 1: No use of fossil fuels in the baseline</b> is applied and $EG_{BL,FF,y} = 0$ .
	<input checked="" type="checkbox"/> Changes in PDD Section(s): B.6.1 New version No.: 03
	<input type="checkbox"/> Changes in XLS Worksheet(s): New version No.:
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 02, Section B.6.1: Step 1.4 is corrected to case 1 since there is no electricity generation in the baseline scenario at the project site and is correct according to the registered PDD.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Finding	D1
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The information of the Annex 1 Country participants are not provided in Appendix 1 of the PDD version 01.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The information of Annex 1 Country was added in Annex I of the PDD .
	<input checked="" type="checkbox"/> Changes in PDD Section(s): Appendix 1 New version No.: 02
	<input type="checkbox"/> Changes in XLS Worksheet(s): New version No.:

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Finding	D1
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 02 Appendix 1: The Annex I PP is included in revised PDD and consistent with project page at UNFCCC website. <b>CLOSED</b>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Finding	D2
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The project activity is undergoing post registration changes. Appendix 6 of the PDD version 01 is incorrect.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	Appendix 6 of PDD version 02 was revised and indicated the post registration change. <input checked="" type="checkbox"/> Changes in PDD Section(s): Appendix 6 New version No.: 02 <input type="checkbox"/> Changes in XLS Worksheet(s): New version No.:
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PDD version 02, Appendix 6 is corrected as regards to the post registration changes during the 1 <sup>st</sup> CP and approved by UNFCCC EB. <b>CLOSED.</b>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed



## 5 VALIDATION ASSESSMENT SUMMARY

### 5.1 Notification to the UNFCCC

The project has been registered on 2007-06-18 and the first renewable crediting period has been started on 2005-12-20. As per the project cycle procedure the PPs shall notify the UNFCCC within a given timeframe from 270 to 180 days prior to the date of expiration of the current crediting period. The respective dates are given in following table

**Table 4-1:** Notification dates

Event	Date
Date of Registration	2007-06-18
Start of notification window (-270d)	2012-03-20
End of notification window (-180d)	2012-06-20
Actual date of notification <sup>/EM1/</sup>	2012-06-15
UNFCCC confirmation date <sup>/EM2/</sup>	2012-06-18

<sup>1)</sup> The letters in brackets refer to the validation protocol

As the UNFCCC has confirmed the receipt, the formal notification requirements for a directly adjacent 2<sup>nd</sup> crediting period are considered to be met for this project activity.

### 5.2 Project description

Basically the project activity did not change since finalization of the registered PDD. Therefore section A of the revised PDD has basically only been migrated from the registered / approved revised PDD versions. <sup>/PDD1/PDD2/</sup> Only a few editorial changes have been identified which do not impact the project design or the project's ability to generate emission reductions.

### 5.3 Participation

The names of the project participants as listed in the revised PDD (sections A.4. and appendix 1) are consistent with those listed on the dedicated UNFCCC project website as well as in the last version of the modalities of communication annex 2<sup>/MOC/</sup>. For the complete list of project participants please refer to table 2-2 of this report.

## 5.4 Applied Methodologies and tools

The project activity was registered under the following methodology (table 5-2):

**Table 5-2:** Applied methodology/ies at registration and RCP stage

At registration stage		At RCP stage	
Name of methodology	Version	Name of methodology	Version
Consolidated methodology for grid-connected electricity generation from biomass residues	ACM0006 ver.04.0	Consolidate methodology for electricity generation from biomass residues in power-only plants	ACM0018 ver.03.0

The methodology ACM0006 applied during registration is no longer applicable for biomass power-only plant. Therefore, the methodology has been updated to the version indicated in the above table. This version is applied for the purpose of renewal of crediting period.

Furthermore the methodological tools as listed in the table below have been applied at registration stage and not applicable at this RCP stage. The tools listed at below table for RCP stage are in accordance to the applied methodology ACM0018.

**Table 5-3:** Applied methodological tools

At registration stage		At RCP stage	
Name of tool	Version	Name of tool	Version
Approved Consolidated Baseline and Monitoring Methodology ACM0002 - "Consolidated baseline methodology for grid-connected electricity generation from renewable sources"	06	Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion"	02
		Emissions from solid waste disposal sites	06.0.1
		Tool to calculate baseline, project and/or leakage emissions from electricity consumption	01
		Tool to calculate the emission factor for an electricity system	04.0.0
		Assessment of the validity of the	03.0.1



At registration stage		At RCP stage	
		original/current baseline and update of the baseline at the renewal of the crediting period	
		Project and leakage emissions from road transportation of freight	01.0.0

By means of checking the UNFCCC website it is confirmed that the selection of the applied methodology and methodological tools has been done correctly in line with the applicable requirements for the RCP.

## 5.5 Methodology applicability conditions

All applicability conditions of the updated methodology are still met as detailed in annex 2 of this report. Thus the methodology is deemed fully applicable for the new crediting period and no request for deviation with regards to the applicability of the methodology is required.

## 5.6 Project Boundary

The project boundary (geographic and also related to GHG sources and gases) are correctly given in the updated PDD, as described in section B.3 and comply with the requirements of the methodology.

There are no other sources which are impacted by the project which are not addressed by the applied methodology.

## 5.7 Original Baseline validity and update

### 5.7.1 Baseline scenario

The baseline scenario of the project as per the registered / approved revised project can be described as follows:

With reference to version 03.0.1 of the “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period”, VVS (V.05), PCP (V3.2) and PS (V.4.0), the demonstration of the validity of the original baseline or its update does not require a reassessment of the baseline scenario, but rather an assessment of the emissions which would have resulted from that scenario. For the project, the assessment of the validity of the baseline is an assessment of the emissions, which would have resulted from that scenario. According to EB66 Annex 47 (“Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period”), the assessment is done in steps as follows:

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## **Step 1: Assess the validity of the current baseline for the next crediting period**

The “Procedures for the renewal of the crediting period of a registered CDM project activity” approved by the CDM Executive Board (EB63 Annex 29 version 06.0) require assessing the impact of new relevant national and/or sectoral policies and circumstances on the baseline.

The validity of the current baseline is assessed using the following Sub-steps:

### Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies

The baseline scenario has not been changed during the second crediting period and is in compliance with all the relevant mandatory national and/or sectoral policies. The validation team has sought confirmation with Thailand DNA, Thailand Greenhouse Gas Management Organisation (TGO) <sup>/TGO/</sup>, as well as all environmental regulation and laws, there are no policies established for usage of rice husks for power generation. It can be evidenced that the company is still following relevant mandatory national and/or sectoral policies and that they have not been changed from the time the PA was registered.

### Step 1.2: Assess the impact of circumstances

The circumstances existing at the time of requesting renewal of crediting period are the same as existing in the validation of the PA. The estimated baseline emissions are the reduction of methane emissions as a result of the disposal of rice husks as per applied methodology ACM0018 Version 03.0.0 (the registered PA used ACM0006 version 04) and the electricity generated and dispatched to the grid, multiplied by the emission factor of the Thailand National Grid.

According to observations during the site visit, the baseline scenario identified at the validation of the PA was the continuation of the current practice without any investment.

It could be observed that the emission factor of the Thailand national grid applied for the 1<sup>st</sup> crediting period was 0.51tCO<sub>2</sub>/MWh to 0.5113tCO<sub>2</sub>/MWh in the renewed crediting period. The slight increase has no significant impact. From the review of the study of emission factor conducted TGO, it can be confirmed that most of the electricity is still generated by fossil fuel power plants during the last years.

At the time of requesting renewal of the crediting period, the conditions used to determine the baseline scenario in the previous crediting period are still valid.

New circumstances have not been observed which will harm the validity of the baseline scenario.

### Step 1.3: Assess whether the continuation of use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested

The most likely scenario is the continuation of current baseline equipment. According to the registered PDD, the expected operational lifetime of the project

is 25 years. The PA has performed regular maintenance thus lifetime of equipment is still valid. No major investment will be necessary during the 2<sup>nd</sup> crediting period. The PA was in commercial operation as from 2005-12-21 and the complete equipments are still within their lifetime.

#### Step 1.4: Assessment of the validity of the data and parameters

The grid emission factor determined at the beginning of the previous crediting period is no longer applicable. With the renewing of the crediting period, the grid emission factor has to be updated by applying the most recent data released by Thailand Greenhouse Gas Management Organisation (TGO). The emission factor calculated by TGO was based on values from the most recent 3 years of 2008 to 2010. The version of the "Tool to calculate the emission factor for an electricity system" applied by TGO was version 2.2.1 which is deemed appropriate. The calculated combine margin emission factor is 0.5113 tCO<sub>2</sub>e/MWh applicable for general projects <sup>/GEF/</sup>. The assessment team has reviewed the document and sought confirmation from TGO to confirm the emission factor is valid. <sup>/TGO/</sup> Therefore, it can be concluded the emission factor applied is correct.

### **Step 2: Update the current baseline and the data and parameters**

#### Step 2.1: Update the current baseline

The original baseline was determined according to the UNFCCC approved methodology ACM0006 version 04:

B1: The biomass is dumped or left to decay or burned in an uncontrolled manner without utilizing it for energy purposes

P4: The generation of power in existing and/or new grid-connected power plants generate electricity for export to grid.

The baseline scenario is determined using the methodology ACM0018 version 03.0.0 which is same as the time when PA is registered.

B1: The biomass residues are dumped or left to decay mainly under aerobic conditions. This applies, for example, to dumping and decay of biomass residues on fields.

B3: The biomass residues are burnt in an uncontrolled manner without utilizing it for energy purposed.

P5: The generation of power in the grid.

The applied methodology was reviewed by the validation team. The baseline scenario was identified correctly and in line with the methodology. The baseline scenario remains the same as the first crediting period.

#### Step 2.2: Update the data and parameters

Default parameters in the new version of the applied methodologies were updated accordingly. Furthermore, all formulae used to calculate the Baseline

Emissions, Project Emissions, Leakage and Emission Reductions was updated according to the new version of the methodology.

The project will reduce methane emissions to the atmosphere by utilising the rice husks for generating electricity for export to the grid and reduce the usage of fossil fuel to generate electricity in the grid.

The calculation of GHG emission reductions are in accordance with the applied methodology ACM0018 version 03.0.

The ex-ante baseline emissions are:

- CH<sub>4</sub> emissions from anaerobic decay of biomass residues and/or CH<sub>4</sub> emissions from uncontrolled burning of biomass residues without utilizing them for energy purposes;
- CO<sub>2</sub> emissions from grid-connected fossil fuel power plants in the electricity system;

The expected project emissions are:

- Consumption of fossil fuel at site;
- Consumption of grid electricity;
- Emissions due to transportation of biomass to PA;
- Emissions from combustion of biomass

Leakage will be considered as equal to zero, since the PA baseline scenario is B1 and B3 unless if the amount of fossil fuel used, on energy basis due to diversion of biomass residues for other users would be in the baseline scenario in accordance to baseline scenario of B5, B6, B7 and B8.

The emission reduction calculation was reviewed by the validation team. All underlying data/values are transparently presented and assessed to be adequate.

The emission factor applied is deemed to be correct and transparent since it has been calculated by the TGO, Thailand DNA. <sup>/TGO/</sup>

All values for the monitoring and non-monitoring parameters and estimated emission reductions are plausible and conservative.

As per the project standard this scenario is not subject to re-assessment and is thus deemed to be applicable for the next crediting period.

However the baseline itself i.e. the calculation of baseline emissions has been checked regarding the continued validity of underlying assumptions and parameter values. The assessment steps are described in the following subsections.

### **5.7.2 Compliance of the baseline with relevant policies**

The baseline of the registered PDD has been assessed to be compliant with the national legislation and policies applicable for the project activity at the time of validation. During the first crediting period the PP has frequently reviewed the legal requirements and policies relevant for the baseline of the project. On the basis of this

the PP has arrived at the conclusion that the baseline is still in line with all applicable legislations and policies.

The validation team has independently reviewed the host country legislation and obtained confirmation for DNA of Thailand there were no changes as well as current policies for biomass power plants. <sup>/TGO/</sup>

On the basis of this analysis the validation team confirms that the baseline is still in compliance with the currently applicable national legislation and other national and/or sectoral policies. Therefore the baseline did not need to be adjusted due to changes in this respect.

### 5.7.3 Impact of circumstances

As the baseline scenario might be affected by changed circumstances, e.g. market conditions, market prices etc. the PP has checked the baseline against such changes that have occurred since validation. This is of special importance if the baseline scenario is the continuation of the pre-project scenario.

In the current case no such changes have been identified by the project participants as thus changed market conditions are not likely to impact the PA.

The validation team has independently checked whether there are changes in circumstances which have an impact on the baseline. No such changes have been identified and thus it is deemed appropriate not to revise the baseline due to changes in circumstances.

The validation team has interviewed several rice husks users, check with authorities on the users, production of rice and surplus of rice husk generated in the region where the PA is located. Thus, the baseline has not changed as from the time the project is registered. <sup>/EM3/RHS/RPR/CP/SBP/SIR/</sup>

The following interviews conducted:

Rice Miller	Phothaley Thayakij rice mill with a capacity of 300 ton per day generates rice husk of 75 ton and consumed 12.8 tons rice husk 12.8. Therefore, the quantity of rice husk consumed is approx. 17% of total rice husk and has a surplus of 83%.
Chicken Farm	Kriangsak Farm consumed annually 29,500kg for 50,000 chickens. Each chicken consumed is 0.59 kg per year. Therefore, the quantity is insignificant.
Brick and power plants	According to the Department of Industry Works (DIW) officers from 6 provinces, there are 74 brick plants that consumed approx. 18,500 tons per year.  There are 4 power plants in 3 provinces consuming approx. 81,000 tons per year according to the interviewed offices.
Cement plant	Jalaprathan Cement Public Company Limited consumes approx. 10,600 tons per year.

The outcome of the interviews indicates the consumption of rice husks by the respective users and the PA do not caused a significant impact on compete of usage since there is a surplus of 236%.

#### 5.7.4 Likelihood of investments

If the baseline scenario has been identified as the continuation of the pre-project scenario it is necessary to assess whether an investment and/or exchange of the baseline equipment (e.g. due to expiry of the equipment's lifetime) during the upcoming crediting period is to be deemed the most likely scenario. If so the baseline needs to be updated.

In case of an ACM project there is no baseline equipment which is to be exchanged. Furthermore no other reasons for a possible investment – other than possible legal requirements – have been identified.

Thus the validation team confirms the conclusion that no changes to the baseline are required due to the likelihood of investments in equipment which impacts the baseline have not changed since implementation. The capacity of the generation system remains the same and could be confirmed by means of document review and onsite inspection. <sup>/TS/</sup>

#### 5.7.5 Validity of data and parameters determined ex-ante

The parameters which have been determined ex-ante in the registered/approved revised PDD are no longer valid. The following were according to the revised methodology ACM0018 version 03.0.

Parameter	Description	Applied value	Means of validation
GWP <sub>CH4</sub>	Global warming potential for methane valid for the relevant commitment period	21 / 25 tCO <sub>2</sub> e/tCH <sub>4</sub>	Value 21 from 2012-12-21 to 2012-12-31 for 1 <sup>st</sup> commitment period.  Value 25 from 2013-01-01 onwards in according to EB69 Annex 3 for 2 <sup>nd</sup> commitment period.
	Biomass residues categories and quantities used for the selection of the baseline scenario selection and assessment of additionality	113,909t/y	The average amount combusted per year during the 1 <sup>st</sup> CP. <sup>/MR/</sup>
EF <sub>CO2,f</sub>	Default CO <sub>2</sub> emission factor for freight transportation activity f	Light Vehicle – 245gCO <sub>2</sub> /t km  Heavy vehicle – 129gCO <sub>2</sub> /t/km	In accordance to ACM0018 version 03.0
EF <sub>grid,OM,y</sub>	Grid operating margin emission factor	0.6996tCO <sub>2</sub> /MWh	The value is applied as permitted by the tool to calculate the emission factor for an electricity system version 2.2.1  The value is calculated by the Thailand DNA <sup>/GEF/</sup> .
EF <sub>grid,BM,y</sub>	Grid build margin emission factor	0.4231tCO <sub>2</sub> /MWh	
EF <sub>CO2,grid,CM,y</sub>	Grid Emission combined margin factor of the baseline	0.5113tCO <sub>2</sub> /MWh	



These changes have been appropriately considered in the updated PDD.

## 5.8 Additionality

The project's additionality has been demonstrated at registration stage. As per the project standard PPs are not requested to justify the additionality of the project again at RCP stage. Thus the corresponding parts have simply been transferred to the respective section of the applicable PDD template version 04.1.

It is confirmed that the transfer has been done appropriately. No further assessment regarding additionality has been carried out by the validation team.

## 5.9 Monitoring Plan

The monitoring plan in the PDD has been updated to comply with the latest applicable version of the monitoring methodology (ACM0018 ver.03.0). The basic changes from the current crediting period can be summarized as follows:

- The data/parameters representation have been changed to be in accordance with ACM0018 version 03.0;
- The values listed in the respective parameters are the average of the actual values of the 1<sup>st</sup> crediting period.

Parameter	Description	Applied value	Means of validation
Biomass residues categories and quantities used in the project activity	Refer to the parameter table in Section B.7.1 for description	113,909t/y	The average quantity combusted per year during the 1 <sup>st</sup> CP. /MR/
BR <sub>PJ,n,y</sub>	Quantity of biomass residues of category n used in power plants which are located at the project site and included in the project boundary in year y	113,909t/y	The average amount of biomass combusted per year during the 1 <sup>st</sup> CP. /MR/
BR <sub>n,B1/B3,y</sub>	Amount of biomass residues category n used in the project plant included in the project boundary in year y	113,909t/y	The average annual amount of biomass residues used by the PA during the 1 <sup>st</sup> CP. /MR/DWM/
For biomass residues categories for which scenarios B1:, B2: or B3: is deemed a	<ul style="list-style-type: none"> <li>Quantity of available biomass residues of type n in the region</li> <li>Quantity of biomass residues of type n that are utilized (e.g. for energy generation or as</li> </ul>	The data will be available during monitoring.	According to applied methodology ACM0018 for scenario B1 and B3

plausible baseline alternative, project participant shall demonstrate that this is a realistic and credible alternative scenario	<p>feedstock) in the defined geographical region</p> <ul style="list-style-type: none"> <li>Availability of a surplus of biomass residues type n (which cannot be sold or utilized) at the ultimate supplier to the project and a representative sample of other suppliers in the defined geographical region</li> </ul>		
$EG_{PJ, gross, y}$	Gross quantity of electricity generated in all power plants which are located at the project site and included in the project boundary in year y	122,402MWh/y	The average annual gross amount of electricity generated during the 1 <sup>st</sup> CP. <sup>/MR/</sup>
$EG_{PJ, aux, y}$	Total auxiliary electricity consumption required for the operation of the power plants at the project site	17.585.60MWh/y	The average annual amount of auxiliary electricity consumed during the 1 <sup>st</sup> CP. <sup>/MR/</sup>
$EG_{projectplant}$	Net quantity of electricity generated from the ATB plant	104,817.36MWh/y	The average net annual amount of electricity generated during the 1 <sup>st</sup> CP. <sup>/MR/EPS/</sup>
$EC_{PJ, y}$	On-site electricity imported attributable to the project activity	621.27MWh/y	The average annual amount of electricity imported during the 1 <sup>st</sup> CP. <sup>/MR/EPS/</sup>
$NCV_{n, y}$	Net calorific value of biomass residues of category n in year y	14.39GJ/t (dry basis)	The average net calorific value of the biomass residue per year during the 1 <sup>st</sup> CP. <sup>/NCV/MR/</sup>
$EF_{BR, n, y}$	CH <sub>4</sub> emission factor for uncontrolled burning of the biomass residues category n during the year y	0.00013 tCH <sub>4</sub> /GJ	The CH <sub>4</sub> emission factor per year applied during the 1 <sup>st</sup> CP.
Moisture content of the biomass residues	Moisture content of each biomass residues type k	12.61%	The average moisture content for the biomass residue per year during the 1 <sup>st</sup> CP. <sup>/MR/DWM/NCV/</sup>
$EF_{CH_4, BR}$	CH <sub>4</sub> emission factor for the combustion of biomass residues in the project plant	0.0000411tCH <sub>4</sub> /GJ	The CH <sub>4</sub> emission factor per year applied during the 1 <sup>st</sup> CP.
$D_{f, m}$	Return trip road distance between the original and destination of freight transportation activity f in monitoring period m	94.09 km	The average round trip distance per year during the 1 <sup>st</sup> CP. <sup>/DWM/</sup>
$FR_{f, m}$	Total mass of freight transported in freight	113,909t	The average annual amount of biomass transported per year



	transportation activity f in monitoring period m		during the 1 <sup>st</sup> CP. /DWM/MR/
$FC_{i,j,y}$	Quantity of fuel type i combusted in process j during the year y	382.74/t/y	The average annual amount of diesel combusted per year during the 1 <sup>st</sup> CP. /MR/
$p_{i,y}$	Weighted average density of fuel type i in year y	0.85kg/m <sup>3</sup>	The average density of the fuel type per year during the 1 <sup>st</sup> CP.
$NCV_{i,y}$	Weighted average net calorific value of fuel type i in year y	45.54GJ/t	The average net calorific value of diesel per year during the 1 <sup>st</sup> CP. /NCV/MR/
$EF_{CO_2,i,y}$	Weighted average CO <sub>2</sub> emission factor of fuel type i in year y	0.0741tCO <sub>2</sub> /GJ	The average CO <sub>2</sub> emission for diesel per year during the 1 <sup>st</sup> CP. /MR/

The procedure for calibration, accuracy and maintenance of monitoring equipment and the responsibilities are clearly mentioned in section B.7 of the revised PDD.

The PP had a team to maintain and operate the project activity and monitor the parameters required by the methodology. A brief description of responsibilities of the members of the team is included in the revised PDD.

The meters will be installed in accordance with the national standard and the calibration of the meters will be conducted by qualified organization and in compliance with the national standard. /CM/

Data monitored for CDM purposes will be aggregated, summarized, calculated and recorded until two years after the end of the crediting period. Therefore the monitoring plan can be implemented and all monitoring arrangements are feasible within the project design.

Based on TÜV NORD's local and sectoral knowledge, the measurement methods, recording procedures, meter maintenance and trouble-shooting procedures described in the monitoring plan can fully meet the requirements of the CDM methodology.

The validation team has duly assessed all the required changes due to the upgraded methodological requirements and the re-assessment of the baseline. The validation team has concluded that

- all necessary changes have been appropriately reflected in the updated PDD,
- the monitoring plan in the PDD is in compliance with the applied monitoring methodology ACM0018 version 03.0.
- the monitoring arrangements described in the revised PDD can be implemented and are feasible within the project design.

## 5.10 Calculation of GHG Emission Reductions

The calculation of ERs is done as per the applied methodology (ACM0018 ver.03.0). All changes due to the upgraded methodology and the re-assessment of the baseline have been considered appropriately. The calculation in the Excel spreadsheet and

the corresponding calculation tables in the PDD have been checked and no mistakes have been identified. The estimation of emission reductions for the 2<sup>nd</sup> crediting period is deemed plausible and conservative.

### **5.11 Crediting Period**

As the secretariat has been notified within the specified timeframe, as detailed in table 5-1, the project's 2<sup>nd</sup> crediting period may start immediately after the expiration of the 1<sup>st</sup> one, given that all other applicable criteria are met.

It is thus confirmed that the start date 2012-12-21 and the length of the crediting period 7 years are in compliance with the project standard.

### **5.12 Environmental impacts**

Environmental impacts only need to be re-assessed with regards to their potential influence on the baseline determination. For the current case it is confirmed that the corresponding section has been correctly migrated to the revised version.

### **5.13 Local stakeholder consultation**

In line with the project standard the local stakeholder consultation is not repeated at the RCP stage. It is confirmed that the information included in the registered/approved revised PDD has been correctly transferred to the revised PDD version.

### **5.14 PDD update**

The PDD has been revised on the basis of the latest applicable template version 04.1.

In line with the requirements of the project standard only the sections of the registered PDD relating to the baseline, estimated GHG emission reductions and the monitoring plan have been updated. All other sections have basically only been migrated to version 04.1.

It has further been checked whether the information included in the PDD sections and annexes that have not been part of the registered/approved revised PDD are correct and in compliance with the project standard.

## 6 VALIDATION OPINION

A.T. Biopower Co., Ltd. has commissioned the TÜV NORD JI/CDM Certification Program (CP) to re-validate the project “A.T. Biopower Rice Husk Power Project in Pichit, Thailand” for the purpose of renewal of the crediting period. The validation is based on the relevant UNFCCC requirements.

In the course of the validation 14 Corrective Action Requests (CARs) and 3 Clarification Requests (CLs) were raised and successfully closed. In addition to this no FAR has been raised.

The review of the updated project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfillment of the stated criteria applicable for RCP.

In detail the conclusions can be summarized as follows:

- The current baseline of the project is in line with the national and/or sectoral policies and circumstances at the time of requesting renewal of crediting period.
- The monitoring plan is transparent and adequate and in line with the applicable monitoring methodology (ACM0018 ver.03.0).
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 381,544 tCO<sub>2</sub>e are most likely to be achieved within the second renewable crediting period of 7 years.

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 renewal of the crediting period.

Subang Jaya, 2014-04-30



Cheong, Chun Yuen (Robert)  
TÜV NORD JI/CDM Certification  
Program  
Validation Team Leader

Essen, 2014-04-30



Alexandra Nebel  
TÜV NORD JI/CDM Certification  
Program  
Final Approval

## 7 REFERENCES

**Table 7-1:** Documents provided by the project participant

Reference	Document
<b>/CLA/</b>	Comparative life cycle assessment of uses of rice husk for energy purpose dated 2011-04-26 by Jittima Prasara-A & Tim Grant
<b>/CM/</b>	Calibration Report for EGAT meters
<b>/CP/</b>	Chicken Production year 2010 to 2012
<b>/DWM/</b>	Distance, Weight and Moisture Test Spreadsheet year 2007 to 2012
<b>/EM1/</b>	Notification email by the PP to the UNFCCC indicating the intention to renew the crediting period, dated 2013-06-15
<b>/EM2/</b>	Confirmation email by the UNFCCC to notification dated 2013-06-18
<b>/EM3/</b>	Emails to various DIW for brick plants dated 2013-11-19,
<b>/ER/</b>	Emission reduction calculation spreadsheet
<b>/EI/</b>	Equipment & Instrument Specification <ol style="list-style-type: none"> <li>1. PEA Electricity Meters, EDM1 (Import Power)</li> <li>2. Mettler Toledo Moisture Analyser</li> <li>3. Gross Power Meter UMG505</li> <li>4. Export Energy Meter, Landis &amp; Gyr</li> </ol>
<b>/EPS/</b>	Electric Power Statistical Summary year 2007 to 2012
<b>/GEF/</b>	Thailand Grid Emission Factor 2010
<b>/LOA/</b>	Letter of Approval from DNA of Thailand dated 2007-01-30
<b>/MOC/</b>	Modalities of Communication dated 2013-11-13
<b>/MR/</b>	Monthly Report year 2007 to 2012
<b>/NCV/</b>	NCV Test Reports Year 2007 to 2012
<b>/PDD3/</b>	RCP Project Design document "A.T. Biopower Rice Husk Power Project in Pichit, Thailand" Version No. 1.0, dated 2012-06-10 RCP Project Design document "A.T. Biopower Rice Husk Power Project in Pichit, Thailand" Version No. 2.0, dated 2014-03-26 RCP Project Design document "A.T. Biopower Rice Husk Power Project in Pichit, Thailand" Version No. 3.0, dated 2014-03-26

Reference	Document
<b>/QA/</b>	Quality Manual revision 6 dated 2012-07-17
<b>/RHS/</b>	Rice Husk Surplus calculation for year 2012
<b>/RPR/</b>	Rice Production records year 2012
<b>/SBP/</b>	Summary of brick plants and usage by power plant from 2010 to 2013.
<b>/SIR/</b>	Stakeholder Interview Report dated 2014-03-24
<b>/TS/</b>	Technical Specification for Boiler, Turbine, Generator and auxiliaries
<b>/XLS/</b>	Emission reduction calculation

**Table 7-2:** Background investigation and assessment documents

Reference	Document
<b>/ACM6/</b>	ACM0006 ver.04.0- Consolidated methodology for grid-connected electricity generation from biomass residues
<b>/ACM18/</b>	ACM0018 ver.03.0- Consolidate methodology for electricity generation from biomass residues in power-only plants
<b>/CPM/</b>	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
<b>/ESWDS/</b>	Emissions from solid waste disposal sites version 06.0.1
<b>/GCP/</b>	UNFCCC: Guidelines for completing the Project Design Document Form (v. 01.0, EB66, Annex 8)
<b>/IPCC/</b>	<ul style="list-style-type: none"> <li>IPCC Good Practice Guidance &amp; Uncertainty Management in National Greenhouse Gas Inventories, 2000</li> <li>Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual</li> </ul>
<b>/KP/</b>	Kyoto Protocol (1997)
<b>/MA/</b>	Decision 3/CMP. 1 (Marrakesh – Accords & Annex to decision (17/CP.7))
<b>/PCP/</b>	Clean development mechanism project cycle procedure, version 5.0
<b>/PDD1/</b>	Registered PDD for project A.T. Biopower Rice Husk Power Project in Pichit, Thailand version 02 dated 2007-01-25
<b>/PDD2/</b>	Approved Revised PDD for project A.T. Biopower Rice Husk Power Project in Pichit,

Reference	Document
	Thailand version 05.1 dated 2012-11-28
<b>/PDDT/</b>	Project Design Document Form for CDM Project Activities (F-CDM-PDD) Version 04.1
<b>/PERT/</b>	Project and leakage emissions from road transportation of freight version 01.0.0
<b>/PRC1/</b>	Post Registration Changes Report for project A.T. Biopower Rice Husk Power Project in Pichit, Thailand version 02 dated 2012-12-04
<b>/PS/</b>	Clean development mechanism project standard, version 5.0
<b>/TEC/</b>	Tool to calculate baseline, project and/or leakage emissions from electricity consumption version 01
<b>/TEF/</b>	Tool to calculate the emission factor for an electricity system version 04.0.0
<b>/TFF/</b>	Tool to calculate project or leakage CO <sub>2</sub> emissions from fossil fuel combustion" version 02
<b>/TGO/</b>	Email from Thailand DNA on baseline and emission factor dated 2013-05-01
<b>/TVB/</b>	Methodological Tool: "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" version 03.0.1
<b>/VAL/</b>	Validation Report for CDM project "A.T. Biopower Rice Husk Power Project in Pichit, Thailand" version 02, dated 2007-03-24
<b>/VVS/</b>	Clean development mechanism Validation and Verification Standard, Version 05.0

**Table 7-3:** Websites used

Reference	Link	Organization
<b>/dnaHP/</b>	<a href="http://www.tgo.or.th/">http://www.tgo.or.th/</a>	Thailand Greenhouse Gas Management Organisation
<b>/dnaAI/</b>	<a href="http://www.mofa.go.jp/">http://www.mofa.go.jp/</a>	Climate Change Division, International Cooperation Bureau
<b>/unfccc/</b>	<a href="http://www.unfccc.int">www.unfccc.int</a>	United Nations Framework Convention on Climate Change
<b>/ipcc/</b>	<a href="http://www.ipcc.ch">www.ipcc.ch</a>	IPCC

**Table 7-4:** List of interviewed persons

Reference	Mol <sup>1</sup>		Name	Organization / Function
<b>/IM01/</b>	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Eakachai Laopa	AT Biopower / Corporate Coordinator & Senior Finance Officer
	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Suchart Potear	AT Biopower / Power Plant Manager
	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Chanapai Sahudsa	AT Biopower / Production Engineer
	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Seksan Janatarasena	AT Biopower / Fee Supply Manager
	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Natee Sithiprasasana	AT Biopower / CEO
<b>/IM02/</b>	V	<input type="checkbox"/> Mr. <input type="checkbox"/> Ms	Vivat Khositsakul	Advance Energy Plus / Managing Director
	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Jetsada Falert	Advance Energy Plus / Project Manager
	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Sarun Sritammaratch	Advance Energy Plus / Consultant
	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Tanawut Taechakraechana	Advance Energy Plus / Consultant
<b>/IM03/</b>	V	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms	Tasane Phomsaward	Stakeholder / Chief of Sub District
	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Sinlert Intarayai	Stakeholder / Village Volunteer

<sup>1)</sup> Means of Interview: (Telephone, E-Mail, Visit)



# ANNEX

- A1:** Validation Protocol
- A2:** Assessment of Applicability  
Criteria
- A3:** Statements of competence of  
involved Personnel

## ANNEX 1: VALIDATION PROTOCOL

**Table A-1: Requirements Checklist**

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<b>A. Description of Project Activity</b>				
<b>A.1. Purpose and general description of the project activity</b>				
<p>A.1.1. Is the description of the project activity in section A.1 correct ? (EB 66 Annex 8/EB 66 Annex 9)</p> <p><i>Please check whether the information given is correct with regards to the actual situation and possible changes since the registration / last update of the PDD. Please also check whether the guidelines for completing the PDD form have been followed.</i></p>	<p>/PDD3/ /PDDT/ /GCP/</p>	<p>The validation team has checked section A.1 of the updated PDD and confirms that the information provided is complete and correct with regards to the following:</p> <p><input checked="" type="checkbox"/> Section A.1 is in compliance with the guidelines for completing the PDD form <sup>/GCP/</sup>.</p> <p><input type="checkbox"/> The section A.1 of the revised PDD has been appropriately updated and reflects the actual situation. Relevant information previously included in other sections of the PDD has been considered.</p> <p>In this context the following findings have been identified: Refer to CAR A1 raised</p>	CAR A1	OK
<b>A.2. Location of the project activity</b>				
<p>A.2.1. Has the location of the project activity correctly been correctly described in section A.2?</p>	<p>/PDD3/ /PDDT/</p>	<p>The validation team has checked section A.2 of the updated PDD and confirms esp. on the basis of information gathered during the site visit that information provided is complete and correct with</p>	OK	OK

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
(EB 66 Annex 8/EB66 Annex 9)  <i>Please check whether the information given is correct with regards to the actual situation and possible changes since the registration / last update of the PDD. Please also check whether the guidelines for completing the PDD form have been followed.</i>	/GCP/	regards to the following:  <input checked="" type="checkbox"/> Section A.2 is in compliance with the guidelines for completing the PDD form <sup>/GCP/</sup> .  <input checked="" type="checkbox"/> The section A.2 of the revised PDD has been appropriately updated and reflects the actual situation with regards to the following:  <input checked="" type="checkbox"/> Host Party <input checked="" type="checkbox"/> Region / State Province <input checked="" type="checkbox"/> City / Town / Community <input checked="" type="checkbox"/> Physical/geographical location incl. Longitude/Latitude  In this context no findings have been identified:		
<b>A.3. Technology and/or measures</b>				
A.3.1. Is the description of the technology employed in the revised PDD in accordance with the real situation?  <i>The content of the registered PDD shall be compared to the content of the revised PDD and the situation observed during the site visit. In case of changes of the implemented technology this should be described in detail.</i>	/PDD3/ /GCP/	On the basis of the site visit and the desk review of the updated PDD the validation team confirms the following:  <input checked="" type="checkbox"/> Section A.3 is in compliance with the guidelines for completing the PDD form <sup>/GCP/</sup> .  <input checked="" type="checkbox"/> The technology of the project has not been changed.  <input type="checkbox"/> The description in the PDD reflects the actual situation and the section A.3 of the PDD has been migrated from the registered PDD without significant changes.  In this context the following findings have been identified:	<del>CAR-A2</del>	OK

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Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
		Refer to CAR A2 raised		
<b>A.4. Parties and project participants</b>				
<p>A.4.1. Are the names of the project participants of the registered project still consistent with the PPs as per this request for renewal of crediting period?</p> <p>(VVS § 305)</p> <p><i>It should be referred to the project specific CDM website. The PPs listed shall be compared to the PPs listed in the revised PDD.</i></p>	<p>/PDD3/ /unfccc/</p>	<p><i>Description:</i></p> <p>According to the registered PDD, the Annex I PPs are:</p> <ol style="list-style-type: none"> <li>1. Mitsubishi UFJ Securities Co., Ltd.</li> <li>2. Chubu Electric Power Co, Inc.</li> </ol> <p>The host country PP is A.T Biopower Co Ltd.</p> <p><i>Validator's action:</i></p> <p>In the revised PDD, Mitsubishi UFJ Securities Co., Ltd has been change to Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.</p> <p>Chubu Electric Power Co. Ltd has been withdrawn as Annex I PP.</p> <p>There is no change to host country PP.</p> <p>The MoC Annex 2 at UNFCCC project page was reviewed.</p> <p><i>Conclusion:</i></p> <p>The Annex I and host country PP listed in revised PDD is in accordance with UNFCCC project page.</p>	OK	OK
<b>A.5. PDD editorial aspects</b>				
<p>A.5.1. Have relevant sections of the registered PDD been updated?</p>	<p>/PDD3/ /PDD2/</p>	<p><i>Description:</i></p> <p>The revised PDD is based on the latest PDD version template (v.</p>	OK	OK

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(VVS § 303) <i>Please provide explanation whether the sections relevant for the baseline, the estimated emission reductions and the monitoring plan have been updated.</i>	/PDDT/ /ACM18/ /GCP/	4.1) which is structured different compared to the registered PDD. Especially the sections with regards to the applicability, the baseline, the emission reductions and the monitoring plan have been updated considering the latest version of the PDD template as well as the requirements of the applied methodology.  <i>Validator's action:</i>  The registered PDD as well as the revised PDD have been compared. Besides, the methodology has been checked to confirm the updated sections.  <i>Conclusion:</i>  The revised PDD is updated in accordance to the latest template version and most recent methodology.		
A.5.2. Have other sections been identified in the registered PDD which have been updated?	/PDD1/ /PDD3/ /PDDT/ /ACM6/ /ACM18/	<i>Description:</i>  The estimated emission reductions, methodology versions (applicability criteria) and the monitoring plan have been identified and updated in the revised PDD. The presentation of the PDD has been updated according to PDD template version 04.1.  <i>Validator's action:</i>  The revised PDD, registered PDD and the methodologies have been checked.  <i>Conclusion:</i>  The revised PDD is updated accordingly.	OK	OK
<b>B. Project Baseline and Monitoring Plan</b>				

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<b>B.1. Reference of the Methodology</b>				
<p>B.1.1. Which methodology/ tool has been applied in the registered PDD? Is this the latest applicable version?</p> <p>(PS, § 230 (a))</p> <p><i>The applied methodology(ies) and the tool(s) applied in the registered PDD shall be listed here. It shall be confirmed whether the latest applicable version at the time of submission of renewal of the crediting period has been applied.</i></p>	<p>/PDD1/ /ACM6/ /TA/ /ACM18/ /unfccc/</p>	<p><i>Description:</i></p> <p>The methodology applied in the registered PDD is ACM0006 version 04 “Consolidated baseline methodology for grid-connected electricity generation from biomass residues”.</p> <p>Since ACM0006 is no longer applicable for biomass power-only plant, ACM0018 version 03.0 “Electricity generation from biomass residues in power-only plant” is applied.</p> <p>The project meets all the applicability conditions and is in line with all the requirements and stipulations mentioned in applied methodology.</p> <p><i>Validator’s action:</i></p> <p>The applicability criteria are all described in the revised PDD.</p> <p>The validity of the methodology was validated by means of cross checking the reference published on the UNFCCC website.</p> <p><i>Conclusion:</i></p> <p>The revised PDD correctly quotes an applicable version of the methodology.</p>	OK	OK

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<b>B.2. Applicability of the Methodology</b>				
B.2.1. Have all applicability criteria defined in the methodology been met? (PS, §230; VVS, § 76)	/PDD3/ /ACM18/	<p><i>Description:</i></p> <p>The applied methodology for the renewal of CP is ACM0018 version 03.0.0 “Consolidate methodology for electricity generation from biomass residues in power-only plants”.</p> <p>All applicability criteria in the methodology, the applied tools or any other methodology component referred to therein are fulfilled.</p> <p><i>Validator’s action:</i></p> <p>By means of reviewing the revised PDD and the applied methodology applicability criteria.</p> <p><i>Conclusion:</i></p> <p>All applicable criteria of the applied methodology have been met.</p>	OK	OK
B.2.2. In case one or more applicability criteria have not been met, has the PP a) select another applicable methodology, b) requested deviation from the methodology? (PS, § 230 (c))	/PDD3/ /ACM18/	<p><i>Description:</i></p> <p>The applicability criteria, according to the applied methodology are listed in the section B.2 of the revised PDD.</p> <p><i>Validator’s action:</i></p> <p>All applicable criterion prescribed in the applied methodology were assessed and confirmed through on-site visit.</p> <p><i>Conclusion:</i></p> <p>Since all the applicability criteria of the methodology have been met, there is no request for clarification, revision and deviation.</p>	OK	OK



Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<b>B.3. Validity and update of the baseline</b> <i>The assessment of the continued validity and update of the baseline at the renewal of the crediting period is carried out according to the stepwise approach given in the "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period", EB 66/Annex 47.</i>				
<b>B.3.1. Baseline applied</b>				
<b>B.3.1.1. What has been identified as original/current baseline?</b> <i>Describe the chosen BL scenario. Indicate whether it is in line with the applied methodology.</i>	/PDD1/ /PDD3/ /ACM6/ /ACM18/	<p><i>Description:</i></p> <p>The original baseline identified are as follows:</p> <ol style="list-style-type: none"> <li>1. The biomass baseline is B1: The biomass is dumped or left to decay or burned in an uncontrolled manner without utilizing it for energy purposes.</li> <li>2. The power generation baseline is P4: The generation of power in existing and/or new grid-connected power plants.</li> </ol> <p>These baseline scenarios were kept for the following crediting period. The methodology applied was updated for the most recent available. All applicability criteria have been applied for the next crediting period.</p> <p><i>Validator's action:</i></p> <p>The applied methodology was reviewed by the validation team and the applicability criteria were identified during the site visit.</p> <p><i>Conclusion:</i></p>	OK	OK

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
		The baseline scenario was identified correctly and in line with the most recent available version of the applied methodology. The baseline scenario remains the same as in the first crediting period.		
<b>B.3.2. Step 1: Assess the validity of the current baseline for the next crediting period</b>  <i>The validity of the current baseline is assessed using the following Sub-steps:</i>				
<p><b>B.3.2.1. Step 1.1: Assess compliance of the current baseline with relevant mandatory and/or sectoral policies</b></p> <p>Does the current baseline comply with all relevant mandatory national and/or sectoral policies which came into effect after the submission of the project activity for validation or the submission of the previous request for renewal of the crediting period and are applicable at the time of requesting renewal of the crediting period?</p> <p>(VVS, §304, EB 66, Annex 47)</p> <p><i>If yes go to step 1.2, otherwise the baseline needs to be updated.</i></p> <p><i>Describe how this issue was validated.</i></p>	<p>/PDD1/ /PDD3/ /TGO/</p>	<p><i>Description:</i></p> <p>The baseline scenario has not been changed during the second crediting period and is in compliance with all the relevant mandatory national and/or sectoral policies. The legislation was reviewed and it was observed that there are no mandatory national and/or sectoral policies for used of rice husk biomass for power generation in Thailand..</p> <p><i>Validator's action:</i></p> <p>The applicable laws were observed and all laws which the company has to follow were presented</p> <p>The validation team has sought confirmation from the host country DNA as regards to any national policies for biomass power plant.</p> <p><i>Conclusion:</i></p> <p>The current baseline complies with all relevant mandatory national and/or sectoral policies. All applicable legislation has been taking into consideration for the renewal of the crediting period. There is no legislation for usage of rice husk for biomass power plant for the following crediting period.</p>	OK	OK

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<p><b>B.3.2.2. Step 1.2: Assess the impact of circumstances</b></p> <p>Do new circumstances exist at the time of requesting renewal of the crediting period which make the continued validity of the baseline not plausible?</p> <p>(VVS, §304, EB 66, Annex 47)</p> <p><i>Assess the impact of circumstances existing at the time of requesting renewal of the crediting period on the current baseline emissions, without reassessing the baseline scenario. If new circumstances make the continued validity not plausible, then the current baseline needs to be updated for the subsequent crediting period.</i></p> <p><i>Describe how this issue was validated.</i></p>	/PDD3/	<p><i>Description:</i></p> <p>Refer above B.3.2.1</p> <p><i>Validator's action:</i></p> <p>Refer above B.3.2.1</p> <p><i>Conclusion:</i></p> <p>Refer above B.3.2.1</p>	OK	OK
<p><b>B.3.2.3. Step 1.3: Assess whether the continuation of the use of current equipment(s) is technically possible or if rather an investment would be made.</b></p> <p>Does the remaining lifetime of the current equipment that would continue to be used exceeds the crediting period for which renewal is requested (more 7 years)?</p> <p>(VVS, §304, EB 66, Annex 47)</p> <p><i>The step should only be applied if the identified baseline in the previous crediting period was the continuation of the current /</i></p>	<p>/PDD1/ /PDD3/ /IM01/</p>	<p><i>Description:</i></p> <p>According to the registered PDD, the operation lifetime of the project is 25 years.</p> <p><i>Validator's action:</i></p> <p>The project activity has been in operation since 2005.</p> <p>The project personnel were interviewed during onsite and there are no changes to the equipment since it started operation.</p> <p>The applied tool for "Validity of the original/current baseline and to update the baseline at the renewal of a crediting period" was checked. The registered PDD and manufacturer manual of the main</p>	OK	OK

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.										
<i>pre-project practice.</i>  <i>Describe the steps taken to validate the remaining lifetime.</i>		equipment were checked for further information.  <i>Conclusion:</i>  It can be concluded the remaining lifetime of the equipment will exceed the crediting period if maintenance are correctly taking place.												
<b>B.3.2.4. Step 1.4: Assessment of the validity of the data and parameters</b>  Are all data and parameters that were only determined at the start of the (previous) crediting period and not monitored during the (previous) crediting period still valid or should they be updated?  (VVS, §304, EB 66, Annex 47)  <i>Updates should be undertaken:</i> <ul style="list-style-type: none"><li>Where IPCC default values are used, the values should be updated if any default values have been adopted and published by the IPCC;</li><li>Where emission factors, values or emission benchmarks are used and determined only once for the crediting period, they should be updated, except if the emission factors, values or emission benchmarks are based on the historical situation at the site of the project activity prior to the implementation of the project and cannot be updated because the historical emission does not exist anymore as a result of the CDM project activity</li></ul> <i>List the parameters and provide an assessment.</i>	/PDD1/ /PDD3/ /ACM6/ /ACM18/	The validation team has checked the validity of the ex-ante parameters defined in the original PDD and confirms the following:  <input type="checkbox"/> All data and parameters determined ex-ante for the 1 <sup>st</sup> crediting period are still valid.  <input checked="" type="checkbox"/> The following data and/or parameters determined ex-ante for the 1 <sup>st</sup> crediting period are no longer valid and have been updated in accordance with the “Tool to assess the validity of the original/current baseline and to update the baseline at the renewal of a crediting period”: <table><tr><th>Parameter</th><th>GWP<sub>CH4</sub></th></tr><tr><td>Description</td><td>Global warming potential for methane valid for the relevant commitment period</td></tr><tr><td>Unit</td><td>tCO<sub>2</sub>e/tCH<sub>4</sub></td></tr><tr><td>Value</td><td>25 as from 2013-01-01</td></tr><tr><td>Assessment</td><td>According to UNFCCC EB 69 Annex 3. As from 2013-01-01 the GWP<sub>CH4</sub> for 2<sup>nd</sup> commitment period will be applied as 25.</td></tr></table>	Parameter	GWP <sub>CH4</sub>	Description	Global warming potential for methane valid for the relevant commitment period	Unit	tCO <sub>2</sub> e/tCH <sub>4</sub>	Value	25 as from 2013-01-01	Assessment	According to UNFCCC EB 69 Annex 3. As from 2013-01-01 the GWP <sub>CH4</sub> for 2 <sup>nd</sup> commitment period will be applied as 25.	OK	OK
Parameter	GWP <sub>CH4</sub>													
Description	Global warming potential for methane valid for the relevant commitment period													
Unit	tCO <sub>2</sub> e/tCH <sub>4</sub>													
Value	25 as from 2013-01-01													
Assessment	According to UNFCCC EB 69 Annex 3. As from 2013-01-01 the GWP <sub>CH4</sub> for 2 <sup>nd</sup> commitment period will be applied as 25.													

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)					Draft Concl.	Final Concl.		
		Parameter	Biomass residues categories and quantities used for the selection of the baseline scenario selection and assessment of additionality.							
		Description	Biomass residues category (k)	Biomass residues type	Biomass residues source	Biomass residues fate in the absence of the project activity	Biomass residues use in project scenario			
			1	Rice husk	Off-site from an identified rice mill	Dumping and decay of residues on fields (B1)	Electricity generation on-site (P5)			
			1	Rice husk	Off-site from a biomass residues retailer	Burnt in an uncontrolled manner (B3)	Electricity generation on-site (P5)			
		Unit	Tons (dry basis)							
		Value	113,909t (Based on 1 <sup>st</sup> CP annual average quantity)							
		Assessment	The usage of biomass residues in the baseline scenario has not change since registration as described above. The additionality of the project at registration is investment barrier. Therefore has no impact to the project additionality.							
		Parameter	EF <sub>CO2,f</sub>							

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Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)			Draft Concl.	Final Concl.		
		Description		Default CO <sub>2</sub> emission factor for freight transportation activity f				
		Unit		gCO <sub>2</sub> /t km				
		Value	Vehicle class		Emission factor (gCO <sub>2</sub> /t km)			
			Light vehicles		245			
			Heavy vehicles		129			
		Assessment		The values are derived from the applied methodology.				
		Parameter		EF <sub>CO<sub>2</sub>,grid,CM,y</sub>				
		Description		CO <sub>2</sub> emission factor of the grid electricity in year y				
		Unit		tCO <sub>2</sub> e/MWh				
		Value		0.5113				
		Assessment		The value is derived from the emission factor study conducted by TGO, Thailand DNA. Therefore considered correct.				
		Parameter		EF <sub>grid,OM,y</sub>				
		Description		Operating Margin emission factor				
		Unit		tCO <sub>2</sub> e/MWh				
		Value		0.6996				

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Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)		Draft Concl.	Final Concl.
		Assessment	The value is derived from the emission factor study conducted by TGO, Thailand DNA. Therefore considered correct.		
		Parameter	EF <sub>grid,BM,y</sub>		
		Description	Build Margin emission factor		
		Unit	tCO <sub>2</sub> e/MWh		
		Value	0.4231		
		Assessment	The value is derived from the emission factor study conducted by TGO, Thailand DNA. Therefore considered correct.		
<b>B.3.3. Step 2: Update of the current baseline and the data and parameters</b> <i>This step is only applicable if any of the Steps 1.1, 1.2, 1.3 and/or 1.4 showed that the current baseline needs to be updated.</i>					
B.3.3.1. Step 2.1: Update the current baseline. Has the baseline been updated according to the latest approved version of the methodology?  (VVS, §304, EB 66, Annex 47)  <i>The procedure shall be applied in the context of the sectoral policies and circumstances that are applicable at the time of</i>	/PDD1/ /PDD3/ /ACM18/	Description:  There is no change to the current baseline, therefore no further assessment required.  The most recent version of the available baseline methodology ACM0018 version 03.0 is applied for the renewal of the crediting period. The calculation of the baseline emissions of the methodology has been updated.		OK	OK



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<i>request for renewal of the crediting period.</i>		<p>The ex-post calculated baseline, project and leakage emissions based on actual monitored data for the project activity</p> <p><i>Validator's action:</i></p> <p>The applied methodology and the renewed PDD were checked.</p> <p><i>Conclusion:</i></p> <p>The calculation of the baseline emissions has not changed in accordance with the applied methodology.</p>		
<p><b>B.3.3.2. Step 2.2: Update the data and parameters</b></p> <p>Have all data and parameters that were identified in Step 1.4 above as not valid anymore been updated?</p> <p>(VVS, §304, EB 66, Annex 47)</p> <p><i>Guidance in Step 1.4 shall be followed.</i></p>	/PDD3/	<p><i>Description:</i></p> <p>The data and monitoring parameters were revised in the monitoring plan according to the applied methodology version 03.0 CM0018 for the renewal crediting period.</p> <p><i>Validator's action:</i></p> <p>The applied methodology and the revised PDD were checked.</p> <p><i>Conclusion:</i></p> <p>The data and parameters are according to the applied methodology.</p>	OK	OK

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<b>B.4. Algorithms and/or formulae used to determine emissions reductions</b>  <i>It is assessed whether the steps taken and the equations and parameters applied in the PDD to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s).</i>				
<b>B.4.1. Are the equations applied correctly according to the applied approved methodology?</b> (VVS, §§304 (b), 306)  <i>Describe clearly the steps taken to assess whether the methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions. Further take into consideration that all estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.</i>	/PDD3/ /ACM18/ /ER/	<i>Description:</i> The equations applied for calculation are correct in accordance with the applied methodology ACM0018.  <i>Validator's action:</i> The equations stated in the revised PDD and ER spreadsheets were reviewed and compared with the applied methodology and relevant tools.  <i>Conclusion:</i> By means of document review, the equations applied for emissions calculations are according to the methodology and applied tools.	OK	OK
<b>B.4.2. In case the methodology allows for selection between options for equations or parameters it shall be determined whether adequate justification has been determined and correct equations and parameters have been used.</b> (VVS §§ 97, 98)	/PDD3/ /ACM18/	<i>Description:</i> The methodology does not link to another methodology choice. The applied methodology does not provide different approaches and choices. However, the tool to calculate the emission factor for an electricity system allows choices.  <i>Validator's action:</i>	OK	OK

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<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Ref.</b>	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidence)	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p><i>Assess the correct selection and application of methodological choices. Describe whether proper justification has been provided (based on the choice of the baseline scenario, context of the project activity and other evidence provided) and whether the correct equations and parameters have been used reflecting the relevant methodological choices.</i></p>		<p>All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;</p> <p>All values used in the PDD are considered reasonable in the context of the project activity;</p> <p>The baseline methodology have been applied correctly to calculate project emissions, baseline emissions and emission reductions;</p> <p>All estimates of the baseline emissions can be replicated using the data and parameter values provided in the revised PDD.</p> <p><i>Validator's action:</i></p> <p>The fixed valued from the IPCC and other sources were checked and its correctness was confirmed. The ex-ante calculations of project and baseline emissions. The emission reductions were checked as well and are considered correct.</p> <p><i>Conclusion:</i></p> <p>The methodology does not allow different methodological choices. To calculate the grid Emission Factor the above tool was used and it was calculated correctly according to the information provided to the verification team.</p> <p>Review of the applied methodology did not indicate any other methodological choices.</p> <p><i>Conclusion:</i></p> <p>The methodology is applicable for the project activity which the baseline line is using rice husk biomass for power generation.</p>		

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Ref.</b>	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidence)	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p>B.4.3. Have conservative assumptions been used when calculating the project emissions? (VVS, §§ 98)</p> <p><i>Describe clearly the steps taken to assess whether all the assumptions and data used by the PP are listed in the PDD including references and sources and are conservatively interpreted in the PDD.</i></p>	<p>/PDD3/ /IPCC/ /GEF/</p>	<p><i>Description:</i></p> <p>Conservative assumptions have been observed in the calculation of project emissions</p> <p>There will be grid and diesel generated electricity supply to the project activity when the plant is shut down for maintenance or during power outage. Therefore, there will be project emissions.</p> <p><i>Validator's action:</i></p> <p>The IPCC 2006 Guidelines and grid emission factor issued by host country DNA have been checked.</p> <p><i>Conclusion:</i></p> <p>All data sources and assumptions are appropriate and parameters which remain fixed throughout the crediting period are also correct, applicable to the project and will lead to a conservative estimation of emission reductions.</p>	<p>OK</p>	<p>OK</p>

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.																								
<b>B.5. Monitoring of Emission Reductions</b> <i>It is assessed whether the monitoring plan is appropriate for the project activity and in line with the applied methodology.</i>																												
<b>B.5.1. Monitoring methodology</b> (VVS, §§ 72 (e), 131, 132 (a) (i))  <i>Assess whether all applicable parameters listed in the methodology applied are included in the monitoring plan.</i>  <i>Pl. check further whether the selection of parameters not to be monitored (section B.6.2) is appropriate and in line with the applied methodology.</i>  <i>In case of different approaches can be chosen acc. to the methodology assess whether the selection of parameters is justified and correct.</i>	/PDD1/ /PDD3/ /ACM18/	<p>The validation team has checked the validity of the monitoring parameters defined in the original/revised PDD and confirms the following:</p> <p><input type="checkbox"/> The monitoring methodology applied for the previous crediting period is still valid and no changes have been carried out.</p> <p><input checked="" type="checkbox"/> The monitoring section of the revised PDD has been updated in order to be compliant with the monitoring methodology applied.</p> <p>In this context no findings have been identified:</p>	OK	OK																								
<b>Only to be assessed if the monitoring sections had to be updated in order to comply with the new methodology applied. Otherwise continue with section C.</b>  <b>B.5.2. Monitoring Parameters</b> (VVS, § 132 (a), (ii))  <i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</i>	/PDD3/ /ACM18/	<table><tr><th>Requirement</th><th>OK</th><th>Not OK</th><th>N/A</th></tr><tr><td>Label</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Data Unit</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Description</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Source of data</td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Measurement equipment / measure method</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>	Requirement	OK	Not OK	N/A	Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Source of data	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Measurement equipment / measure method	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<div>CAR-B9</div> <div>CAR-B10</div> <div>CAR-B11</div>	<div>OK</div> <div>OK</div> <div>OK</div>
Requirement	OK	Not OK	N/A																									
Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																									
Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																									
Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																									
Source of data	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>																									
Measurement equipment / measure method	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																									

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Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<p><i>For checking the use of international standards in the nomenclature, consider:</i></p> <p>a) <i>Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i></p> <p>b) <i>Values shall be directly given in SI units – or additionally to original units transferred to SI.</i></p> <p>c) <i>Short scale naming system: (Only) million = 10<sup>6</sup> and billion 10<sup>9</sup> shall be used.</i></p>		<p>Monitoring frequency <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>QA/QC procedures <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Purpose of data <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Standard format <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>SI units <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Short scale naming <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>In detail the following issues have been identified: Refer to finding CAR B9, CAR B10 and CAR B11</p>		

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<p>B.5.3. Are the means of monitoring of all parameters contained in the monitoring plan feasible within the project design?</p> <p>(VVS, §§ 132 (b) (i), 133 (b))</p> <p><i>Describe the steps undertaken to assess whether the monitoring arrangements described in the monitoring plan are feasible within the project design.</i></p>	<p>/PDD3/ /ACM18/</p>	<p><i>Description:</i></p> <p>All the means of monitoring of all parameters contained in the monitoring plan have being observed during the site visit as the project is already in activity. The parameters are all feasible within the project design</p> <p>The parameter contained in the monitoring is feasible. It has a label, data unit, description, source of data, measurement equipment, monitoring frequency and QA/QC procedures.</p> <p><i>Validator's action:</i></p> <p>Section B.7.1 of PDD has been reviewed that include the necessary and relevant information.</p> <p><i>Conclusion:</i></p> <p>Refer to finding CAR B12</p>	CAR-B12	OK
<p>B.5.4. Is it likely that the monitoring arrangements described in the PDD can properly be implemented in the context of the project activity?</p> <p>(VVS, § 132 (b) (i))</p> <p><i>Assess whether the described monitoring arrangements are sufficient and realistic to enable a thorough monitoring. Pl. consider also special monitoring conditions, e.g. downtimes of monitoring equipment etc.</i></p>	<p>/PDD3/ /ACM18/ /IM01/</p>	<p><i>Description:</i></p> <p>The project has been put into operation successfully over the last years and emission reduction has been issued which can prove that the monitoring arrangements have been done well by the project owner. The changes regarding the methodologies' version updating were all considered for the new crediting period.</p> <p><i>Validator's action:</i></p> <p>The validation team has conduct interviews and inspect the project activity monitoring system during the on-site visit</p> <p><i>Conclusion:</i></p>	OK	OK



Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
		The monitoring arrangements described in the revised PDD can be properly implemented in the context of the project activity.		
<p>B.5.5. Are the QA/QC procedures appropriate sufficient to ensure the emission reductions achieved from the project activity can be reported ex-post and verified?</p> <p>(VVS, § 132 (b) (ii))</p> <p><i>Please consider the description given in section B.7.2. Describe which QA/QC provisions are considered. Address Quality Management System provisions, calibration and maintenance of equipment. Address further any review procedures.</i></p>	<p>/PDD3/ /ACM18/ /IM01/</p>	<p><i>Description:</i></p> <p>The QA/QC procedure has been strictly conducted according to the revised Monitoring Plan described in the updated PDD. The monitoring plan can be implemented with regard to the description of QA/QC procedures. The procedures were revised and are considered correct by the validation team.</p> <p><i>Validator's action:</i></p> <p>During the on-site visit, interviews were conducted and the procedures are reviewed.</p> <p><i>Conclusion:</i></p> <p>QA/QC procedures have been described in the revised PDD and it is appropriate to ensure the emission reductions achieved from the project activity can be reported ex-post and verified</p>	OK	OK
<p>B.5.6. Are procedures identified for data management?</p> <p>(VVS, § 132 (b) (ii))</p> <p><i>Check whether appropriate provisions are considered for data management including responsibilities, what records to keep, storage area of records and how to process performance documentation</i></p> <p><i>Check further the data archiving provisions for the project activity and ensure that provisions are made to archive data for the whole crediting period + 2 years.</i></p>	<p>/PDD3/ /ACM18/ /IM01/</p>	<p><i>Description:</i></p> <p>All relevant data are collected and stored during the whole monitoring period</p> <p><i>Validator's action:</i></p> <p>The validation team has reviewed the respective section of revised PDD and interviews conducted on data management.</p> <p><i>Conclusion:</i></p> <p>The procedures of data collection have not changed from the</p>	CAR-B13	OK

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
		previous crediting period.  All necessary data management procedures were implemented as described in revised PDD.  However refer to CAR B13 raised		
<b>C. Duration of the Project/ Crediting Period</b> <i>It is assessed whether the temporary boundaries of the project are clearly defined.</i>				
C.1. What is the current crediting period?	/PDD1/ /unfccc/	<i>Description:</i>  The current monitoring period is 2005-12-20 to 2012-12-21  <i>Validator's action:</i>  The project page at UNFCCC was checked for the current monitoring period.  <i>Conclusion:</i>  The current monitoring period is listed in UNFCCC project page.	OK	OK
C.2. Has the PP informed the CDM Secretariat about the intention to request renewal of crediting period 270 to 180 days prior to expiration of the current crediting period? Has an updated PDD been submitted?  (PCP, § 244)	/EM1/ /EM2/ /PDD3/	<i>Description:</i>  The PP has submitted notification for renewal of CP to UNFCCC secretariat on 2013-06-15 and within the 270 to 180 days period prior to expiration of current CP.  An updated PDD has been submitted with the notification.  <i>Validator's action:</i>  Review copy of the email notification and updated PDD.	OK	OK

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Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
		<p><i>Conclusion:</i></p> <p>By means of document review, the PP has submitted the notification within 270 to 180 days.</p>		
<p>C.3. Is the start and end date of the renewed crediting period clearly defined and reasonable?</p> <p><i>Check whether the envisaged starting date of the crediting period is realistic, taking into account the end date of the last crediting period.</i></p>	/PDD3/	<p><i>Description:</i></p> <p>The start of the crediting period is 2012-12-21 the next day after the end of the 1<sup>st</sup> CP date or the date of UNFCCC approval (if it happens later).</p> <p><i>Validator's action:</i></p> <p>The revised PDD has been checked as well as the sent email informing the intention of crediting period renewal</p> <p>The date stated in the revised PDD is reviewed and is correct.</p> <p><i>Conclusion:</i></p> <p>The start of the crediting period is correctly defined in the PDD.</p>	OK	OK

## ANNEX 2: ASSESSMENT OF APPLICABILITY CRITERIA

**Table A-2:** Assessment of Applicability Criteria (VVS §§ 70-76)

Applicability Criteria	Evidence used	met	not met	N/A	Assessment of validation team (results and means of assessment)
#1: This methodology is applicable to project activity that generates electricity in biomass-residue (co-)fired power-only plants.	/PDD1/ /IM01/	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The project utilised biomass residues of rice husks to generate electricity. This is checked during the onsite visit.
#2a: The installation of new biomass residue (co-)fired power-only plants at a site where currently no power generation occurs (greenfield power project)	/PDD1/ /IM01/ /unfccc/	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	At the time of registration, the PA is a new biomass residue fired power-only plant at the site. The project owner was interviewed during onsite and cross checked with registered PDD.
#2b: The installation of new biomass residues (co-)fired power-only plants, which replace or are operated next to existing power-only plants fired with fossil fuels and/or biomass residues (power capacity expansion project)	/PDD1/ /IM01/	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The project activity is a newly installed biomass residue power plant in accordance to the registered PDD. This is confirmed during onsite inspection. Therefore not applicable.
#2c: The improvement of energy efficiency of existing biomass residues (co-)fired power-only plants (energy efficiency improvement projects), which can also lead to a capacity expansion, for example by retrofitting the existing plant	/PDD1/ /IM01	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The project activity is a newly implemented according to the registered PDD. This is confirmed during onsite inspection. Therefore not applicable.
#2d: The improvement of energy efficiency of existing biomass residues (co-)fired power-only plants (energy efficiency improvement projects), which can also lead to a capacity expansion, for example by retrofitting the existing plant	/PD1/ /IM01/	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The project activity is a newly implemented according to the registered PDD. This is confirmed during onsite inspection. Therefore not applicable.

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#2e: The total or partial replacement of fossil fuels by biomass residues in an existing power only plant or in a new power-only plant that would have been built in the absence of the project (fuel switch project), e.g by increasing the share of biomass residues use as compared to the baseline, by retrofitting and existing plant to use biomass residues, etc.	/PDD1/ /IM01/	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The project activity is a newly implemented according to the registered PDD. This is confirmed during onsite inspection. Therefore not applicable.
#3: The biomass residues used in the project activity may be produced on-site (e.g if the project activity is based on the operation of a power plant located in an (agro-) industrial plant generating the biomass residues), or they can be obtained off-site from the nearby area, specific suppliers or purchased from a market	/MR/ /DWM/ /IM01/	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The biomass residues used by the PA are obtained off-site from nearby farms and rice husks suppliers. The rice husk supply records were reviewed and operational personnel interviewed during onsite visit.
#4: No other biomass type than biomass residues, as defined above, are used in the project plant.	/MR/ /IM01/	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The biomass residues used are rice husk. There are no other types used by PA. This is confirmed during onsite visit by means of inspection and document review.
#5: Fossil fuel may be co-fired in the project plant. However, the amount of fossil fuels co-fired shall not exceed 80% of the total fuel fired on an energy basis.	/MR/ /IM01/	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A small quantity of diesel fuel is used for start-up and the amount used does not exceed 80% of the total fuel fired. The diesel records were checked.

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#6: For project that use biomass residues from a production process (e.g production of sugar or wood panel boards), the implementation of the project shall not result in an increase of the processing capacity of raw input (e.g. sugar, rice, logs, etc.) or in other substantial changes (e.g product change) in this process.	/PDD1/ /DWM/ /EM3/ /RPR/ /RHS/ /MR/ /IM01/	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The rice husk residues are obtained off-site from rice mills and directly from fields.
#7: The biomass residues used by the project facility should not be stored for more than one year.	/MR/ /IM01/	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	An inspection and document review was conducted during onsite visit and it can be confirmed that the biomass residues are not stored for more than 1 year.
#8: Projects that chemically process the biomass residues prior to combustion (e.g by means of esterification, fermentation and gasification) are not eligible under this methodology. The biomass residues can however be processed physically such as by means of drying pelletization and briquetting.	/PDD1/ /IM01/	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The biomass residue combusted by the project activity does not required to be chemically process prior to combustion. This was checked and confirmed during onsite visit. The biomass residue is fed directly to the biomass boiler via a conveyer system. Therefore not applicable.
#9: No power and heat plant operates at the project site during the crediting period	/PDD1/ /IM01/	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The project activity is the only power-only plant located at the site and operates during the crediting period. A site inspection was conducted during onsite visit that confirm the PA is the only project.

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<p>#10: If any heat is generated for purposes other than power generation (e.g. heat which is produced in boilers or extracted from the header to feed thermal loads in the process) during the crediting period or was generated prior to the implementation of the project activity, by any on-site or off-site heat generation equipment connected to the project site, the following conditions should apply:</p> <p>(a) The implementation of the project activity does not influence directly or indirectly the operation of the heat generation equipment, i.e. the heat generation equipment would operate in the same manner in the absence of the project activity;</p> <p>(b) The heat generation equipment does not influence directly or indirectly the operation of the project plant (e.g. not fuels are diverted from the heat generation equipment to the project plant); and</p> <p>(c) The amount of fuel used in the heat generation equipment can be monitored and clearly differentiated from any fuel used in the project activity.</p>	/PDD1/ IM01/	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	There is no heat generation equipment prior to the project activity implementation in accordance to the registered PDD. This was checked during the onsite visit and interview of project owner. Therefore not applicable
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<p>\$11: In the case of fuel switch project activity, the use of biomass residues or the increase in the use of biomass residues as compared to the baseline scenario is technically not possible at the project site without a capital investment in:</p> <ul style="list-style-type: none"> <li>• The retrofit or replacement of existing heat generators/boiler; or</li> <li>• The installation of new heat generators/boilers; or</li> <li>• A new dedicated biomass residues supply chain established for the purpose of the project (e.g. collecting and cleaning contaminated new sources of biomass residues that could otherwise not be used for energy purposes);</li> <li>• Equipment for preparation and feeding of biomass residues</li> </ul>	/PDD1/ /IM01/	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The project activity is a newly implemented biomass residue power-only plant according to the registered and not a fuel switch PA.
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## ANNEX 3: STATEMENTS OF COMPETENCE OF INVOLVED PERSONNEL



**Statement of Competence**  
Appointment and authorization according to the procedures  
of the TÜV NORD JI/CDM Certification Program

**Mr. Robert Cheong**


SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification)	2015-04-01
VCS / ISO 14064-2	Senior Assessor (Validation, Verification)	2015-04-01

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewable Energies
2.1	Electricity Distribution
3.1	Energy Demand
13.1	Waste Handling and Disposal

128 – Rev. 3, Date: 2012-04-02

128\_S01-F002\_2012-04-02\_rev3.doc      S01-F003 rev2 / 2012-04-05



**Statement of Competence**  
Appointment and authorization according to the procedures  
of the TÜV NORD JI/CDM Certification Program

**Mr. Nicholas Chee Yin Cheong**


SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification)	2015-05-11
VCS / ISO 14064-2	Lead Assessor	2015-05-11

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewable Energies
13.1	Waste Handling and Disposal

156 – Rev. 3, Date: 2012-05-12

156\_S01-F002\_2012-05-12\_rev3.doc      S01-F003 rev2 / 2012-04-05



**Statement of Competence**  
Appointment and authorization according to the procedures  
of the TÜV NORD JI/CDM Certification Program

**Mr. Vasasmith Nattapon**

SCHEME	STATUS	VALID UNTIL
CDM	Assessor (Validation, Verification)	2014-11-01
VCS	Assessor	2014-11-01

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
13.1	Waste handling and disposal

160 – Rev. 2, Date: 2011-12-07

160\_S01-F003\_2011-12-07\_rev2.doc      S01-F003 rev6 / 2015-04-19



R-No.: MY-RCP 11/068 – 11/560

**Statement of Competence**  
Appointment and authorization according to the procedures  
of the TÜV NORD JI/CDM Certification Program

**Mr. Alex Bin Semail Timba**

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.1	Thermal energy generation	

291 – Rev. 0, Date: 2011-09-17

291\_S01-F003\_2011-09-17\_rev0

S01-F003 rev1 / 2011-09-02

**Statement of Competence**  
Appointment and authorization according to the procedures  
of the TÜV NORD JI/CDM Certification Program

**Mr. Rainer Winter**

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2016-07-01
Ji	Senior Assessor Technical Reviewer	2016-07-01
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2016-07-01

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.1	Thermal Energy Generation	
1.2	Renewable Energies	1.2.1 Hydro 1.2.2 Wind 1.2.3 Geothermal 1.2.4 Solar 1.2.5 Tidal
4.1	Cement Sector	
4.3	Iron and Steel	
4.5	Waste Heat Recovery	
4.8	Glass	
5.1	Chemical Process Industries	
9.1	Metal Production	
11.1	Chemical Process Industries	
11.2	GHG Capture and Destruction	
12.1	Chemical Process Industries	
13.1	Waste Handling and Disposal	13.1.1 Waste Management

003 - Rev. 7, Date: 2013-07-02

003\_S01-VA060-F20\_2012-10-12\_rev7.doc

S01-VA060-F20 rev3 / 2012-10-25

**Statement of Competence**  
Appointment and authorization according to the procedures  
of the TÜV NORD JI/CDM Certification Program

**Ms. Alexandra Nebel**

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2016-03-03
Ji	Senior Assessor Technical Reviewer	2016-03-03
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2016-03-03

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
14.1	Forestry

095 - Rev. 4, Date: 2013-03-04

095\_S01-VA060-F20\_2013-03-04\_rev4.doc

S01-VA060-F20 rev3 / 2012-10-25

