



# POA VALIDATION REPORT

INVESTMENT AND TRADE  
CONSULTANCY COMPANY LIMITED

## VALIDATION OF THE BIOMASS HEAT GENERATION DEVELOPMENT PROGRAMME OF ACTIVITIES MANAGED BY INTRACO

BUREAU VERITAS CERTIFICATION

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<p>Summary:</p> <p>Bureau Veritas Certification has made the validation of the "Biomass Heat Development Programme of Activities Managed by INTRACO" of Investment and Trade Consultancy Company Limited (INTRACO) located in Viet Nam on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.</p> <p>The validation scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report &amp; Opinion, was conducted using Bureau Veritas Certification internal procedures.</p> <p>The first output of the validation process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.</p> <p>In summary, it is Bureau Veritas Certification's opinion that the Programme of Activities correctly applies the baseline and monitoring methodology AMS-I.C. Version 19 and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.</p>	

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Project title:  <b>Biomass Heat Development Programme of Activities Managed by INTRACO</b>	
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**Indexing terms**

Work approved by:

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**Abbreviations change / add to the list as necessary**

BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CME	Coordinating / Managing Entity
CO <sub>2</sub>	Carbon Dioxide
DNA	Designated National Entity
DOE	Designated Operational Entity
DR	Document Review
EIA	Environmental Impact Assessment
ERPA	Emission Reductions Purchasing Agreement
EVN	Electricity Vietnam Group
FSR	Feasibility Study Report
GHG	Green House Gas(es)
GSP	Global Stakeholder Process
I	Interview
IRR	Internal Rate of Return
LoA	Letter of Approval
MoV	Means of Verification
MP	Monitoring Plan
NGO	Non Government Organization
ODA	Official Development Assistance
PoA-DD	Programme of Activities Design Document
CPA-DD	CDM Programme Activities Design Document
PP	Project Proponent (Project owner)
PPA	Power Purchase Agreement
PPC	People Provincial Committee
RI	Report Issuance
SV	Site visit
UNFCCC	United Nations Framework Convention for Climate Change
VND	Vietnamese Dong (Vietnamese Currency)
VVM	Validation and Verification Manual



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## 1 INTRODUCTION

INTRACO (hereafter referred as “the CME”) has commissioned Bureau Veritas Certification to validate its “Biomass Heat Development Programme of Activities Managed by INTRACO” (hereafter called “the PoA”) in Vietnam.

This report summarizes the findings of the validation of the PoA, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

### 1.1 Objective

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

UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

### 1.2 Scope

The validation scope is defined as an independent and objective review of the PoA-DD, the generic CPA-DD and the associated specific CPA-DD, the PoA's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

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



### 1.3 Validation team

The validation team consists of the following personnel:

FUNCTION	NAME	CODE HOLDER*	TASK PERFORMED
Lead Verifier	Ram Desai	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input checked="" type="checkbox"/> RI
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Technical Specialist	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
Financial Specialist	Sushil Budhia	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
Internal Technical Reviewer (ITR)	Ashok Mammen	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DR <input type="checkbox"/> SV <input checked="" type="checkbox"/> RI
Specialist supporting ITR	N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI

\*DR = Document Review; SV = Site Visit; RI = Report issuance

## 2 METHODOLOGY

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a validation protocol was customized for the project, according to the version 01.2 of the Clean Development Mechanism Validation and Verification Manual, issued by the Executive Board at its 55<sup>th</sup> meeting on 30/07/2010. The protocol shows, in a transparent manner, criteria (requirements), means of validation and the results from validating the identified criteria. The validation protocol serves the following purposes:

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

The completed validation protocol is enclosed in **Appendix A** to this report.



## 2.1 Review of Documents

The PoA-DD version 01 **/Ref-1/** the generic CPA-DD **/Ref-2/** and specific CPA-DD version 01 **/Ref-3/** submitted by the CME and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for Completing the Programme of Activities Design Document (PoA-DD), Approved methodology, Kyoto Protocol, Clarifications on Validation Requirements to be Checked by a Designated Operational Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests, the CME revised the PoA-DD, the generic CPA-DD and specific CPA-DD, and resubmitted it on 19/06/2012.

The validation findings presented in this report relate to the PoA as described in the PoA-DD Version 03 **/Ref-4/**, the generic CPA-DD Version 04 **/Ref-5/** and the specific CPA-DD Version 04 **/Ref-6/**.

## 2.2 Follow-up Interviews

On 10/11/2011 and 11/11/2011, the validation team performed interviews with the PoA's stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the CME and Tin Thanh Industrial Electricity and Steam Company Limited (CPA Operator) were interviewed (see **Section 6 – References**). The main topics of the interviews are summarized in Table 1.

Table 1: Interview topics

Interviewed organization	Interview topics
Tin Thanh Industrial Electricity and Steam Company Limited (CPA Operator)	<ul style="list-style-type: none"> <li>➤ CPA background and CDM consideration</li> <li>➤ CPA technology, operation, maintenance and monitoring capability</li> <li>➤ CPA monitoring and management plan</li> <li>➤ Stakeholder consultation process</li> <li>➤ CPA approval status (EIA, FSR, ...)</li> <li>➤ Hydro electric power development in Vietnam</li> <li>➤ Government policies related to hydro electric power projects development</li> </ul>
Local Stakeholder (Representative of local people affected by Project)	<ul style="list-style-type: none"> <li>➤ CPA background in details</li> <li>➤ Stakeholder comments on CPA development</li> <li>➤ Social and environment impact of the CPA</li> </ul>
Investment and Trade Consultancy Company Limited (CME)	<ul style="list-style-type: none"> <li>➤ Applicability of selected methodology</li> <li>➤ Baseline scenario identification</li> <li>➤ Emission reductions calculation</li> <li>➤ Emission reductions monitoring plan</li> <li>➤ Investment analysis for additionality</li> </ul>



## 2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the project design.

Corrective Action Requests (CAR) is issued, where:

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

The validation team may also use the term Clarification Request (CL), if information is insufficient or not clear enough to determine whether the applicable the CDM programme of activity requirements have been met.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in **Appendix A**.

## 2.4 Internal Technical Review

The validation report underwent an Internal Technical Review (ITR) before requesting registration of the project activity.

The ITR is an independent process performed to examine thoroughly that the process of validation has been carried out in conformance with the requirements of the validation scheme as well as internal Bureau Veritas Certification procedures.

The Lead Verifier provides a copy of the validation report to the reviewer, including any necessary validation documentation. The reviewer reviews the submitted documentation for conformance with the validation scheme. This will be a comprehensive review of all documentation generated during the validation process.

When performing an Internal Technical Review, the reviewer ensures that:

- The validation activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.



- The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs, CLs and FARs during the validation exercise, review of sample documents.

The reviewer compiles clarification questions for the Lead Verifier and Validation Team and discusses these matters with Lead Verifier.

After the agreement of the responses on the 'Clarification Request' from the Lead Verifier as well as the PP(s) the finalized validation report is accepted for further processing such as uploading on the UNFCCC webpage.

### 3 VALIDATION CONCLUSIONS

In the following sections, the conclusions of the validation are stated.

The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are described in the Validation Protocol in **Appendix A**.

The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in **Appendix A**. The validation of the Project resulted in **03** Corrective Action Requests (CARs) and **02** Clarification Requests (CLs) and no Forward Action Requests (FARs).

The CARs and CLs were closed based on adequate responses from the Project Participant(s) which meet the applicable requirements. They have been reassessed before their formal acceptance and closure.

The numbers between brackets at the end of each section correspond to the VVM paragraph.

#### 3.1 Approval (49-50)

Vietnam (host country) is the only party involved in the Project activity and is the host party. The CME has obtained approval from DNA of Vietnam i.e. Ministry of Natural Resources and Environment. The CME has provided a copy of the Letter of approval - LoA (vide Letter No: 41/2011/DMHCC-BCD – dated 21/09/2011) **/Ref-7/** to the validation team. The validation team confirmed the authenticity of the Letter of approval by reviewing the original letter after site visit.



The LoA indicates that Vietnam is a Party to the Kyoto Protocol and has ratified the Kyoto Protocol on 25/09/2002. The approval given by the DNA is for voluntary participation in the proposed CDM PoA. The LoA is not required at CPA level.

The LoA refers to the precise proposed CDM PoA title in the PoA-DD being submitted for the registration. Also the LoA confirms that proposed CDM PoA will contribute the sustainable development in the host country Vietnam.

The LoA from DNA Vietnam is unconditional with respect to the Party to the Kyoto Protocol, voluntary participation and project contribution to the sustainable development.

Validation team confirms that the LoA from the DNA Vietnam is in accordance with para.49 – 50/VVM

### **3.2 Participation (54)**

As mentioned in above section 3.1, it is confirmed that Vietnam has ratified the Kyoto Protocol and it is further verified through web-site of UNFCCC and the link to the web-site has been given as below  
<http://maindb.unfccc.int/public/country.pl?country=VN>

Hence, validation team concluded that the participation is in accordance with para.54/VVM.

### **3.3 PoA design document (57)**

The Validation team hereby confirms that the PoA-DD, Typical CPA-DD and a real case CPA-DD (Golden Hope) complies with the latest forms of guidance documents for completion of PoA-DD, Typical CPA-DD and Real Case CPA-DD. Further it is confirmed that The PoA-DD Version 01 submitted by the CME for web-hosting was assessed by validation team for completeness and found that it is meeting the requirements laid down by “Programme of Activities Design Document form” version 01.0 [1].

The revised version of the PoA-DD is also found in accordance with “Programme of Activities Design Document form” version 01.0 [1].

Hence, validation team confirmed that the PoA-DD is in accordance with para.57/VVM.



### 3.3.1 Specific PoA Requirements (167)

#### a) Eligibility Criteria for Enrolling CPA

According to the “Clarifications regarding the procedures for registration of a Programme of Activities as a single CDM Project Activity and issuance of Certified Emission Reductions for a Programme of Activities” Version 01 [2], a full additionality assessment is not required in the context of component project activities (CPA), rather the confirmation of additionality for CPAs should be concluded by means of the eligibility criteria.

Biomass Heat Development Programme of Activities Managed by INTRACO project clearly establishes eligibility criteria for inclusion of a project as a CPA under the PoA in section A4.4.2 of PoA-DD. There are 14 eligibility criteria identified and established by CME. The validation team has validated these criteria and found that selected criteria are in line with the CDM PoA requirement “Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities” Version 01 [3] as well as the approved methodology used by the CME to develop this PoA. List of criteria validated by the validation team is as given below

The eligibility criteria for inclusion of CPAs amongst others, require that no other CPA or CDM project involving generation of heat using biomass is already registered or under validation in the selected geographical area i.e. Vietnam

- (1) The boundary of the implemented CPA is within the geographical territory of Vietnam.
- (2) Confirmation that the CPA is not registered or being registered as a stand-alone CDM project outside of this PoA, a bundled CDM Project Activity or another registered PoA which leads to double counting of emission reductions and confirmation on the unique identification of the CPA location.
- (3) The proposed CPA shall include Project activities of biomass heat generation system from any of the following Project Scenarios only:
  - (a) *Project scenario 1: Biomass fired thermal energy generation in Greenfield Projects or as a Replacement of existing fossil fuel fired equipment (may use fossil fuel as backup fuel).*



- (b) Project scenario 2: Fuel switching from fossil fuel to biomass by modification including retrofit of an existing facility. (may use fossil fuel as backup fuel)*
- (c) Project scenario 3: Addition of renewable energy unit at an existing renewable energy facility. (may use fossil fuel as backup fuel)*
- (4) The start date of the CPA shall not be before the commencement of validation of the PoA as a whole (date the PoA was published for global stakeholders comment on the website of the UNFCCC 11/10/2011)
- (5) The CPA shall meet all the application of the methodology AMS-I.C. Version 19
- (6) The additionality for each CPA is demonstrated by any one of the following approaches:
- (a) Approach 1: "Guidelines for Demonstrating Addittonality of Microscale Project Activities" (Version 03, EB 63, Annex 23)*
- (b) Approach 2: As per Attachment A to Appendix B of the "Simplified Modalities and Procedures for small-scale CDM Project activities" (Version 08, EB 63, Annex 24), additionality is demonstrated only by Investment barrier route.*
- (7) A CPA level local stakeholder's consultation and environmental impact analysis has to be carried out prior to inclusion
- (8) Confirmation on involvement of public funding or ODA from Annex I Parties in CPA
- (9) Target group set by the CME for selected CPAs that the CPA shall only utilize renewable biomass which are in line with the "Definition of Renewable Biomass" (EB 23, Annex 18) and "Glossary of CDM terms" (Version 05), Charcoal shall not be used at all by the CPA activity and Information on Biomass availability in the region of the CPA shall be available.
- (10) The CPA Operator has signed a valid contractual agreement with the CME which permits its participation and inclusion in the PoA and specifies the duties and responsibilities of a CPA Operator and the acceptance of the terms and conditions of the PoA including the conditions related to sampling requirements for a PoA in accordance with the approved guidelines / standard from the Board pertaining to sampling and surveys



- (11) The CPA in aggregate meets the small-scale or micro-scale threshold criteria and remains within those threshold throughout the credit period of the CPA.
- (12) Confirmation that the CPA is not a de-bundled component of another large-scale CPA or CDM project activity as per latest guidance given by the CDM Executive Board
- (13) Confirmation on the crediting period of the CPA which shall not exceed the length of the PoA (28 years from the date of the PoA approved by the Board to be registered) regardless of the time of inclusion of CPA in the PoA
- (14) The CPA activities involve in installation of biomass equipments for displacement of the existing fossil fuel equipment or retrofit/modify an the existing fossil fuel equipment for biomass energy generation are only eligible if the remaining lifetime of the equipment estimated is more than the crediting period of the CPA activity

Based on the detailed validation of Eligibility criteria for inclusion of PoA, the validation team herewith confirms that:

- The eligibility criteria are verifiable and are in compliance with EB 65 Annex 3.
- The eligibility criteria established by the CME are sufficiently objective and Comprehensive enough to permit the assessment of the inclusion of CPAs in the PoA.

#### **b) Operational and Management Arrangement for the PoA (166)**

As described in the PoA-DD, the CME is responsible for the management of PoA and monitoring plan for each individual CPA. Operational management plan presented by the CME in the PoA-DD, Version 04 dated 18/06/2012 **/Ref-4/** is found comprehensive and is in compliance with “Procedure for Registration of a Programme of Activities as a single CDM project activity and issuance of certificate emission reduction for a Programme of Activities”, Version 04.1 **[4]**.

The CME has defined roles and responsibilities for various roles in the management of this PoA and it is evident that Monitoring plan for the PoA is established and comprises of important elements as listed below:



- (I) A record keeping system for each CPA under the PoA - *CME has established a record keeping system wherein each CPA will be identified by a unique identification number and at the time of CPA inclusion*
- (II) A system /procedure to avoid double accounting e.g. to avoid the case of including a new CPA that has been already registered either as a CDM project activity or as a CPA of another PoA – *CME has established a record keeping system wherein each CPA will be identified by a unique identification number and at the time of CPA inclusion CME will cross check with UNFCCC, CD4 CDM Data and VCS registry to ensure that the CPA is not registered either single CDM project or part of PoA. Also CME has made a provision to obtain declaration in writing as a Mandate from CPA operators that "there is no double counting of CERs from this CPA under any CDM Project or CPA in another PoA". This is found in compliance with EB 55 Annex 38 Para 6(i).*
- (III) The SSC CPA included in the PoA is not a de-bundled component of another CDM programme activity (CPA) or CDM project activity. – *CME has established an arrangement to ensure that CPA included in the PoA is not a de-bundled component of another PoA or CDM project activity. As per the eligibility check condition no 12 above, CME will verify each CPA against Para 8,9 and 10 of EB 54 Annex 13.*
- (IV) The CPA Operators are aware and have agreed that their activity is being subscribed to the PoA – *CME will be signing Contract with each CPA operator whose CPA will be included in the PoA.*

CME has established a comprehensive, CME Management manual **/Ref-8/** to comply with the eligibility criteria. This manual describes a management system such as: (i) organization chart, (ii) responsibility of each position, (iii) training, (iv) document control, (v) procedures for technical review of CPA inclusion, (vi) procedures for avoiding double counting, (vii) non-conformity and corrective & preventive actions, (viii) Internal Audit Review, (ix) Management Review, (x) Continuous Improvement, etc. Hence Validation team concluded that the operational and management arrangement for this PoA is in line with applicable EB guidelines as well as VVM Para 166

### **c) Validation of the First Specific CPA-DD (Golden Hope CPA)(168)**

The Golden Hope CPA complies with all the eligibility criteria and therefore is eligible to be included under the PoA. The justifications are as follows:



- (1) The new project fulfil all applicability conditions of AMS I.C methodology, version 19;
- (2) There is no enforced regulation in Vietnam that requires to install Biomass based boiler for het / steam generation for commercial or industrial use;
- (3) The CPA is in compliance with all laws and regulations in Vietnam,
- (4) The CPA is approved by INTRACO as the managing entity;
- (5) The CPA has total installed rated capacity of boiler is 12 MW Thermal which is found lesser than the established capacity limit of 45 MW Thermal as per the Approved Methodology condition AMS I.C, Version 19 under Type I.

This has been further confirmed via the site visit and interview with the project participants and detailed discussion about Validation of Golden Hope CPA is provided separately in the CPA Validation Report.

### 3.4 Changes in the PoA

During the validation desk-review, the following changes were observed in the PoA-DD as compared to details mentioned in the web-hosted PoA-DD:

- 1) In the PoA-DD Version 01, the expected PoA starting date was 10/10/2011 which is the expected validation date of the PoA. In the PoA-DD Version 04, the PoA starting date was changed to 11/10/2011. The justification for the change of PoA's starting date was provided in **Section 3.7.1** below.
- 2) The contact information of the CME in **Annex 1** of the PoA-DD Version 03 was changed to: Unit 501, Thai Ha Building, No. 18/11 Thai Ha Street, Dong Da District, Hanoi, Viet Nam.

### 3.5 PoA description (64)

The PoA aims to promote biomass energy generation facilities in Vietnam by supporting the displacement of fossil fuel fired technology throughout Vietnam. The length of the PoA is taken as 28 years.

The CME will facilitate the development of CDM Programme Activities (CPAs) which are biomass based heat producing systems and their inclusion into the PoA. The CME will also act as the focal point with the CDM Executive Board in all the aspects relating to the validation,



verification, registration and issuance of carbon credits generated by the CPAs within the PoA.

With regard to the PoA, there is no difference in the national or sectoral policies between regions or provinces within the boundary of Vietnam. The CPAs under the PoA will be implemented within Vietnam geographical coordinates:

Latitude: 8°10' – 23°24' North

Longitude: 102°09' – 109°30' East

The validation team hereby confirms that the PoA description in the PoA-DD is accurate and complete in all respects and that there are no changes to the project activity/design or boundary as compared to the web-hosted PoA-DD.

### **3.6 Baseline and monitoring methodology**

#### **3.6.1 General requirement (76-77)**

The CME is responsible to check the competencies of potential CPAs before inclusion in the PoA. In order to ensure that each CPA meets all requirements, 31 eligibility criteria are defined according to approved EB standard and methodology as below:

Eligibility criteria according to AMS-I.C. “Thermal energy production with or without electricity” Version 19 [5],

- (1) This methodology comprises renewable energy technologies that supply users with thermal energy that displaces fossil fuel use. These units include technologies such as solar thermal water heaters and dryers, solar cookers, energy derived from renewable biomass and other technologies that provide thermal energy that displaces fossil fuel.
- (2) Biomass-based cogeneration systems are included in this category. For the purpose of this methodology “cogeneration” shall mean the simultaneous generation of thermal energy and electrical energy in one process. Project activities that produce heat and power in separate element processes (for example heat from a boiler and electricity from a biogas engine) do not fit under the definition of cogeneration project.



- (3) Emission reductions from a biomass cogeneration system can accrue from one of the following activities:
- (a) Electricity supply to a grid;*
  - (b) Electricity and/or thermal energy (steam or heat) production for on-site consumption or for consumption by other facilities;*
  - (c) Combination of (a) and (b).*
- (4) The total installed / rated thermal energy generation capacity of the project equipment is equal to or less than 45 MW thermal.
- (5) For co-fired systems, the total installed thermal energy generation capacity of the project equipment, when using both fossil and renewable fuel, shall not exceed 45 MW thermal.
- (6) The following capacity limits apply for biomass cogeneration units:
- (a) If the project activity includes emission reductions from both the thermal and electrical energy components, the total installed energy generation capacity (thermal and electrical) of the project equipment shall not exceed 45 MW thermal. For the purpose of calculating this capacity limit the conversion factor of 1:3 shall be used for converting electrical energy to thermal energy (i.e. for renewable energy project activities, the maximal limit of 15 MW(e) is equivalent to 45 MW thermal output of the equipment or the plant)*
  - (b) If the emission reductions of the cogeneration project activity are solely on account of thermal energy production (i.e. no emission reductions accrue from electricity component), the total installed thermal energy production capacity of the project equipment of the cogeneration unit shall not exceed 45 MW thermal;*
  - (c) If the emission reductions of the cogeneration project activity are solely on account of electrical energy production (i.e. no emission reductions accrue from thermal energy component), the total installed electrical energy generation capacity of the project equipment of the cogeneration unit shall not exceed 15 MW.*
- (7) The capacity limits specified in the above paragraphs apply to both new facilities and retrofit projects. In the case of project activities that involve the addition of renewable energy units at an existing renewable energy facility, the total capacity of the units added by the project should comply with capacity limits in paragraphs 4 to 6, and should be physically distinct from the existing units.
- (8) Project activities that seek to retrofit or modify an existing facility for renewable energy generation are included in this category.



- (9) New Facilities (Greenfield projects) and project activities involving capacity additions compared to the baseline scenario are only eligible if they comply with the related and relevant requirements in the “General Guidelines to SSC CDM methodologies”
- (10) If solid biomass fuel (e.g. briquette) is used, it shall be demonstrated that it has been produced using solely renewable biomass and all project or leakage emissions associated with its production shall be taken into account in the emissions reduction calculation.
- (11) Where the project participant is not the producer of the processed solid biomass fuel, the project participant and the producer are bound by a contract that shall enable the project participant to monitor the source of the renewable biomass to account for any emissions associated with solid biomass fuel production. Such a contract shall also ensure that there is no double-counting of emission reductions.
- (12) If electricity and/or steam/heat produced by the project activity is delivered to a third party i.e. another facility or facilities within the project boundary, a contract between the supplier and consumer(s) of the energy will have to be entered into that ensures there is no double-counting of emission reductions.
- (13) If the project activity recovers and utilizes biogas for power/heat production and applies this methodology on a stand alone basis i.e. without using a Type III component of a SSC methodology, any incremental emissions occurring due to the implementation of the project activity (e.g. physical leakage of the anaerobic digester, emissions due to inefficiency of the flaring), shall be taken into account either as project or leakage emissions.
- (14) Charcoal based biomass energy generation project activities are eligible to apply the methodology only if the charcoal is produced from renewable biomass sources provided:
- (a) *Charcoal is produced in kilns equipped with methane recovery and destruction facility; or*
  - (b) *If charcoal is produced in kilns not equipped with a methane recovery and destruction facility, methane emissions from the production of charcoal shall be considered. These emissions shall be calculated as per the procedures defined in the approved methodology AMS-III.K. Alternatively, conservative emission factor values from peer reviewed literature or from a registered CDM project activity can be used, provided that it can be demonstrated that the parameters from these are comparable*



*e.g. source of biomass, characteristics of biomass such as moisture, carbon content, type of kiln, operating conditions such as ambient temperature.*

- (15) If the energy generating equipment currently being utilised is transferred from outside the boundary to the project activity, leakage is to be considered.
- (16) In cases where the collection / processing / transportation of biomass residues is outside the project boundary CO<sub>2</sub> emissions from the collection/processing/transportation of biomass residues to the project site shall be taken into account as leakage.
- (17) The following conditions apply for use of this methodology in a project activity under a programme of activities:
- (a) In the specific case of biomass project activities the applicability of the methodology is limited to either project activities that use biomass residues or processed biomass (e.g. briquette) only or biomass from dedicated plantations complying with the applicability conditions of AM0042;*
  - (b) In the specific case of biomass project activities the determination of leakage shall be done following the general guidance for leakage in small-scale biomass project activities (attachment C of Appendix B of simplified modalities and procedures for small-scale clean development mechanism project activities; decision 4/CMP.1) or following the procedures included in the leakage section of AM0042;*
  - (c) In case the project activity involves the replacement of equipment, and the leakage from the use of the replaced equipment in another activity is neglected, because the replaced equipment is scrapped, an independent monitoring of scrapping of replaced equipment needs to be implemented. The monitoring should include a check if the number of project activity equipment distributed by the project and the number of scrapped equipment correspond with each other. For this purpose scrapped equipment should be stored until such correspondence has been checked. The scrapping of replaced equipment should be documented and independently verified.*

The above eligibility criteria are assessed by the validation team through document review and interview process. The validation team hereby confirms that these criteria are in compliance with the VVM requirements and the approved EB standard and methodology. The management system for CPA inclusion was also validated by the validation team.



Moreover, the validation did not reveal any evidence that this PoA can be seen as a diversion of ODA. It is also confirmed by the corporate resolution provided by CME /Ref-9/ about no ODA diversion from Annex-I party in the development of the PoA.

### 3.6.2 PoA boundary (80)

The boundary of the PoA is defined as the host country Vietnam. The geographical boundary of each CPA will be determined by the location of the CPA where Biomass fired boilers will be installed replacing fossil fuel fired boilers generating Steam in Baseline scenario.

CME has further defined the boundary of each CPA to be included in the PoA and as per the established criteria for CPA boundary each CPA shall comply with any of the following Project Scenarios:

- Project Scenario 1: Biomass fired thermal energy generation in Greenfield Projects or as a Replacement of existing fossil fuel fired equipment
- Project Scenario 2: Fuel switching from fossil fuel to biomass by modification including retrofit of an existing facility
- Project Scenario 3: Addition of renewable energy unit at an existing renewable energy facility

The sources and gases included in each CPA boundary are mainly CO<sub>2</sub> which can be identified from:

- Fossil fuel combustion in Boiler for steam generation (baseline)
- On-site fossil fuel and electricity consumption
- Off-site transportation of biomass residues

Complying with para.80/VVM, the validation team hereby confirms that the identification and justification of the boundary and the sources and gases selected as documented in the PoA-DD is in line with the boundary delineation.

### 3.6.3 Baseline identification (87-88)

As the CPAs within the PoA are determined as small-scale, hence, the baseline scenario for each CPA is described in compliance with methodology AMS-I.C. Version 19 [5]

“For renewable energy technologies that displace technologies using fossil fuels, the simplified baseline is the fuel consumption of the technologies that would have been used in the absence of the project activity times an emission coefficient for the fossil fuel displaced. For calculating the emission factor, reliable local or national data shall be

used. IPCC default values shall be used only when country or project specific data are not available or demonstrably difficult to obtain.”

Therefore, the baseline scenario is defined as the steam / heat generation by fossil fuels prior to the implementation of the PoA.

### 3.6.4 Algorithms and/or formulae used to determine emission reductions (92-93)

According to the PoA-DD, a typical CPA will apply AMS-I.C. Version 19 [5] to determine emission reductions. Based on the identified Project Scenario of this CPA, the emission reductions are calculated as follows:

#### Baseline emission ( $BE_y$ )

$$BE_y = BE_{\text{thermal},\text{CO}_2,y} = (EG_{\text{thermal},y} / \eta_{\text{BL},\text{thermal}}) \times EF_{\text{FF},\text{CO}_2}$$

Where:

- $BE_{\text{thermal},\text{CO}_2,y}$  = Baseline emissions from steam/heat displaced by the project activity during the year y ( $\text{tCO}_2$ )
- $EG_{\text{thermal},y}$  = The net quantity of steam/heat supplied by the project activity during the year y (TJ). The calculation of  $EG_{\text{thermal},y}$  will be differed according to the Project Scenario as described in the PoA-DD
- $EF_{\text{FF},\text{CO}_2}$  = The  $\text{CO}_2$  emission factor of the fossil fuel that would have been used in the baseline plant obtained from reliable local or national data if available, alternatively, IPCC emission factors can be used ( $\text{tCO}_2/\text{TJ}$ )
- $\eta_{\text{BL},\text{thermal}}$  = The efficiency of the plant using fossil fuel that would have been used in the absence of the project activity (%).

#### Project emissions ( $PE_y$ )

According to the applied methodology, there are three tools that can be used for calculating Project emissions:

- “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” Version 01 [6]
- “Tool to calculate the emission factor for an electricity system” Version 2.2.1 [7]
- “Tool to calculate Project or leakage  $\text{CO}_2$  emissions from fossil fuel combustion” Version 02 [8]

#### Leakage emission ( $LE_y$ )

According to the applied methodology, the leakage emissions from the project activity are considered by using “General Guidance on leakage in Biomass Project Activities” Version 03 [9].



- Leakage emissions due to competing use for the biomass: this source of leakage can be neglected if the surplus availability of the biomass residues in the region (e.g 50 Km radius) is at least 25% larger than the quantity of biomass that is utilized for the CPA.
- In case the surplus of biomass in the region is less than 25% leakage emissions with regard to the collection / processing / transportation from outside the Project activity boundary, the leakage will be considered for the CPA as follows:
  - (1) Leakage emissions due to processing of biomass by utilizing electricity
  - (2) Leakage emissions due to transportation of collection of biomass to biomass processing sites
  - (3) Leakage emissions due to transportation of processed biomass to Project site.

The validation team hereby confirms that the baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage emissions and emission reductions.

### **3.7 Additionality of the PoA (97)**

The additionality of each CPA included in the PoA is assessed and determined by any one of the following approaches:

- Approach 1: According to “Guidelines for demonstrating additionality of microscale project activity” Version 03 [10]
- Approach 2: As per “Attachment A of Appendix B of the Simplified modalities and procedures for small-scale CDM project activities” Version 08 [11], the additionality of the CPA is demonstrated only by Investment barrier route.

The validation team hereby confirms that the approaches described in the PoA-DD for the assessment and demonstration of additionality are appropriate.

#### **3.7.1 Prior consideration of the clean development mechanism (104)**

“Guidelines for the demonstration and assessment of prior consideration of the CDM” Version 04 [12] does not apply to PoAs, as at present it is expected that no component of the PoA will commence prior to the start date of validation of the PoA.

The start date of the PoA is 11/10/2011 as described in the PoA-DD.



### **3.7.2 Identification of alternatives (107)**

The step “Identification of alternatives” is performed at CPA level.

### **3.7.3 Investment analysis (114)**

The step “Investment analysis” is not applied for CPAs within the PoA.

### **3.7.4 Barrier analysis (118)**

According to “Attachment A to Appendix B of the Simplified Modalities & Procedures for Small-scale CDM Project activities” [11], The CPAs included within this PoA shall apply Investment Barrier.

The investment barrier is demonstrated based on the investment analysis as per Sub-step 2b, Option II – Investment Comparison Analysis of “Tool for the demonstration and assessment of additionality” Version 6.0.0 [13].

### **3.7.5 Common practice analysis (121)**

The step “Common practice analysis” is not applied for CPAs within the PoA.

## **3.8 Monitoring plan (124)**

As per the PoA-DD, a central database will be set up by the CME for each CPA under the PoA. The CME will continuously update a list of all CPAs as well as collect the monitoring information of all participating CPAs for the purpose of the verification by DOE. All of monitoring information will be collected by the CME during the monitoring period and the forms a monitoring report for verification.

The responsibility for monitoring by the CME and CPA implementers clearly indicate in Section A.4.4.1 and Section E.7.2 of the PoA-DD. The CME will verify all of emission reductions generated by all CPAs under the PoA.

By reviewing the PoA-DD and the Monitoring manual /Ref-10/, the validation team considers that a transparent system for monitoring has been implemented by the CME to ensure all participating CPAs being properly monitored and verified to ensure that no double accounting occurs.

## **3.9 Sustainable development (127)**



The host Party's DNA confirmed the contribution of the PoA to the sustainable development of the host country (see **Section 3.1** above).

### **3.10 Local stakeholder consultation (130)**

The step "Local stakeholder consultation" is performed at CPA level.

### **3.11 Environmental impacts (133)**

The step "environmental impacts" is performed at CPA level.

## **4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS**

The PoA-DD, generic CPA-DD and specific CPA-DD using methodology AMS-I.C. were web-hosted on the UNFCCC for global stakeholders' comments as per CDM requirements from 11/10/2011 to 09/11/2011.

No comments were received.

## **5 VALIDATION OPINION**

Bureau Veritas Certification has performed a validation of the the PoA-DD, the generic CPA-DD and specific CPA. The validation was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

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

By description of the PoA, the PoA is likely to result in reductions of GHG emissions partially. Emission reductions attributable to the PoA are hence additional to any that would occur in the absence of the PoA. Given that the PoA is implemented and maintained as designed, the PoA is likely to achieve the estimated amount of emission reductions.

The review of the PoA-DD and the subsequent follow-up interviews has provided the validation team with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the PoA correctly applies the baseline and monitoring methodology AMS-I.C. Version 19 [3] and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.



## 6 REFERENCES

### Category 1 Documents:

Documents provided by Type the name of the company that relates directly to the GHG components of the PoA.

- /Ref-1/ PoA-DD Version 01 – date 21<sup>st</sup> September 2011
- /Ref-2/ Generic CPA-DD Version 01 – date 21<sup>st</sup> September 2011
- /Ref-3/ CPA-DD (Golden Hope Biomass Boiler Project) Version 04 – date 18<sup>th</sup> June 2012
- /Ref-4/ PoA-DD Version Version 04 – date 18<sup>th</sup> June 2012
- /Ref-5/ Generic CPA-DD Version 04 – date 18<sup>th</sup> June 2012
- /Ref-6/ CPA-DD (Golden Hope Biomass Boiler Project) Version 03 – date 7<sup>th</sup> May 2012
- /Ref-7/ Letter of Approval from Vietnam DNA (41/2011/DMHCC-BCD) – date 21<sup>st</sup> September 2011
- /Ref-8/ CME Management manual
- /Ref-9/ The corporate resolution by the CME confirmed on the ODA- date
- /Ref-10/ Monitoring manual prepared by CME (INTRACO)

### Category 2 Documents:

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

- [1] F-CDM-PoA-DD “Small-scale programme of activities design document form” – Version 01.0
- [2] Clarifications regarding the procedures for registration of a Programme of Activities as a single CDM Project Activity and issuance of Certified Emission Reductions for a Programme of Activities – Version 01, EB60, Annex 26
- [3] Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities – Version 01, EB 65, Annex 3
- [4] Procedure for Registration of a Programme of Activities as a single CDM project activity and issuance of certificate emission reduction for a Programme of Activities – Version 04.1, EB 55, Annex 38
- [5] AMS-I.C. “Thermal energy production with or without electricity” – Version 19, EB 61, Annex 16
- [6] Tool to calculate baseline, project and/or leakage emissions from electricity consumption – Version 01, EB 39, Annex 7
- [7] Tool to calculate the emission factor for an electricity system – Version 2.2.1, EB 63, Annex 19
- [8] Tool to calculate Project or leakage CO2 emissions from fossil fuel combustion – Version 02, EB 41, Annex 11
- [9] General Guidance on leakage in Biomass Project Activities – Version 03, EB 47, Annex 28
- [10] Guidelines for demonstrating additionality of microscale project activity – Version 03, EB 63, Annex 23
- [11] Attachment A of Appendix B of the Simplified modalities and procedures for small-scale CDM project activities – Version 08, EB 63, Annex 24
- [12] Guidelines for the demonstration and assessment of prior consideration of the CDM – Version 04, EB 62, Annex 13
- [13] Tool for the demonstration and assessment of Additionality – Version 6.0.0, EB 65, Annex 21



**Persons interviewed:**

List persons interviewed during the validation or persons that contributed with other information that are not included in the documents listed above.

- /1/* Mr. Hoang Anh Dung (Managing Director) – Investment and Trade Consultancy Company Limited
- /2/* Ms Le Thi Tuyet Trinh (Director) – Tin Thanh Industrial Electricity and Steam Company Limited
- /3/* Mr. Nguyen Duc Huynh – Investment and Trade Consultancy Company Limited
- /4/* Ms Nguyen Thi Nhu Y – Tin Thanh Industrial Electricity and Steam Company Limited
- /5/* Mr. Le Quang Linh – Investment and Trade Consultancy Company Limited
- /6/* Mr. Nguyen Ngoc Binh – Golden Hope Nha Be Factory
- /7/* Mr. Tran Minh Phung – Golden Hope Nha Be Factory
- /8/* Mr. Nguyen Thanh Hung – local worker

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## 7 CURRICULA VITAE OF THE DOE'S VALIDATION TEAM MEMBERS

Include CV of Team Leader, Team Members, Experts, Internal technical Reviewer

Mr. Ram Desai	Team Leader, CDM Lead verifier	<p>Environmental Engineer with over all 13 years of experience in various industries related to Water &amp; Waste water engineering design, installation &amp; Commissioning, Integrated Facility Management for Environmental Services operations in various industries i.e Automotive, Pharmaceutical , IT &amp; Electronics (With Clean Room).</p> <p>Management System Implementation and Maintenance, Green Building concept implementation, Lean Management Implementation, Water &amp; Waste Water engineering Design &amp; project Management, Project Environmental Compliance etc. for a construction company.</p> <p>He is the lead auditor for Environment management system, Quality management system and Occupational health and safety management system and his auditing experience spans for 3 year with BSCI &amp; BVCS. He has undergone intensive training on Clean Development Mechanism and was trained as Lead Verifier for CDM in the year 2005 and working as a Lead Verifier for validation and verification of CDM/VCS projects</p>
Mr. Nguyen Hong Linh	Team member, CDM Verifier	<p>He has graduated in Environmental Studies and had a Masters Degree of Quality Management. He has undergone intensive training on Clean Development Mechanism. His working experience includes more than 5 years of auditing works in the field of Quality Management System and Environmental Management System. He has been involved in the validation and verification work of more than 15 CDM projects.</p>
Mr. Sushil Budhia	Financial expert	<p>He has been practicing as Chartered Accountant for 25 years and he has very wide experience on project finance, taxation and financial auditing. He has undergone training on Clean Development Mechanism and has conducted verification of financial indicators like IRR for more than 70 CDM projects.</p>
Mr. Ashok Mammen	Technical Reviewer	<p>He has PhD (Oils &amp; Lubricants), Masters (Analytical chemistry). He has over 20 years of experience in petrochemical sector. Dr. Mammen is a lead auditor and tutor for environment, safety and quality management systems and a CDM lead verifier and lead tutor for GHG projects. He has been involved in the validation and verification processes of more than 100 CDM, JI and other GHG projects.</p>

## APPENDIX A: VALIDATION PROTOCOL

**Table 1: Validation requirements based on the Clean Development Mechanism Validation and Verification Manual (Version 01.2) and methodology AMS-I.C (Version 19) – “Thermal energy production with or without electricity”**

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
<b>1. Approval</b>			<b>COUNTRY A (Viet Nam)</b>	<b>COUNTRY B (N/A)</b>		
a. Have all Parties involved approved the project activity?	VVM	44	Yes	N/A	OK	OK
b. Has the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval? (If yes, provide the reference of the letter of approval, any supporting documentation, and specify if the letter was received from the project participatn or directly from the DNA)	VVM	45	Yes. The LoA (No. 41/2011/DMHCC-BCD) for the proposed project activity has been issued by Viet Nam DNA on 21 <sup>st</sup> Sep 2011	N/A	OK	OK
c. Does the letter of approval from DNA of each Party involved:	VVM	45				
i. confirm that the Party is a Party of the Kyoto Protocol?	VVM	45.a	Vietnam has ratified the Kyoto Protocol on 25 <sup>th</sup> Sep 2002	N/A	OK	OK
ii. confirm that participation is voluntary?	VVM	45.b	Yes. The voluntary participation is confirmed in the issued LoA.	N/A	OK	OK
iii. confirm that, in the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country?	VVM	45.c	Yes. The contribution to the country's sustainable development is confirmed in the issued LoA.	N/A	OK	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
iv. Refers to the precise proposed CDM project activity title in the PoA-DD being submitted for registration?	VVM	45.d	The proposed PoA title in the submitted PoA-PDD is in-line with the issued LoA.	N/A	OK	OK
d. Is(are) the letter(s) of approval unconditional with respect to (i) to (iv) above?	VVM	46	Yes. It is unconditional in Vietnam	N/A	OK	OK
e. Has(ve) the letter(s) of approval been issued by the respective Party's designated national authority (DNA) and is valid for the CDM project activity under validation?	VVM	47	Yes.	N/A	OK	OK
f. Is there doubt with respect to the authenticity of the letter of approval?	VVM	48	No	N/A	OK	OK
g. If yes, was verified with the DNA that the letter of approval is authentic?	VVM	48	No	N/A	OK	OK
<b>2. Participation</b>			<i>PP1 (Investment and Trade Consultancy Company Limited)</i>	<i>PP2 (N/A)</i>		
a. Have all project participants been listed in a consistent manner in the project documentation?	VVM	51	Yes	N/A	OK	OK
b. Has the participation of the project participants in the project activity been approved by a Party to the Kyoto Protocol?	VVM	51	Yes	N/A	OK	OK
c. Are the project participants listed in tabular form in section A.3 of the PoA-PDD?	VVM	52	Yes, relevant formats have been checked in section A.3 of the POA-DD. No deviation has been found.	N/A	OK	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
d. Is the information in section A.3 consistent with the contact details provided in annex 1 of the PoA-PDD?	VVM	52	Yes	N/A	OK	OK
e. Has the participation of each of the project participants been approved by at least one Party involved, either in a letter of approval or in a separate letter specifically to approve participation? (Provide reference of the approval document for each of the project participants)	VVM	52	Yes	N/A	OK	OK
f. Are any entities other than those approved as project participants included in these sections of the PoA-DD?	VVM	52	No		OK	OK
g. Has the approval of participation issued from the relevant DNA?	VVM	53	N/A	N/A	-	-
h. Is there doubt with respect to (g) above? I	VVM	53	N/A	N/A	-	-
i. If yes, was verified with the DNA that the approval of participation is valid for the proposed project participant?	VVM	53	N/A	N/A	-	-
<b>3. Project design document</b>						
a. Is the PoA-DD used as a basis for validation prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website?	VVM	55	Yes, the latest version of the POA-DD template has been used. This has been cross-checked with the format provided in the UNFCCC website.		OK	OK
b. Is the PoA-DD in accordance with the applicable CDM requirements for completing the PoA-DD?	VVM	56	Yes		OK	OK
c. In PoA-DD section A.1 are following provided?	EB 34	Ann 09	<a href="http://cdm.unfccc.int/Reference/PDDs_Forms/PoA/index.html">http://cdm.unfccc.int/Reference/PDDs_Forms/PoA/index.html</a>			

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. Title of PoA-DD	EB 34	Ann 09	Yes. The title of the PoA is: "Biomass Heat Generation Development Programme of Activities Managed by INTRACO"	OK	OK
ii. Current version number and date of document	EB 34	Ann 09	Current version number (version 01) and date of document (21 <sup>st</sup> Sep 2011) were addressed adequately.	OK	OK
d. In PoA-DD section A.2 are following provided (max. one page)?	EB 34	Ann 09			
i. A brief description of the project activity covering purpose which includes the scenario existing prior to the start of project, present scenario and baseline	EB 34	Ann 09	The PoA support the replacement of fossil fuel fired equipments used (at present and future) for generate steam/heat in industrial facilities throughout the provinces of Vietnam by Biomass based heat producing technology. Each CPA under this PoA will comprise one or more such biomass energy generation units within the threshold for a small-scale CDM project.	OK	OK
ii. Explanation how the GHG emission reductions are effected	EB 34	Ann 09	The PoA uses biomass to generate steam which will displace the more emission-intensive fossil fuel and therefore will result in a reduction in greenhouse gas (GHG) emissions.	OK	OK
iii. The PP's view on the contribution of project activity to sustainable development	EB 34	Ann 09	The project's sustainable development is described in section A.2 of the PoA-DD. Validation team confirmed the information by checking Feasibility Study Report and through on-site validation.	OK	OK
e. In PoA-DD section A.3 are following provided in the tabular format?	EB 34	Ann 09			

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. List of project participants and Party(ies)	EB 34	Ann 09	Yes. The private entities involved in the project activity are sufficiently listed at section A.3 of the PoA-PDD.	OK	OK
ii. Identification of host party	EB 34	Ann 09	Host Party: Vietnam	OK	OK
iii. Indication whether the Party wishes to be considered as project participant	EB 34	Ann 09	The Party does not wish to be considered as Project Participant.	OK	OK
f. In PoA-DD section A.4.1 are following provided?	EB 34	Ann 09			
i. Technical description, location, host party(ies) and address as required?	EB 34	Ann 09	Yes. The PoA will be implemented within the geographical boundaries of Viet Nam.	OK	OK
ii. Detailed physical location with unique identification of the project activity (eg. Longitude/latitude) – not to exceed one page	EB 34	Ann 09	Yes. The geographical coordinates of the PoA are: <ul style="list-style-type: none"> <li>• Longitude: from 102°09' to 109°30' East</li> <li>• Latitude: from 8°10' to 23°24' North</li> </ul>	OK	OK
g. In PoA-DD section A.4.2 are following provided	EB 34	Ann 09			
i. the list of categories of project activities as per the latest categorization of Appendix B to the simplified modalities and procedures for small-scale CDM project activities, hereafter referred to as Appendix B. (refer <a href="http://cdm.unfccc.int/methodologies/SSCmethodologies">http://cdm.unfccc.int/methodologies/SSCmethodologies</a> )	EB 34	Ann 09	Category of project activities has been provided in relevant section: <ul style="list-style-type: none"> <li>• Type I: Renewable Energy Projects.</li> <li>• Category I.C: "Thermal energy production with or without electricity"; Version 19, EB 61.</li> <li>• Sectoral Scope: 01</li> </ul>	OK	OK
ii. A description of how environmentally safe and sound technology and know how is being applied by the project activity interalia	EB 34	Ann 09	CL-5 was issued  CL-5: PoA –DD Section A.4.2 on description of SSC	CL-5	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
technology transfer to the Host Party(ies) for application in the project activity			–CPA is not appropriately covering type of biomass used as fuel at CPA Level.		
iii. Are eligibility criteria for inclusion of a CPA in the PoA provided?	EB 34	Ann 09	Yes. The detailed criteria are provided.	OK	OK
h. In PoA-DD section A.4.3 is the description of how the anthropogenic emissions of GHG by sources are reduced by a CPA below those that would have occurred in the absence of the registered PoA (assessment and demonstration of additionality) provided?	EB 34		Yes. The validation team confirms that the PoA is voluntary and The additionality for the CPA is demonstrated by: <ul style="list-style-type: none"> <li>• Approach 1: Demonstrating additionality of micro-scale project activities (up to 5 MW capacities).</li> <li>• Approach 2: The Project activity attempting Investment barrier analysis</li> </ul>	OK	OK
i. In PoA-DD section A.4.4 is information regarding operational, management and monitoring plan for the programme of activities (PoA) provided?	EB 34	Ann 09	Yes	OK	OK
j. In PoA-DD section A.4.5 is information regarding Public funding provided?	EB 34	Ann 09	Yes. There are no public and or ODA funds involved in this project activity.	OK	OK
k. In PoA-DD section B.1 is the starting date of the Programme of Activities (PoA) provided?	EB 34	Ann 09	Yes. The start date of the PoA is 10 <sup>th</sup> Oct 2011	OK	OK
l. In PoA-DD section B.2 is the length of the Programme of Activities (PoA) provided?	EB 34	Ann 09	Yes. The length of the PoA is 28 years 0 month as per the “Guidance on the registration of Project activities under a Programme of Activities as a single CDM Project activity”	OK	OK
m. In PoA-DD section C.1 is the level provided at which environmental analysis as per requirements of the CDM modalities and			Yes. The Environmental Analysis is done at CPA level because of the local and focalized impacts of project activity justify a separate environmental	OK	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
procedures is undertaken? Is the choice of level justified at which the environmental analysis is undertaken?			assessment for each CPA.		
n. In PoA-DD section C.2 is the documentation on the analysis of the environmental impacts, including transboundary impacts, provided?			Yes. The Environmental Analysis is done at CPA level.	OK	OK
o. In PoA-DD section C.3 is it state whether in accordance with the host Party laws/regulations, an environmental impact assessment is required for a typical CPA, included in the Programme of Activities (PoA)?			Yes. All CPAs in the PoA must prepare Environmental Impact Assessment according to: <ul style="list-style-type: none"> <li>• The Environment Law 2005.</li> <li>• Decree 80/2006/ND-CP about Guidelines on implementation of Environment Law</li> <li>• Decree No.21/2008/ND-CP about Amendment and Addition of Decree No.80/2006/ND-CP</li> </ul>	OK	OK
p. In PoA-DD section D.1 is the level at which local stake holders provided?	EB 34	Ann 09	Yes. Only at CPA level	OK	OK
q. In PoA-DD section D.2 is there a brief description on how comments by local stakeholders have been invited and compiled	EB 34	Ann 09	Yes. Guidance has been provided	OK	OK
r. In PoA-DD section D.3 is there a summary of these comments	EB 34	Ann 09	No. Only at CPA level	OK	OK
s. In PoA-DD section D.4 is and explanation of how due account have been taken of comments received from local stakeholders provided?	EB 34	Ann 09	No. Only at CPA level	OK	OK
t. In PoA-DD section E.1 is the title and reference of the approved SSC baseline and monitoring methodology applied to a CPA included in the PoA provided?			Yes. The title is "Thermal energy production with or without electricity" - Methodology: AMS I.C. Version 19, EB 56.	OK	OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
u. In PoA-DD section E.2 is the justification of the choice of the methodology and why it is applicable to a CPA provided?			<p>Yes</p> <p><b>CAR-8, CAR-9 and CL-6</b> were issued</p> <p><b>CAR 8:</b> POA-DD Section E.2 Condition No. 7 Justification is not in line with the requirement of AMS I.C Para 7 as well the Justification of the choice of methodology is not found capturing the AMS IC Condition No. 48 for Leakage calculation due to Biomass processing.</p> <p><b>CAR 9:</b> POA-DD Section E.2 Condition No. 10&amp; 11 – CME has justified that, CPA selected under this POA does not utilize solid fuel and hence both conditions are not applicable, however the 1st real case CPA which was presented by the CME is found using solid Biomass fuel in the form of Biomass Briquette.</p> <p><b>CL 6:</b> POA – DD Section E.2 condition No. 8 – Justification for applicability provided is contradicting with the scenario 2 identified under section A.4.2.1, please clarify.</p>	<p>CAR-8 CAR-9 CL-6</p>	OK
v. In PoA-DD section E.3 is the description of the sources and gases included in the CPA boundary provided?	EB 34	Ann 09	<p>Yes. CO<sub>2</sub> emissions are defined from:</p> <ul style="list-style-type: none"> <li>• Fossil fuel combustion in Boiler/Heater for steam/heat generation</li> <li>• On-site fossil fuel and electricity consumption</li> <li>• Off-site transportation of biomass residues</li> </ul>	OK	OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
w. In PoA-DD section E.4 are the following provided to describe how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the CPA being included as registered PoA					
i. Assessment and demonstration of additionality for a typical CPA			Refer to (3.h) above	-	-
ii. Key criteria and data for assessing additionality of a CPA:			<ul style="list-style-type: none"> <li>• The CPA to demonstrate compliance with the applicability conditions listed under Annex 25 to EB 60</li> <li>• The investment barrier shall be demonstrated based on the investment analysis as per sub-step 2 b, option II-Investment Comparison Analysis of “Tool for the demonstration and assessment of additionality”</li> </ul> <p><b>CAR-10</b> was issued</p> <p><b>CAR 10:</b> POA –DD Section E.4, Table E.4.2 List of Key Variable &amp; its Data Source, CME has identified NCV of baseline fossil fuel and intended to apply IPCC Default Value, however in ER Calculation spread sheet CPA entity has utilized NCV value obtained from the Fuel Supplier. Application of values found inconsistent at POA and CPA level.</p>	CAR-10	OK
x. In PoA-DD section E.6.1 is the explanation of methodological choices, provided in the approved			Yes. Procedures for baseline emission factor calculation has been specified and found in line with	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
baseline and monitoring methodology applied, selected for a typical SSC-CPA provided?			AMS I.C. Version 19.		
y. In PoA-DD section E.6.2 are following provided?	EB 34	Ann 09			
i. Clearly stating of which equations will be used in calculating emission reductions for a typical SSC-CPA	EB 34	Ann 09	<p>Yes.</p> <ul style="list-style-type: none"> <li>The base line emissions (<math>BE_y</math>) are calculated based on 3 baseline scenarios.</li> <li>The project emissions (<math>PE_y</math>) are calculated under “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” (Version 02) and “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” (Version 01).</li> <li>The leakage emissions are calculated under formula: <math>LE_y = LE_{EC,y} + LE_{Col,y} + LE_{TR,y}</math> In which:               <ul style="list-style-type: none"> <li><math>LE_{EC,y}</math> = Leakage emissions due to processing of biomassbu utilizing electricity</li> <li><math>LE_{Col,y}</math> = Leakage emissions due to transport of collection of biomass to biomass processing sites</li> <li><math>LE_{TR,y}</math> = Leakage emissions due to transportation of processed biomass to Project site</li> </ul> </li> </ul> <p>The emission reductions are calculated under formula: <math>ER_y = BE_y - PE_y - LE_y</math></p>	OK	OK
ii. Explanation and justification of all relevant methodological choices, including: where the	EB 34	Ann 09	Refer to (5.e) below	-	-

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
category provides different options to choose from; where the category provides for different default values					
z. In PoA-DD section E.6.3 are following provided?	EB 34	Ann 09			
i. A compilation of information on the data and parameters that are not monitored but determined upfront so as to be available for validation	EB 34	Ann 09	<p>Yes. The parameters includes:</p> <ul style="list-style-type: none"> <li>• <math>CAP_{\text{boiler}}</math>: Rated capacity (thermal output) of the boiler of the Project activity.</li> <li>• <math>CAP_{\text{heater}}</math>: Rated capacity (thermal output) of the heater of the Project activity.</li> <li>• <math>\eta_{\text{BL,thermal}}</math>: The Efficiency of the plant using fossil fuel that would have been used in the absence of the Project activity</li> <li>• <math>EF_{\text{FF,CO}_2}</math>: CO2 Emission Factor of the fossil fuel that would have been used in the baseline plant</li> <li>• <math>SA_k</math>: Surplus availability of Biomass within 50 km radial distance</li> <li>• <math>EF_{\text{grid,CM,y Ex-ante}}</math>: Grid Emission Factor in a year y</li> <li>• <math>EF_{\text{EL,j,y}} = EF_{\text{EL,l,y}}</math>: Emission Factor for fossil fuel based electricity generation for source j and/or l in year y</li> <li>• <math>EC_{\text{LE,l,y}}</math>: Auxiliary Electricity Consumption for biomass processing, outside Project boundary.</li> <li>• <math>EF_{\text{km,CO}_2}</math>: Average CO2 emission factor for the trucks measured during the year y</li> <li>• <math>TDL_{\text{l,y}} = TDL_{\text{j,y}}</math>: Average technical transmission and</li> </ul>	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>distribution losses for providing electricity to source l and/or j in year y</p> <ul style="list-style-type: none"> <li>• <math>CAP_{boiler,old}</math>: Rated capacity (output) of the existing renewable fuel fired boiler</li> <li>• <math>CAP_{boiler,add}</math>: Rated capacity (output) of the Boiler added to the existing renewable facility</li> <li>• <math>CAP_{heater,old}</math>: Rated capacity (thermal output) of the existing renewable fuel fired heater</li> <li>• <math>CAP_{heater,add}</math>: Rated capacity (thermal output) of the heater added to the existing renewable facility</li> <li>• <math>Q_{historical,steam,y}</math>: Historical steam delivered by the existing facility</li> <li>• <math>T_{historical,steam,y}</math>: Average Historical steam temperature at MSSV (Main steam stop valve) outlet of the existing facility</li> <li>• <math>P_{historical,steam,y}</math>: Average Historical steam pressure (gauge) at MSSV (Main steam stop valve) outlet of the existing facility</li> <li>• <math>T_{historical,FWB,y}</math>: Average Feed Water Temperature at inlet of the existing facility</li> <li>• <math>Q_{ci,historical}</math>: Quantity of fossil fuel consumed in baseline plant in year y</li> <li>• <math>NCV_{i,historical}</math>: Calorific value of fossil fuel consumed in baseline plant in year y</li> <li>• <math>CAP_{BL,retrofit}</math>: Rated capacity (output) of the Baseline fuel fired boiler</li> </ul>		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<ul style="list-style-type: none"> <li>• <math>C_{p,i,historical,out}</math>: Specific heat of heat transfer fluid type 'i' at outlet of existing fossil fuel facility.</li> <li>• <math>\bar{\delta}_{i,historical,out}</math>: Density of heat transfer fluid type 'i' at <math>T_{out}</math> temperature of existing fossil fuel facility</li> <li>• <math>Q_{historical,flow}</math>: Flow of heat transfer fluid at the heater outlet of existing fossil fuel facility</li> <li>• <math>T_{historical,in}</math>: Average Inlet Temperature of heat transfer fluid at the inlet of the heater existing fossil fuel facility</li> <li>• <math>T_{historical,out}</math>: Average Temperature of heat transfer fluid at the outlet of the heater of existing fossil fuel facility</li> <li>• <math>h_{historical,y}</math>: Operational hours of the baseline plant in a year y</li> <li>• <math>CAP_{retrofit}</math>: Rated capacity (output) of the boiler or heater after retrofit</li> <li>• <math>C_{p,i,out}</math>: Specific heat of heat transfer fluid at heater outlet.</li> <li>• <math>\bar{\delta}_{i,out}</math>: Density of heat transfer fluid at <math>T_{out}</math> temperature of the heater (kg/m<sup>3</sup>)</li> <li>• <math>\bar{\delta}_{i,out}</math>: Density of heat transfer fluid at <math>T_{out}</math> temperature of the heater (kg/m<sup>3</sup>)</li> <li>• <math>C_{p,i,retrofit,out}</math>: Specific heat of heat transfer fluid type 'i' at outlet of renewable energy unit after retrofit</li> <li>• <math>\bar{\delta}_{i,retrofit,out}</math>: Density of heat transfer fluid type 'i' at <math>T_{out}</math> temperature after retrofit</li> <li>• <math>C_{p,i,out,old,y}</math>: Specific heat of heat transfer media of</li> </ul>		



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>type 'i' at outlet of an existing renewable energy production facility in year y</p> <ul style="list-style-type: none"> <li>• <math>C_{p,i,out,add,y}</math>: Specific heat of heat transfer media 'i' at outlet of additional renewable energy unit at an existing renewable energy production facility in year y</li> <li>• <math>\delta_{i,out,old,y}</math>: Density of heat transfer fluid type 'i' at <math>T_{out}</math> temperature of an existing renewable energy production facility in year y</li> <li>• <math>\delta_{i,out,add,y}</math>: Density of heat transfer fluid type 'i' at <math>T_{out}</math> temperature of new renewable energy unit at the renewable energy facility in year y</li> </ul>		

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. The actual value applied	EB 34	Ann 09	The official data "Calculation emission factor of Vietnamese Electricity Grid" were based on the data of Reports of Power Plants in Vietnamese Power System in July 2009, Emission Factor of CO <sub>2</sub> pursuant to IPCC.	OK	OK
iii. Explanation and justification for the choice of the source of data	EB 34	Ann 09	Yes. It is defined in the relevant section of the PoA-DD	OK	OK
iv. Clear and transparent references or additional documentation in Annex 3	EB 34	Ann 09	Yes	OK	OK
aa. In PoA-DD section E.7.1 are following provided?	EB 34	Ann 09			
i. Specific information on how the data and parameters that need to be monitored would actually be collected during monitoring for the project activity	EB 34	Ann 09	<p>Yes. The parameters to be monitored by each CPA:</p> <ul style="list-style-type: none"> <li>• Q<sub>steam</sub>: Quantity of steam supplied in year y</li> <li>• T<sub>steam</sub>: Steam Temperature at MSSV (Main steam stop valve) outlet</li> <li>• P<sub>steam</sub>: Steam Pressure (gauge) at MSSV (Main steam stop valve) outlet</li> <li>• T<sub>FWB</sub>: Feed Water Temperature at inlet of boiler</li> <li>• Q<sub>flow</sub>: Flow of heat transfer fluid at the heater outlet</li> <li>• T<sub>in</sub>: Inlet Temperature of the heat transfer fluid at the inlet of the heater</li> <li>• T<sub>out</sub>: Temperature of the heat transfer fluid at the outlet of the heater</li> <li>• h<sub>y</sub>: Boiler / Heater operating hours of the Project activity in year y</li> <li>• Q<sub>ob,k</sub>: Quantity of stored fuel type biomass k on the starting date of each monitoring period measured</li> </ul>	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>at the Project site</p> <ul style="list-style-type: none"> <li>• <math>Q_{np,k}</math>: Quantity of subsequent delivery of fuel type k biomass at the Project site</li> <li>• <math>Q_{in,k}</math>: Quantity of remaining biomass fuel type k available at the end date of each monitored period measured at the Project site</li> <li>• <math>Q_{c,k} = FC_{biomass,k,y}</math>: Quantity of biomass fuel type k consumed during the monitoring period</li> <li>• <math>Q_{ob,i}</math>: Quantity of stored fuel type fossil i on the starting date of each monitoring period measured at the Project site</li> <li>• <math>Q_{np,i}</math>: Quantity of subsequent delivery of fuel type fossil fuel i</li> <li>• <math>Q_{in,i}</math>: Quantity of remaining fossil fuel type i available at the end date of each monitored period measured at the Project site</li> <li>• <math>Q_{c,i} = FC_{j,PJ,y}</math>: Quantity of fossil fuel type i consumed during the monitoring period</li> <li>• <math>NCV_k</math>: Net calorific value of biomass fuel k used in the Project activity.</li> <li>• <math>NCV_{i,y}</math>: Weighted average net calorific value of the fuel type i in year y</li> <li>• <math>FC_{i,j,y}</math>: Quantity of fossil fuel type i consumed in a process j during the year y</li> <li>• <math>EC_{PJ,j,y}</math>: Auxiliary Electricity Consumption of the Project activity from the from Grid in year y</li> <li>• <math>EC_{EL,j,y}</math>: Auxiliary Electricity Consumption of the</li> </ul>		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>Project activity from the off grid Captive Power Plant ( Diesel Generator set or Fossil fuel based power source) in a year y</p> <ul style="list-style-type: none"> <li>• <math>AVD_{y}</math>: Average return trip distance (from and to) between the source of the biomass and the site of the Project plant during the year y</li> <li>• <math>N_{y}</math>: Number of truck trips during the year y</li> <li>• <math>AVD_{c,y}</math>: Average round trip distance (from and to) between the biomass fuel supply sites and the site of biomass processing in year y</li> <li>• <math>N_{c,y}</math>: Number of truck trips during the transportation of biomass to the biomass processing site in year y</li> <li>• <math>Q_{Steam,old,y}</math>: Quantity of steam produced by an existing renewable energy unit in year y</li> <li>• <math>Q_{Steam,add,y}</math>: Quantity of steam generated by additional renewable energy unit at an existing renewable energy production facility in year y</li> <li>• <math>T_{steam,old,y}</math>: Steam Temperature at MSSV (Main steam stop valve) outlet of an existing renewable energy production facility in year y</li> <li>• <math>T_{steam,add,y}</math>: Steam Temperature at MSSV (Main steam stop valve) outlet of additional renewable energy unit (Boiler) at an existing renewable energy production facility in year y</li> <li>• <math>P_{steam,old,y}</math>: Steam Pressure (gauge) at MSSV (Main steam stop valve) outlet of an existing renewable energy production facility</li> </ul>		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<ul style="list-style-type: none"> <li>• <math>P_{\text{steam,add,y}}</math>: Steam Pressure (gauge) at MSSV (Main steam stop valve) outlet of additional renewable energy unit (boiler) at an existing renewable energy production facility in year y</li> <li>• <math>T_{\text{FWB,old,y}}</math>: Average Feed Water Temperature at inlet an existing renewable energy production facility (boiler) in year y.</li> <li>• <math>T_{\text{FWB,add,y}}</math>: Feed Water Temperature at inlet of additional renewable energy unit (boiler) at an existing renewable energy production facility in year y.</li> <li>• <math>Q_{\text{flow,old,y}}</math>: Flow of heat transfer fluid at the heater outlet of an existing renewable energy production facility in year y.</li> <li>• <math>Q_{\text{flow,add,y}}</math>: Flow of heat transfer fluid at the heater outlet of additional renewable energy unit (heater) at an existing renewable energy production facility in year y</li> <li>• <math>T_{\text{in,old,y}}</math>: Inlet Temperature of the heat transfer fluid at the inlet of the heater in an existing renewable energy production facility in year y</li> <li>• <math>T_{\text{in,add,y}}</math>: Inlet Temperature of the heat transfer fluid at the inlet of the heater in an additional renewable energy unit at an existing renewable energy facility in year y</li> <li>• <math>T_{\text{out,old,y}}</math>: Temperature of the heat transfer fluid at the outlet of the heater in an existing renewable energy</li> </ul>		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>production facility in year y</p> <ul style="list-style-type: none"> <li>• <math>T_{out,add,y}</math>: Temperature of the heat transfer fluid at the outlet of the heater in an additional renewable energy unit at an existing renewable energy facility in year y</li> <li>• <math>h_{old,y}</math>: Boiler / Heater operating hours of the existing renewable facility in a year y</li> <li>• <math>h_{add,y}</math>: Boiler / Heater operating hours of the renewable energy unit in a year y</li> <li>• <math>Q_{ob,k,add}</math>: Quantity of stored fuel type k biomass on the starting date of each monitoring period measured at the Project site</li> <li>• <math>Q_{np,k,add}</math>: Quantity of subsequent delivery of fuel type k biomass at the Project site</li> <li>• <math>Q_{in,k,add}</math>: Quantity of remaining biomass fuel type k available at the end date of each monitored period measured at the Project site</li> <li>• <math>Q_{c,k,add}</math>: Quantity of biomass fuel type k consumed during the monitoring period</li> <li>• <math>Q_{retrofit,steam}</math>: Quantity of steam supplied after fuel switching from fossil fuel to biomass by modification including retrofit of an existing facility in year y.</li> <li>• <math>T_{retrofit,steam}</math>: Steam Temperature at MSSV (Main steam stop valve) outlet after fuel switching from fossil fuel to biomass by modification including retrofit of an existing facility.</li> </ul>		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<ul style="list-style-type: none"> <li>• <math>P_{\text{retrofit,steam}}</math>: Steam Pressure (gauge) at MSSV (Main steam stop valve) outlet after fuel switching from fossil fuel to biomass by modification including retrofit of an existing facility.</li> <li>• <math>T_{\text{retrofit,FWB}}</math>: Feed Water Temperature at inlet of the boiler after fuel switching from fossil fuel to biomass by modification including retrofit of an existing facility.</li> <li>• <math>Q_{\text{retrofit,flow}}</math>: Flow of heat transfer fluid at the heater outlet after fuel switching from fossil fuel to biomass by modification including retrofit of an existing facility in year y.</li> <li>• <math>T_{\text{retrofit,in}}</math>: Inlet Temperature of heat transfer fluid at the inlet of the heater after fuel switching from fossil fuel to biomass by modification including retrofit of an existing facility.</li> <li>• <math>T_{\text{retrofit,out}}</math>: Temperature of heat transfer fluid at the outlet of the heater after fuel switching from fossil fuel to biomass by modification including retrofit of an existing facility.</li> <li>• <math>h_{\text{retrofit,y}}</math>: Operating hours of Boiler / Heater after fuel switching from fossil fuel to biomass by modification including retrofit of an existing facility in year y.</li> <li>• <math>Q_{\text{retrofit,ob,k}}</math>: Quantity of stored fuel type biomass k on the starting date of each monitoring period measured at the Project site in a year y</li> </ul>		



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<ul style="list-style-type: none"> <li>• <math>Q_{\text{retrofit,np,k}}</math>: Quantity of subsequent delivery of fuel type biomass k in a year y</li> <li>• <math>Q_{\text{retrofit,in,k}}</math>: Quantity of remaining biomass fuel type k available at the end date of each monitored period measured at the Project site in a year y</li> <li>• <math>Q_{\text{retrofit,c,k}}</math>: Quantity of biomass fuel type k consumed during the monitoring period</li> <li>• <math>EF_{\text{CO2,i,y}}</math>: Weighted average CO2 emission factor of fuel type i in year y</li> </ul>		

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. For each below parameter the following information, using the table provided:	EB 34	Ann 09			
a. The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national statistics). Where several sources may be used, explain and justify which data sources should be preferred	EB 34	Ann 09	Yes. The sources of data are defined in the relevant section of the PoA-DD	OK	OK
b. Where data or parameters are supposed to be measured, specify the measurement methods and procedures, including a specification which accepted industry standards or national or international standards will be applied, which measurement equipment is used, how the measurement is undertaken, which calibration procedures are applied, what is the accuracy of the measurement method, who is the responsible person/entity that should undertake the measurements and what is the measurement interval; (i) A description of the QA/QC procedures (if any) that should be applied; (ii) Where relevant: any further comment. Provide any relevant further background documentation in Annex 4.	EB 34	Ann 09	Yes. The measurement methods and procedures of data are defined in the relevant section of the PoA-DD	OK	OK
bb. In PoA-DD section E.7.2 is a detailed description	EB	Ann			

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
of the monitoring plan provided	34	09			
a. The operational and management structure that the project operator will implement in order to monitor emission reductions and any leakage effects generated by the project activity	EB 34	Ann 09	Yes. The monitoring plan for POA include: <ul style="list-style-type: none"> <li>Record keeping system for each CPA under the POA</li> <li>Procedure to prevent double accounting of new CPA that has been already registered as CDM or as a CPA of another POA</li> <li>Procedure to ensure that the SSC CPA included in the POA is not a de-bundled component of another CPA or CDM project activity</li> <li>Awareness of CPA Operators about their activities are being subscribed to the POA</li> </ul>	OK	OK
b. These responsibilities for and institutional arrangements for data collection and archiving	EB 34	Ann 09	Yes	OK	OK
c. Does the monitoring plan reflect good monitoring practice appropriate to the type of project activity	EB 34	Ann 09	Yes	OK	OK
d. Relevant further background information in Annex 4	EB 34	Ann 09	N/A	-	-
cc. In PoA-DD section E.8 are following provided	EB 34	Ann 09			
i. Date of completion of the application of the methodology to the project activity study in DD/MM/YYYY	EB 34	Ann 09	Date of completion of the baseline study was determined on 30 <sup>th</sup> Aug 2011	OK	OK
ii. Contact information of the person(s)/entity(ies) responsible for the application of the baseline	EB 34	Ann 09	Yes. Investment and Trade Consultancy Company Limited is a project participant and responsible for the	OK	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
and monitoring methodology to the project activity			application.		
iii. Indicated if the person/entity is also a project participant listed in Annex 1	EB 34	Ann 09	Yes	OK	OK
dd. In PoA-DD Annex 1 are following provided?	EB 34	Ann 09			
i. Contact information of project participants	EB 34	Ann 09	Yes	OK	OK
ii. For each organisation listed in section A.3 the following mandatory fields: Organization, Name of contact person, Street, City, Postfix/ZIP, Country, Telephone and Fax or e-mail	EB 34	Ann 09	Yes	OK	OK
ee. In PoA-DD Annex 2 is information from Parties included in Annex I on sources of public funding for the project activity which shall provide an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of those Parties provided?	EB 34	Ann 09	N/A	-	-
ff. In PoA-DD Annex 3 is the background information used in the application of the baseline methodology provided?	EB 34	Ann 09	Yes	OK	OK
gg. In PoA-DD Annex 4 is the background information used in the application of the monitoring methodology provided?	EB 34	Ann 09	N/A	-	-

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
<b>4. Project description</b>					
a. Does the PDD contain a clear description of the project activity that provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation?	VVM	58	Yes	OK	OK
b. Is the description of the proposed CDM project activity as contained in the PDD:	VVM	59			
i. sufficiently covering all relevant elements?	VVM	59	Yes	OK	OK
ii. accurate?	VVM	59	Yes	OK	OK
iii. providing the reader with a clear understanding of the nature of the proposed CDM project activity?	VVM	59	Yes	OK	OK
iv. Are there any changes/modifications compared to the webhosted PDD?	VVM	59	Compared with web hosted PoA-DD, the current version 01 has no change.	OK	OK
c. Is the proposed CDM project activity in existing facilities or or utilizing existing equipments?	VVM	60	The project include: <ul style="list-style-type: none"> <li>• New installation of biomass heat generation system or as a replacement</li> <li>• Retrofit of an existing facility by switching from fossil fuel to biomass.</li> <li>• Adding renewable energy unit in an existing renewable energy facility</li> </ul>	OK	OK
d. Is the CDM project activity one of the following types:	VVM	60			
i. Large scale?	VVM	60	No	OK	OK
ii. Non-bundled small scale projects with emission reductions exceeding 15,000 tonnes per year?	VVM	60	Yes	OK	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. Bundled small scale projects, each with emission reductions not exceeding 15,000 tonnes?	VVM	60	No	OK	OK
e. If yes to (c) and (d) above, was a physical site inspection conducted to confirm that the description in the PDD reflects the proposed CDM project activity, unless other means are specified in the methodology?	VVM	60	Yes. The site-visit was conducted by BV validation team on 10 <sup>th</sup> November 2011.	OK	OK
f. If yes to (d.iii) above, was the number of physical site visits base on sampling?	VVM	60	N/A	-	-
g. If yes is the sampling size appropriately justified through statistical analysis?	VVM	60	N/A	-	-
h. For other individual proposed small scale CDM project activities with emission reductions not exceeding 15,000 tonnes per year, was a physical site inspection conducted?	VVM	61	N/A	-	-
i. For all other proposed CDM project activities not referred to in paragraphs 59 – 61, and for other individual proposed small scale CDM project activities with emission reductions not exceeding 15,000 tonnes per year, was a physical site inspection conducted?	VVM	62	N/A	-	-
j. If no, was it appropriately justified?	VVM	62	N/A	-	-
k. Does the proposed CDM project activity involve the alteration of an existing installation or process?	VVM	63	N/A	-	-
l. If yes, does the project description clearly state	VVM	63	N/A	-	-

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the differences resulting from the project activity compared to the pre-project situation?					
<b>5. Baseline and monitoring methodology</b>					
<b>a. General requirement</b>					
a. Do the the baseline and monitoring methodologies selected by the project participants comply with the methodologies previously approved by the CDM Executive Board?	VVM	65	Yes	OK	OK
b. Is the selected methodology applicable to the project activity?	VVM	66	Refer to (5.b.a) below	-	-
c. Had the PP correctly applied the selected methodology?	VVM	66	Refer to (5.b.d) below	-	-
d. Had the selected methodology been correctly applied with respect to project boundary?	VVM	67	Refer to (5.c) below	-	-
e. Had the selected methodology been correctly applied with respect to baseline identification?	VVM	67	Refer to (5.d) below	-	-
f. Had the selected methodology been correctly applied with respect to Algorithms and/or formulae used to determine emission reductions?	VVM	67	Refer to (5.e) below	-	-
g. Had the selected methodology been correctly applied with respect to additionality?	VVM	67			
i. Specific questions per methodology regarding application of the methodology with respect to additionality.			Refer to (3.h) above	-	-
h. Had the selected methodology been correctly applied with respect to monitoring methodology?	VVM	67			

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. Specific questions per methodology regarding application of the methodology with respect to monitoring methodology.			Refer to (3.bb) above	-	-
<b><i>b. Applicability of the selected methodology to the project activity</i></b>					
a. Is the selected baseline and monitoring methodology, previously approved by the CDM Executive Board, applicable to the project activity including that the used version is valid?	VVM	68			
i. Specific questions per methodology regarding applicability.			Refer to (3.u) above	-	-
b. Has the DOE applied specific guidance provided by the CDM Executive Board in respect to the applicable approved methodology?	VVM	69	Yes	OK	OK
c. Is the methodology correctly quoted?	VVM	70	Yes. In the POA-DD, the applied methodology is AMS-I.C. "Thermal energy production with or without electricity" (Version 19; 03 <sup>rd</sup> June 2011).	OK	OK
d. Are the applicability conditions of the methodology met?	VVM	71			
ii. Specific questions per methodology regarding applicability conditions.			Refer to (3.u) above	-	-
e. Is the project activity expected to result in emissions other than those allowed by the methodology?	VVM	71	N/A	-	-
f. Is the choice of the methodology justified?	VVM	71	Yes	OK	OK
g. Have the project participants shown that the project activity meets each of the applicability	VVM	71	Refer to (5.b.d) above	-	-

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
conditions or the approved methodology?					
h. Have the project participants shown that the project activity meets each of the applicability conditions of any tool or other methodology component referred to the methodology?	VVM	71			
iii. Specific questions per methodology regarding applicability conditions of any tool or other methodology component referred to the methodology.			Refer to (3.u) above	-	-
i. Is the DOE, based on local and sectoral knowledge, aware that comparable information is available from sources other than that used in the PDD?	VVM	71	Yes. The information from the PDD has been cross-checked with the FSR that was approved by local authorities.	OK	OK
j. If yes, was the PDD cross checked against the other sources to confirm that the project activity meets the applicability conditions of the methodology? (provide the reference to these choices)	VVM	71	Yes	OK	OK
k. Can a determination regarding the applicability of the selected methodology to the proposed CDM project activity be made?	VVM	72	Yes	OK	OK
l. If no, clarification of the methodology was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	72	N/A	-	-
m. If answer to (5.b.d) above is “no”, revision or deviation from the methodology was requested, in accordance with the guidance provided by the	VVM	73	N/A	-	-

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CDM Executive Board?					
n. If yes to (5.b.l) and (5.b.m) above, a request for registration was submitted before the CDM Executive Board has approved the proposed deviation or revision?	VVM	74	N/A	-	-
<b>c. Project boundary</b>					
a. Does the PDD correctly describe the project boundary, including the physical delineation of the proposed CDM project activity included within the project boundary for the purpose of calculating project and baseline emissions for the proposed CDM project activity?	VVM	78			
i. Specific questions per methodology regarding application of the methodology with respect to project boundary.			Refer to (3.v) above	OK	OK
b. Is the delineation in the PDD of the project boundary correct?	VVM	79	Yes	OK	OK
c. Does the delineation in the PDD of the project boundary meet the requirements of the selected baseline?	VVM	79	Yes	OK	OK
d. Have changes been made to the project boundary in comparison to the webhosted PDD. If yes please comment on the reason for the changes.	VVM	79	No	OK	OK
e. Have all sources and GHGs required by the methodology been included within the project boundary?	VVM	79	Yes. Only CO <sub>2</sub> emission is considered as described in section E.3 of the PoA-DD.	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
f. Does the methodology allow project participant to choose whether a source or gas is to be included within the project boundary?	VVM	79	Yes. N <sub>2</sub> O and CH <sub>4</sub> are excluded for simplification.	OK	OK
g. If yes, have the project participants justified that choice?	VVM	79	Yes	OK	OK
h. If yes, is the justification provided reasonable? (provide reference to the supporting documented evidence provided by the project participants)	VVM	79	Yes. The validation team has checked the supporting documents.	OK	OK
<b>d. Baseline identification</b>					
a. Does the PDD identify the baseline for the proposed CDM project activity, defined as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed CDM project activity?	VVM	81	Yes. The baseline is defined according to AMS-I.C. Version 19 as follows: “For renewable energy technologies that displace technologies using fossil fuels, the simplified baseline is the fuel consumption of the technologies that would have been used in the absence of the project activity times an emission coefficient for the fossil fuel displaced. For calculating the emission factor, reliable local or national data shall be used. IPCC default values shall be used only when country or project specific data are not available or demonstrably difficult to obtain.”	OK	OK
b. Has any procedure contained in the methodology to identify the most reasonable baseline scenario, been correctly applied?	VVM	82			
i. Specific questions per methodology regarding application of any procedure contained in the methodology to identify the most reasonable			Refer to (3.x) above	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
baseline scenario.					
c. Does the selected methodology require use of tools (such as the “Tool for the demonstration and assessment of additionality” and the “Combined tool to identify the baseline scenario and demonstrate additionality”) to establish the baseline scenario?	VVM	82	Yes. selected methodology requires using “Tool for the demonstration and assessment of additionality” (Version 05.2.1; 11 <sup>th</sup> August 2011) in accordance with AMS-I.C. Version 19.	OK	OK
d. If yes, was the methodology consulted on the application of these tools? (In such cases, the guidance in the methodology shall supersede the tool.)	VVM	82			
i. Specific questions per methodology regarding application of tools to establish the most reasonable baseline scenario.			Refer to (3.x) above	-	-
e. Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	VVM	83	Yes. There are 3 scenarios can be considered: <ul style="list-style-type: none"> <li>• New installation of biomass heat generation system or as a replacement</li> <li>• Retrofit of an existing facility by switching from fossil fuel to biomass.</li> <li>• Adding renewable energy unit in an existing renewable energy facility</li> </ul>	OK	OK
f. If yes, are all scenarios that are considered by the project participants and are supplementary to those required by the methodology reasonable in the context of the proposed CDM project activity?	VVM	83	Yes	OK	OK
g. Has any reasonable alternative scenario been excluded?	VVM	83	No	OK	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
h. Is the baseline scenario identified reasonably supported by:	VVM	84			
i. Assumptions?	VVM	84	No. All evidences to identify baseline scenario are clearly for the determination of validation team	OK	OK
ii. Calculations?	VVM	84	No. All evidences to identify baseline scenario are clearly for the determination of validation team	OK	OK
iii. Rationales?	VVM	84	No. All evidences to identify baseline scenario are clearly for the determination of validation team	OK	OK
i. Are the documents and sources referred to in the PDD correctly quoted and interpreted?	VVM	84	Yes	OK	OK
j. Was the information provided in the PDD cross checked with other verifiable and credible sources, such as local expert opinion, if available? (identify the sources)	VVM	84	Yes. All document and source links provided were sufficiently checked and confirmed by validation team.	OK	OK
k. Have all applicable CDM requirements been taken into account in the identification of the baseline scenario for the proposed CDM project activity?	VVM	85	Yes	OK	OK
l. Have all relevant policies and circumstances been identified and correctly considered in the PDD, in accordance with the guidance by the CDM Executive Board?	VVM	85	Yes	OK	OK
m. Does the PDD provide a verifiable description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take	VVM	86	Yes	OK	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
place in the absence of the proposed CDM project activity?					
<b><i>e. Algorithms and/or formulae used to determine emission reductions</i></b>					
a. Do the steps taken and equations applied to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected baseline and monitoring?	VVM	89	Yes	OK	OK
b. Have the equations and parameters in the PDD been correctly applied with respect those in the select approved methodology?	VVM	90			
i. Specific questions per methodology regarding steps taken and equations and parameters applied to calculate project emissions, baseline emissions, leakage and emission reductions.			Refer to (3.y) above	-	-
c. Does the methodology provide for selection between different options for equations or parameters?	VVM	90	Yes	OK	OK
d. If yes, has adequate justification been provided (based on the choice of the baseline scenario, context of the proposed CDM project activity and other evidence provided)?	VVM	90	Yes. Relevant justifications are provided.	OK	OK
e. If yes, have correct equations and parameters been used, in accordance with the methodology selected?	VVM	90	Refer to (5.e.b) above	-	-
f. Will data and parameters be monitored	VVM	91	Yes. Via validating the monitoring plan and relevant	OK	OK

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throughout the crediting period of the proposed CDM project activity?			procedures, validation team confirmed that parameters and data will be properly monitored by responsible persons of the Project.		
g. If no, and these data and parameters will remain fixed throughout the crediting period, are all data sources and assumptions:	VVM	91			
i. Appropriate and correct?	VVM	91	N/A	-	-
ii. Applicable to the proposed CDM project activity?	VVM	91	N/A	-	-
iii. Resulting in a conservative estimate of the emission reductions?	VVM	91	N/A	-	-
h. Will data and parameters be monitored on implementation and hence become available only after validation of the project activity?	VVM	91	N/A	-	-
i. If yes, are the estimates provided in the PDD for these data and parameters reasonable?	VVM	91	N/A	-	-
<b>6. Additionality of a project activity</b>					
a. Does the PDD describe how a proposed CDM project activity is additional?	VVM	94	Yes	OK	OK
b. Were the following steps of the tool to assess additionality used:	EB 39	Ann 10			
i. Identification of alternatives to the project activity?	EB 39	Ann 10	Yes	OK	OK
ii. Investment analysis to determine that the proposed project activity is either: 1) not the most economically or financially attractive, or 2) not economically or financially feasible?	EB 39	Ann 10	Yes. Approach 2: Investment Barrier		

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. Barriers analysis?	EB 39	Ann 10	Yes. Approach 1: Micro scales CPAs employ renewable energy as their primary technology up to 5 MW capacity (EB60; Annex 25)	OK	OK
iv. Common practice analysis?	EB 39	Ann 10	N/A	-	
c. In step 1 (i) have all the sub-steps as below been followed?	EB 39	Ann 10			
i. Sub-step 1a: Define alternatives to the project activity	EB 39	Ann 10	Yes. The alternatives are: <ul style="list-style-type: none"> <li>• New installation of biomass heat generation system or as a replacement</li> <li>• Retrofit of an existing facility by switching from fossil fuel to biomass.</li> <li>• Adding renewable energy unit in an existing renewable energy facility</li> </ul>	OK	OK
ii. Sub-step 1b: Consistency with mandatory laws and regulations	EB 39	Ann 10	Yes. By checking Vietnamese and local laws and regulations, validation team confirmed that the defined alternatives are consistent with the requirements.	OK	OK
d. Have the following alternatives been included while defining alternatives as per sub-step 1a?	EB 39	Ann 10			
i. (a) The proposed project activity undertaken without being registered as a CDM project activity;	EB 39	Ann 10	N/A	-	-
ii. (b) Other realistic and credible alternative scenario(s) to the proposed CDM project activity scenario that deliver outputs services or services with comparable quality, properties	EB 39	Ann 10	Yes	OK	OK

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and application areas, taking into account, where relevant, examples of scenarios identified in the underlying methodology;					
iii. (c) If applicable, continuation of the current situation (no project activity or other alternatives undertaken).	EB 39	Ann 10	N/A	-	-
e. Has the project participant included the technologies or practices that provide outputs or services with comparable quality, properties and application areas as the proposed CDM project activity and that have been implemented previously or are currently being introduced in the relevant country/region?	EB 39	Ann 10	Yes	OK	OK
f. Has the outcome of Step 1a: Identified realistic and credible alternative scenario(s) to the project activity done correctly? Please briefly mention the outcome.	EB 39	Ann 10	N/A	-	-
g. Is the alternative(s) in compliance with all mandatory applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution.?	EB 39	Ann 10	Yes	OK	OK
h. If an alternative does not comply with all mandatory applicable legislation and regulations, has it been shown that, based on an examination of current practice in the country or region in which the law or regulation applies, those	EB 39	Ann 10	N/A	-	-

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applicable legal or regulatory requirements are systematically not enforced and that noncompliance with those requirements is widespread in the country?					
i. Has the outcome of Step 1b: Identified realistic and credible alternative scenario(s) to the project activity that are in compliance with mandatory legislation and regulations taking into account the enforcement in the region or country and EB decisions on national and/or sectoral policies and regulations done correctly? Please state the outcome.	EB 39	Ann 10	N/A	-	-
j. Has PP selected Step 2 (Investment analysis) or Step 3 (Barrier analysis) or both Steps 2 and 3?	EB 39	Ann 10	Yes. Both Step 2 and 3	OK	OK
k. In step 2, have all the sub-steps as below been followed?	EB 39	Ann 10			
i. Sub-step 2a: Determine appropriate analysis method;	EB 39	Ann 10	N/A	-	-
ii. Sub-step 2b: Option I. Apply simple cost analysis;	EB 39	Ann 10	N/A	-	-
iii. Sub-step 2b: Option II. Apply investment comparison analysis;	EB 39	Ann 10	N/A	-	-
iv. Sub-step 2b: Option III. Apply benchmark analysis;	EB 39	Ann 10	N/A	-	-
v. Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III);	EB 39	Ann 10	N/A	-	-

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
vi. Sub-step 2d: Sensitivity analysis (only applicable to Options II and III).	EB 39	Ann 10	N/A	-	-
I. In sub-step 2a has the determination of appropriate method of analysis done as per the guidance as below?	EB 39	Ann 10			
i. Simple cost analysis if the CDM project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than CDM related income (Option I).	EB 39	Ann 10	N/A	-	-
ii. Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III). Specify option used with justification.	EB 39	Ann 10	N/A	-	-
m. Has the below guideline followed for sub-step 2b Option I. Apply simple cost analysis? Document the costs associated with the CDM project activity and the alternatives identified in Step1 and demonstrate that there is at least one alternative which is less costly than the project activity.	EB 39	Ann 10	N/A	-	-
n. Has the below guideline followed for sub-step 2b Option II. Apply investment comparison analysis? Identify the financial indicator, such as IRR, NPV, cost benefit ratio, or unit cost of service most suitable for the project type and decision-making context. Please specify	EB 39	Ann 10	N/A	-	-
o. Has the below guideline followed for Sub-step 2b: Option III. Apply benchmark analysis?	EB 39	Ann 10			

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i. Identify the financial/economic indicator, such as IRR, most suitable for the project type and decision context.	EB 39	Ann 10	N/A	-	-
ii. When applying Option II or Option III, the financial/economic analysis shall be based on parameters that are standard in the market, considering the specific characteristics of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer. Only in the particular case where the project activity can be implemented by the project participant, the specific financial/economic situation of the company undertaking the project activity can be considered.	EB 39	Ann 10	N/A	-	-
iii. Discount rates and benchmarks shall be derived from: (a) Government bond rates, increased by a suitable risk premium to reflect private investment and/or the project type, as substantiated by an independent (financial) expert or documented by official publicly available financial data; (b) Estimates of the cost of financing and required return on capital (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on bankers views and private equity investors/funds' required	EB 39	Ann 10	N/A	-	-

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return on comparable projects; (c) A company internal benchmark (weighted average capital cost of the company), only in the particular case referred to above in 2. The project developers shall demonstrate that this benchmark has been consistently used in the past, i.e. that project activities under similar conditions developed by the same company used the same benchmark; (d) Government/official approved benchmark where such benchmarks are used for investment decisions; (e) Any other indicators, if the project participants can demonstrate that the above Options are not applicable and their indicator is appropriately justified. Please specify benchmark and justify.					
p. Has the below guideline followed for Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III)?	EB 39	Ann 10			
i. Calculate the suitable financial indicator for the proposed CDM project activity and, in the case of Option II above, for the other alternatives. Include all relevant costs (including, for example, the investment cost, the operations and maintenance costs), and revenues (excluding CER revenues, but possibly including inter alia subsidies/fiscal incentives, ODA, etc, where applicable), and, as	EB 39	Ann 10	N/A	-	-

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appropriate, non-market cost and benefits in the case of public investors if this is standard practice for the selection of public investments in the host country.					
ii. Present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the CDM-PDD, or in separate annexes to the CDM-PDD.	EB 39	Ann 10	N/A	-	-
iii. Justify and/or cite assumptions.	EB 39	Ann 10	N/A	-	-
iv. In calculating the financial/economic indicator, the project's risks can be included through the cash flow pattern, subject to project-specific expectations and assumptions.	EB 39	Ann 10	N/A	-	-
v. Assumptions and input data for the investment analysis shall not differ across the project activity and its alternatives, unless differences can be well substantiated.	EB 39	Ann 10	N/A	-	-
vi. Present in the CDM-PDD a clear comparison of the financial indicator for the proposed CDM activity. Please specify details for above.	EB 39	Ann 10	N/A	-	-
q. Has the below guideline followed for Sub-step 2d: Sensitivity analysis (only applicable to Options II and III)? Include a sensitivity analysis that shows whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions.	EB 39	Ann 10	N/A	-	-

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r. Has the outcome of Step 2 clearly mentioned with justification?	EB 39	Ann 10	N/A	-	-
s. In step 3: Barrier analysis have all the sub-steps as below been followed?	EB 39	Ann 10			
i. Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project activity;	EB 39	Ann 10	N/A	-	-
ii. Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity).	EB 39	Ann 10	N/A	-	-
t. Has the below guideline followed for Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project?	EB 39	Ann 10			
i. (a) Investment barriers: For alternatives undertaken and operated by private entities: Similar activities have only been implemented with grants or other non-commercial finance terms. No private capital is available from domestic or international capital markets due to real or perceived risks associated with investment in the country where the proposed CDM project activity is to be implemented, as demonstrated by the credit rating of the country or other country investments reports of reputed origin.	EB 39	Ann 10	N/A	-	-
ii. (b) Technological barriers: Skilled and/or	EB	Ann	N/A	-	-

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properly trained labour to operate and maintain the technology is not available in the relevant country/region, which leads to an unacceptably high risk of equipment disrepair and malfunctioning or other underperformance; Lack of infrastructure for implementation and logistics for maintenance of the technology, Risk of technological failure: the process/technology failure risk in the local circumstances is significantly greater than for other technologies that provide services or outputs comparable to those of the proposed CDM project activity, as demonstrated by relevant scientific literature or technology manufacturer information, The particular technology used in the proposed project activity is not available in the relevant region.	39	10			
iii. (c) Barriers due to prevailing practice: The project activity is the “first of its kind”.	EB 39	Ann 10	N/A	-	-
iv. (d) Other barriers, preferably specified in the underlying methodology as examples.	EB 39	Ann 10	N/A	-	-
u. Has the outcome from Step 3a clearly mentioned in PDD?	EB 39	Ann 10	N/A	-	-
v. Has the below guideline followed for Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project	EB 39	Ann 10			

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activity)?					
i. If the identified barriers also affect other alternatives, explain how they are affected less strongly than they affect the proposed CDM project activity. In other words, demonstrate that the identified barriers do not prevent the implementation of at least one of the alternatives. Any alternative that would be prevented by the barriers identified in Sub-step 3a is not a viable alternative, and shall be eliminated from consideration.	EB 39	Ann 10	N/A	-	-
ii. Provide transparent and documented evidence, and offer conservative interpretations of this documented evidence, as to how it demonstrates the existence and significance of the identified barriers and whether alternatives are prevented by these barriers.	EB 39	Ann 10	N/A	-	-
iii. The type of evidence to be provided should include at least one of the following: (a) Relevant legislation, regulatory information or industry norms; (b) Relevant (sectoral) studies or surveys (e.g. market surveys, technology studies, etc) undertaken by universities, research institutions, industry associations, companies, bilateral/multilateral institutions, etc; (c) Relevant statistical data from national or international statistics; (d) Documentation of	EB 39	Ann 10	N/A	-	-

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relevant market data (e.g. market prices, tariffs, rules); (e) Written documentation of independent expert judgments from industry, educational institutions (e.g. universities, technical schools, training centres), industry associations and others. Please specify.					
w. Has the outcome from Step 3 clearly mentioned in PDD?	EB 39	Ann 10	N/A	-	-
x. In step 4: Common practise analysis have all the sub-steps as below followed?	EB 39	Ann 10			
i. Sub-step 4a: Analyze other activities similar to the proposed project activity;	EB 39	Ann 10	N/A	-	-
ii. Sub-step 4b: Discuss any similar Options that are occurring.	EB 39	Ann 10	N/A	-	-
y. Has the below guideline followed for Sub-step 4a: Analyze other activities similar to the proposed project activity? Provide an analysis of any other activities that are operational and that are similar to the proposed project activity. Other CDM project activities are not to be included in this analysis. Provide documented evidence and, where relevant, quantitative information. On the basis of that analysis, describe whether and to which extent similar activities have already diffused in the relevant region.	EB 39	Ann 10	N/A	-	-
z. Has the below guideline followed for Sub-step 4b: Discuss any similar Options that are occurring? If	EB 39	Ann 10	N/A	-	-

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similar activities are identified, then it is necessary to demonstrate why the existence of these activities does not contradict the claim that the proposed project activity is financially/economically unattractive or subject to barriers. This can be done by comparing the proposed project activity to the other similar activities, and pointing out and explaining essential distinctions between them that explain why the similar activities enjoyed certain benefits that rendered it financially/economically attractive (e.g., subsidies or other financial flows) and which the proposed project activity cannot use or did not face the barriers to which the proposed project activity is subject. In case similar projects are not accessible, the PDD should include justification about non-accessibility of data/information.					
aa. Has the outcome from Step 4 clearly mentioned in PDD?	EB 39	Ann 10	N/A	-	-
bb. Has it been proved that the project is additional?	EB 39	Ann 10	N/A	-	-
cc. Has the PP demonstrated additionality by explaining Investment barrier, Access-to-finance barrier, Technological barrier, Barrier due to prevailing practice or other barriers?	EB 35	Ann 34	Yes	OK	OK
dd. If Investment barrier has been explained, is it	EB	Ann	Yes. The investment barrier shall be demonstrated	OK	OK

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demonstraed that financilly more viable alternative to the project activity would have led to higher emissions? Please explain.	35	34	based on the investment analysis as per sub-step 2 b, option II-Investment Comparison Analysis of "Tool for the demonstration and assessment of additionality".		
ee. If Access-to-finance has been explained, is it demonstraed that the project activity could not access appropriate capital without consideration of the CDM revenues? Please explain.	EB 35	Ann 34	N/A	-	-
ff. If Technological barrier has been explained, is it demonstraed that a less technologically advanced alternative to the project activity involves lower risks due to the performance uncertainty or low market share of the new technology adopted for the project activity and so would have led to higher emissions? Please explain.	EB 35	Ann 34	Yes. The Technological barrier is explained by using micro scales CPAs that employ renewable energy as their primary technology up to 5 MW capacity (EB60; Annex 25)	OK	OK
gg. If prevailing practise barrier has been explained, is it demonstrated that the prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions? Please explain.	EB 35	Ann 34	N/A	-	-
hh. If other barrier has been explained, is it demonstrated that Other barriers such as institutional barriers or limited information, managerial resources, organizational capacity, or capacity to absorb new technologies would prevent the project activity any way?	EB 35	Ann 34	N/A	-	-

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ii. Have the project participants identified the most relevant barrier?	EB 35	Ann 34	N/A	-	-
jj. Have the project participants provided transparent and documented third party evidence such as national/international statistics, national/provincial policy and legislation, studies/surveys by independent agencies etc. to demonstrate the most relevant barrier? Please explain.	EB 35	Ann 34	Yes. By means of checking relevant evidences, the validation team confirms that the Project is additional.	OK	

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
<b><i>a. Prior consideration of the clean development mechanism</i></b>					
a. Is the project activity start date prior to the date of publication of the PDD for stakeholder comments?	VVM	98	Yes. The start date of the POA is 10 <sup>th</sup> October 2011 which is prior to the publication period (11 <sup>th</sup> October 2011 – 09 <sup>th</sup> November 2011)	OK	OK
b. If yes, were the CDM benefits considered necessary in the decision to undertake the project as a proposed CDM project activity?	VVM	98	Yes	OK	OK
c. Is the start date of the project activity, reported in the PDD, in accordance with the “Glossary of CDM terms”, which states that “The starting date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a project activity begins.”?	VVM	99	Yes	OK	OK
d. Does the project activity require construction, retrofit or other modifications?	VVM	99	Yes	OK	OK
e. If yes, is it ensured that the date of commissioning cannot be considered as the project activity start date?	VVM	99	Yes	OK	OK
f. Is it a new project activity (a project activity with a start date on or after 02 August 2008) or an existing project activity (a project activity with a start date before 02 August 2008)?	VVM	100	Yes. This is a new project activity due to having a starting date after 02 <sup>nd</sup> August 2008.	OK	OK
g. For a new project, for which PDD has not been published for global stakeholder consultation or a new methodology proposed to the CDM Executive Board before the project activity start	VVM	101	N/A	-	-

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
date, had the PP informed the Host Party DNA and/or the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status? (Provide reference to such confirmation from host Party DNA and/or UNFCCC secretariat).					
h. For an existing project activity, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, are the following evidences provided:	VVM	102			
i. evidence that must indicate that awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project, including, inter alia:	VVM	102			
a. minutes and/or notes related to the consideration of the decision by the Board of Directors, or equivalent, of the project participant, to undertake the project as a proposed CDM project activity?	VVM	101	N/A	-	-
ii. reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation, including, inter alia:	VVM	102	N/A		
a. contract with consultants for CDM/PDD/methodology services?	VVM	102	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
b. Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon funds)?	VVM	102	N/A	-	-
c. evidence of agreements or negotiations with a DOE for validation services?	VVM	102	N/A	-	-
d. submission of a new methodology to the CDM Executive Board?	VVM	102	N/A	-	-
e. publication in newspaper?	VVM	102	N/A	-	-
f. interviews with DNA?	VVM	102	N/A	-	-
g. earlier correspondence on the project with the DNA or the UNFCCC secretariat?	VVM	102	N/A	-	-
h. Has the chronology of events including time lines been appropriately captured and explained/detailed in the PDD?	VVM	102	N/A	-	-
<b>b. Identification of alternatives</b>					
a. Does the approved methodology that is selected by the proposed CDM project activity prescribe the baseline scenario and hence no further analysis is required?	VVM	105	Yes	OK	OK
b. If no, does the PDD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	VVM	105	N/A	-	-
c. Does the list of alternatives given in the PDD	VVM	106			

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ensure that:					
i. the list of alternatives includes as one of the options that the project activity is undertaken without being registered as a proposed CDM project activity?	VVM	106	N/A	-	-
ii. the list contains all plausible alternatives that the DOE, on the basis of its local and sectoral knowledge, considers to be viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity?	VVM	106	Yes	OK	OK
iii. the alternatives comply with all applicable and enforced legislation?	VVM	106	Yes	OK	OK
<b>c. Investment analysis</b>					
a. Has investment analysis been used to demonstrate the additionality of the proposed CDM project activity?	VVM	108	Yes	OK	OK
b. If yes, does the PDD provide evidence that the proposed CDM project activity would not be:	VVM	108			
i. the most economically or financially attractive alternative?	VVM	108	Yes	OK	OK
ii. economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs)?	VVM	108	N/A	-	-
c. Was this shown by one of the following approaches?	VVM	109			
i. The proposed CDM project activity would	VVM	109	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
produce no financial or economic benefits other than CDM-related income. Document the costs associated with the proposed CDM project activity and the alternatives identified and demonstrate that there is at least one alternative which is less costly than the proposed CDM project activity.					
ii. The proposed CDM project activity is less economically or financially attractive than at least one other credible and realistic alternative.	VVM	109	Yes	OK	OK
iii. The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.	VVM	109	N/A	-	-
d. Is the period of assessment limited to the proposed crediting period of the CDM project activity?	EB 51	Ann 58	N/A	-	-
e. Does the project IRR and equity IRR calculations reflect the period of expected operation of the underlying project activity (technical lifetime), or - if a shorter period is chosen - include the fair value of the project activity assets at the end of the assessment period?	EB 51	Ann 58	N/A	-	-
f. Does the IRR calculation include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of	EB 51	Ann 58	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
assessment?					
g. Do the project participants justify the appropriateness of the period of assessment in the context of the underlying project activity, without reference to the proposed CDM crediting period?	EB 51	Ann 58	N/A	-	-
h. Does the cash flow in the final year include a fair value of the project activity assets at the end of the assessment period?	EB 51	Ann 58	N/A	-	-
i. Has the fair value been calculated in accordance with local accounting regulations where available, or international best practice?	EB 51	Ann 58	N/A	-	-
j. Does the fair value calculations include both the book value of the asset and the reasonable expectation of the potential profit or loss on the realization of the assets?	EB 51	Ann 58	N/A	-	-
k. Was depreciation, and other non-cash items related to the project activity, which have been deducted in estimating gross profits on which tax is calculated, added back to net profits for the purpose of calculating the financial indicator (e.g. IRR, NPV)?	EB 51	Ann 58	N/A	-	-
l. Has taxation been included as an expense in the IRR/NPV calculation in cases where the benchmark or other comparator is intended for post-tax comparisons?	EB 51	Ann 58	N/A	-	-
m. Are the input values used in all investment	EB	Ann	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
analysis valid and applicable at the time of the investment decision taken by the project participant?	51	58			
n. Is the timing of the investment decision consistent and appropriate with the input values?	EB 51	Ann 58	N/A	-	-
o. Are all the listed input values been consistently applied in all calculations?	EB 51	Ann 58	N/A	-	-
p. Does the investment analysis reflect the economic decision making context at point of the decision to recommence the project in the case of project activities for which implementation ceases after the commencement and where implementation is recommenced due to consideration of the CDM?	EB 51	Ann 58	N/A	-	-
q. Have project participants supplied the spreadsheet versions of all investment analysis?	EB 51	Ann 58	N/A	-	-
r. Are all formulas used in this analysis readable and all relevant cells be viewable and unprotected?	EB 51	Ann 58	N/A	-	-
s. In cases where the project participant does not wish to make such a spreadsheet available to the public has the PP provided an exact read-only or PDF copy for general publication?	EB 51	Ann 58	N/A	-	-
t. In case the PP wishes to black-out certain elements of the publicly available version, is it justifiable?	EB 51	Ann 58	N/A	-	-
u. Was the cost of financing expenditures (i.e. loan	EB	Ann	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
repayments and interest) included in the calculation of project IRR?	51	58			
v. In the calculation of equity IRR, has only the portion of investment costs which is financed by equity been considered as the net cash outflow?	EB 51	Ann 58	N/A	-	-
w. Has the portion of the investment costs which is financed by debt been considered a cash outflow in the calculation of equity IRR? (this is not allowed)	EB 51	Ann 58	N/A	-	-
x. Was a pre-tax benchmark be applied?	EB 51	Ann 58	N/A	-	-
y. In cases where a post-tax benchmark is applied, is actual interest payable taken into account in the calculation of income tax?	EB 51	Ann 58	N/A	-	-
z. In such situations, was interest calculated according to the prevailing commercial interest rates in the region, preferably by assessing the cost of other debt recently acquired by the project developer and by applying a debt-equity ratio used by the project developer for investments taken in the previous three years?	EB 51	Ann 58	N/A	-	-
aa. In cases where a benchmark approach is used is the applied benchmark appropriate to the type of IRR calculated?	EB 51	Ann 58	N/A	-	-
bb. Has local commercial lending rates or weighted average costs of capital (WACC) selected as appropriate benchmarks for a project IRR?	EB 51	Ann 58	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
cc. Has required/expected returns on equity selected as appropriate benchmark for an equity IRR?	EB 51	Ann 58	N/A	-	-
dd. In case benchmarks supplied by relevant national authorities selected is it applicable to the project activity and the type of IRR calculation presented?	EB 51	Ann 58	N/A	-	-
ee. In the cases of projects which could be developed by an entity other than the project participant is the benchmark applied based on publicly available data sources which can be clearly validated?	EB 51	Ann 58	N/A	-	-
ff. Have internal company benchmarks/expected returns (including those used as the expected return on equity in the calculation of a weighted average cost of capital - WACC) been applied in cases where there is only one possible project developer?	EB 51	Ann 58	N/A	-	-
gg. In such cases, have these values been used for similar projects with similar risks, developed by the same company or, if the company is brand new, would have been used for similar projects in the same sector in the country/region?	EB 51	Ann 58	N/A	-	-
hh. Has a minimum clear evidence of the resolution by the company's Board and/or shareholders been provided to the effect as above?	EB 51	Ann 58	N/A	-	-
ii. Has a thorough assessment of the financial statements of the project developer - including	EB 51	Ann 58	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the proposed WACC - to assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects been conducted?					
jj. Does the risk premiums applied in the determination of required returns on equity reflect the risk profile of the project activity being assessed, established according to national/international accounting principles? (It is not considered reasonable to apply the rate general stock market returns as a risk premium for project activities that face a different risk profile than an investment in such indices.)	EB 51	Ann 58	N/A	-	-
kk. Has an investment comparison analysis and not a benchmark analysis used when the proposed baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services?	EB 51	Ann 58	N/A	-	-
ll. Have variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues been subjected to reasonable variation (positive and negative) and the results of this variation been presented in the PDD and be reproducible in the associated spreadsheets?	EB 51	Ann 58	N/A	-	-
mm. Have a corrective action been raised for a	EB	Ann	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
variable to be included in the sensitivity analysis which constitute less than 20% and have a material impact on the analysis ?	51	58			
nn. Is the range of variations selected is reasonable in the project context?	EB 51	Ann 58	N/A	-	-
oo. Dos the variations in the sensitivity analysis at least cover a range of +10% and -10%, unless this is not deemed appropriate in the context of the specific project circumstances?	EB 51	Ann 58	N/A	-	-
pp. In cases where a scenario will result in the project activity passing the benchmark or becoming the most financially attractive alternative, is an assessment done of the probability of the occurrence of this scenario in comparison to the likelihood of the assumptions in the presented investment analysis, taking into consideration correlations between the variables as well as the specific socio-economic and policy context of the project activity?	EB 51	Ann 58	N/A	-	-
qq. Was the plant load factor defined ex-ante in the CDM-PDD according to one of the following options:	EB 51	Ann 58			
i. The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval?	EB 51	Ann 58	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company)?	EB 51	Ann 58	N/A	-	-
rr. Was a thorough assessment of all parameters and assumptions used in calculating the relevant financial indicator, and determine the accuracy and suitability of these parameters using the available evidence and expertise in relevant accounting practices conducted?	VVM	111	N/A	-	-
ss. Were the parameters cross-checked against third-party or publicly available sources, such as invoices or price indices?	VVM	111	N/A	-	-
tt. Were feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants reviewed?	VVM	111	N/A	-	-
uu. Was the correctness of computations carried out and documented by the project participants assessed?	VVM	111	N/A	-	-
vv. Was the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions assessed?	VVM	111	N/A	-	-
ww. Is the type of benchmark applied is suitable for the type of financial indicator presented?	VVM	112	N/A	-	-
xx. Do any risk premiums applied determining the	VVM	112	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
benchmark reflect the risks associated with the project type or activity?					
yy. To determine this, was it assessed whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by:	VVM	112			
i. assessing previous investment decisions by the project participants involved?	VVM	112	N/A	-	-
ii. determining whether the same benchmark has been applied?	VVM	112	N/A	-	-
iii. determining if there are verifiable circumstances that have led to a change in the benchmark?	VVM	112	N/A	-	-
zz. Did the project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed CDM project activities?	VVM	113	N/A	-	-
xx. If yes:	VVM	113			
i. has the FSR been the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed?	VVM	113	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. Are the values used in the PDD and associated annexes fully consistent with the FSR?	VVM	113	N/A	-	-
iii. If not, was the appropriateness of the values validated?	VVM	113	N/A	-	-
iv. On the basis of its specific local and sectoral expertise, is confirmation provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision?	VVM	113	N/A	-	-
<b>d. Barrier analysis</b>					
a. Has barrier analysis been used to demonstrated the additionality of the proposed CDM project activity?	VVM	115	Yes	OK	OK
b. If yes, does the PDD demonstrate that the proposed CDM project activity faces barriers that:	VVM	115			
i. prevent the implementation of this type of proposed CMD project activity?	VVM	115	Yes	OK	OK
ii. do not prevent the implementation of at least one of the alternatives?	VVM	115	N/A	-	-
c. Are there any issues that have a clear direct impact on the financial returns of the project activity, other than: risk related barriers, for example risk of technical failure, that could have negative effects on the financial performance; or barriers related to the unavailability of sources of	VVM	116	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
finance for the project activity? {If yes, these issues cannot be considered barriers and shall be assessed by investment analysis. [Refer to (6.c) above]}					
d. Were the barriers determined as real by:	VVM	117			
i. assessing the available evidence and/or undertaking interviews with relevant individuals (including members of industry associations, government officials or local experts if necessary) to determine whether the barriers listed in the PDD exist?	VVM	117	N/A	-	-
ii. ensuring that existence of barriers is substantiated by independent sources of data such as relevant national legislation, surveys of local conditions and national or international statistics?	VVM	117	N/A	-	-
iii. Is existence of a barrier substantiated only by the opinions of the project participants? (If yes, this barrier cannot be considered as adequately substantiated)	VVM	117	N/A	-	-
e. Were the barriers determined as preventing the implementation of the project activity but not the implementation of at least one of the possible alternatives by applying local and sectoral expertise to judge whether a barrier or set of barriers would prevent the implementation of the proposed CDM project activity and would not	VVM	117	N/A	-	-

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
equally prevent implementation of <i>at least one of</i> the possible alternatives, in particular the identified baseline scenario?					
<b>e. Common practice analysis</b>					
a. Is this a proposed large-scale, or first-of-its kind small-scale project activity?	VVM	119	N/A	-	-
b. If yes, was common practice analysis carried out as a credibility check of the other available evidence used by the project participants to demonstrate additionality?	VVM	119	N/A	-	-
c. Was it assessed whether the geographical scope (e.g. defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type? (For certain technologies the relevant region for assessment will be local and for others it may be transnational/global).	VVM	120	N/A	-	-
d. Was a region other than the entire host country chosen?	VVM	120	N/A	-	-
e. If yes, was the explanation why this region is more appropriate assessed?	VVM	120	N/A	-	-
f. Using official sources and local and industry expertise, was it determined to what extent similar and operational projects (e.g., using similar technology or practice), other than CDM project activities, have been undertaken in the	VVM	120	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
defined region?					
g. Are similar and operational projects, other than CDM project activities, already "widely observed and commonly carried out" in the defined region?	VVM	120	N/A	-	-
h. If yes, was it assessed whether there are essential distinctions between the proposed CDM project activity and the other similar activities?	VVM	120	N/A	-	-
<b>7. Monitoring plan</b>					
a. Does the PDD include a monitoring plan?	VVM	122	Yes	OK	OK
b. Is this monitoring plan based on the approved monitoring methodology applied to the proposed CDM project activity?	VVM	122	Yes	OK	OK
c. Were the list of parameters required by the the selected methodology identified?	VVM	123	Yes	OK	OK
d. Does the monitoring plan contains all necessary parameters?	VVM	123	Yes	OK	OK
e. Are the parameters clearly described?	VVM	123	Yes	OK	OK
f. Does the means of monitoring described in the plan comply with the requirements of the methodology?	VVM	123	Yes	OK	OK
g. Specific questions per methodology regarding parameters.	VVM	123	Refer to (3.aa) above	-	-
h. Are the monitoring arrangements described in the monitoring plan feasibl within the project design?	VVM	123	Yes. Details of the monitoring plan are described in section E.7.2 of the PoA-DD.	OK	OK
i. Does the monitoring plan provide details regarding calibration of monitoring equipments/ instruments or does it include zero check as a	EB 24	37	Yes	OK	OK

## VALIDATION REPORT



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substitute for calibration? (zero check can not be considered as a substitute for calibration)					
j. Are the following means of implementation of the monitoring plan sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified:	VVM	123			
i. data management procedures?	VVM	123	Yes	OK	OK
ii. quality assurance procedures?	VVM	123	Yes	OK	OK
iii. quality control procedures?	VVM	123	Yes	OK	OK
<b>8. Sustainable development</b>					
a. Does the CDM project activity assists Parties not included in Annex I to the Convention in achieving sustainable development?	VVM	125	Yes	OK	OK
b. Does the letter of approval by the DNA of the host Party confirm the contribution of the proposed CDM project activity to the sustainable development of the host Party?	VVM	126	N/A	-	-
<b>9. Local stakeholder consultation</b>					
a. Were local stakeholders (public, including individuals, groups or communities affected, of likely to be affected, by the proposed CDM project activity or actions leading to the implementation of such an activity) invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website?	VVM	128	N/A. Local stakeholders' consultation is done at CPA level.	-	-



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
b. Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVM	129	N/A	-	-
c. Is the summary of the comments received as provided in the PDD complete?	VVM	129	N/A	-	-
d. Have the project participants taken due account of any comments received and described this process in the PDD?	VVM	129	N/A	-	-
<b>10. Environmental impacts</b>					
a. Have the project participants submitted documentation on the analysis of the environmental impacts of the project activity?	VVM	131	N/A. Environmental impacts analysis is done at CPA level.	-	-
b. Have the project participants undertaken an analysis of environmental impacts?	VVM	132	N/A	-	-
c. Does the host Party require an environmental impact assessment?	VVM	132	N/A	-	-
d. If yes, have the project participants undertaken an environmental impact assessment?	VVM	132	N/A	-	-

**Table 2 Specific validation activities**

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
<b>1. Project design of programme of activities</b>					
<b>a. Additionality of PoA</b>	<b>EB63</b>	<b>Ann2</b>			
i. Is additionality demonstrated by establishing that in the absence of CDM, none of the implemented CPA would occur?	EB63	Ann2	Yes. The demonstration was provided in section E.5 of the POA-DD.	OK	OK
ii. If PoAs include one or more microscale projects as CPA, is eligibility criteria derived from all the relevant requirement of the “Guidelines for demonstrating additionality of micro project activities” included?	EB63	Ann2	N/A	-	-
iii. If PoAs include one or more small-scale projects as CPA, is eligibility criteria derived from all the relevant requirements of Attachment A of Appendix B of the “Simplified modalities and procedures for small-scale CDM project activities” included?	EB63	Ann2	Yes	OK	OK
iv. If PoAs include one or more large-scale projects as CPA, is eligibility criteria derived from all the relevant requirements contained in the additionality section of the large-scale methodology(ies) included?	EB63	Ann2	N/A	-	-
v. Has the CME demonstrated that compliance with the additionality-related eligibility criteria set in the PoA design document ensures that all the	EB63	Ann2	Yes.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
relevant additionality-related guidelines, tools or any requirements embedded in the methodology(ies) are met?					
vi. Has the CME documented the compliance with the eligibility criteria in each of the CPA design documents?	EB63	Ann2	Yes. The compliance with eligibility criteria is provided on section E.2 of the PoA-DD.	OK	OK
vii. For PoAs involving combinations of technologies/measures and/or methodologies, is the eligibility criteria relative to each of them proposed to demonstrate additionality?	EB63	Ann2	N/A	-	-
<b>b. Management system of CME</b>	<b>EB63</b>	<b>Ann3</b>			
i. Is clear definition of roles and responsibilities of personnel in the process of inclusion of CPAs, including a review of their competencies made available to the DOE at the time of validation of the PoA?	EB63	Ann3	Yes. The operational, management and monitoring plan are provided in section A.4.4 of the PoA-DD	OK	OK
ii. Have records of arrangements for training and capacity development for personnel been made available to the DOE at the time of validation of the PoA?	EB63	Ann3	Yes	OK	OK
iii. Have procedures for technical review of inclusion of CPAs been made available to the DOE at the time of validation of PoA	EB63	Ann3	Yes	OK	OK
iv. Is a procedure to avoid double counting	EB63	Ann3	Yes	OK	OK



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
available?					
v. Have records and documentation control process for each CPA under the PoA been made available to the DOE at the time of request for inclusion of the CPA?	EB63	Ann3	Yes	OK	OK
vi. Have measures for continual improvements of the PoA management been made available to the DOE at the time of validation of the PoA?	EB63	Ann3	Yes	OK	OK
vii. Are any other relevant elements available?	EB63	Ann3	N/A	-	-
<b>b. Eligible criteria</b>	<b>EB63</b>	<b>Ann3</b>			
i. Is the geographical boundary of the CPA including any time-induced boundary consistent with the geographical boundary set in the PoA?	EB63	Ann3	Yes. The location of which the CPAs will be implemented is within Viet Nam and the coordinates are: • Longitude: from 102°09' to 109°30' East, • Latitude: from 8°10' to 23°24' North	OK	OK
ii. Are conditions that avoid double counting of emission reductions like unique identifications of product and end-user locations available?	EB63	Ann3	Yes	OK	OK
iii. Do the specifications of technology/measure include the level and type of service? Do performance specifications include compliance with testing/certifications.	EB63	Ann3	Yes	OK	OK
iv. Are conditions to check the start date of the CPA through documentary evidence included?	EB63	Ann3	Yes	OK	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
v. Are conditions that ensure compliance with applicability and other requirements of single or multiple methodology(ies) applied by CPAs included?	EB63	Ann3	Yes. The conditions that ensure compliance with applicability are provided in section A.4.2.2. of the PoA-DD	OK	OK
vi. Are the conditions that ensure that CPAs meet the requirements pertaining to the demonstration of additionality included?	EB63	Ann3	Yes.	OK	OK
vii. Do the PoA-specific requirements stipulated by the CMEs include any conditions related to undertaking local stakeholder consultations and environmental impact analysis?	EB63	Ann3	Yes. The conditions about undertaking local stakeholder consultations and environmental impact analysis are provided in section D and C of the CPA-DD respectively.	OK	OK
viii. Where applicable, are target group(e.g. domestic/commercial/industrial, rural/urban, grid-connected/off-grid) and distribution mechanisms(e.g. direct installation) available?	EB63	Ann3	N/A	-	-
ix. Where applicable, are the conditions related to sampling requirements for a PoA in accordance with the approved guidelines/standard from the Board pertaining to sampling and surveys included?	EB63	Ann3	N/A	-	-
x. Where applicable, are the conditions that ensure that CPA in aggregate meets the small-scale or micro-scale threshold criteria (please refer to the latest approved version of the Guidelines for demonstrating additionality of microscale project	EB63	Ann3	The micro-scale threshold criteria are also applied	OK	OK

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
activities. and the latest approved version of the General Guidelines to SSC CDM methodologies) and remain within those thresholds throughout the crediting period of the CPA available?					
xi. Where applicable, are the requirements for the debundling check available, in case CPAs belong to small-scale(SSC) or microscale project categories(please refer to the latest approved version of the “Guidelines on assessment of debundling for SSC project activities”)?	EB63	Ann3	Yes	OK	OK
xii. Are conditions to provide an affirmation that funding from Annex I parties provided, if any, does not result in a diversion of official development assistance?	EB63	Ann3	N/A	-	-
<b>c. Multiple CDM methodologies for a PoA</b>	<b>EB63</b>	<b>Ann4</b>			
i. Has the CME listed in the PoA-DD and the generic CPA-DD various combinations of technologies/measures and/or approved methodologies that will be implemented in the PoA?	EB63	Ann4	N/A	-	-
ii. If a CPA uses technologies/measures from several methodologies, is it in compliance with all the eligibility criteria derived from the requirements of all the methodologies? Are these eligibility criteria identified in the validated PoA-	EB63	Ann4	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
DD?					
iii. For multiple small-scale(SSC) CDM methodologies, is demonstrated that there are no cross effects between the technology(ies)/measures applied? Where such cross effects do exist, has CME proposed methods to account for such cross effects using the .Procedures for requests to the executive board for deviation from an approved methodology. so as to ensure that the calculation of emission reductions is accurate?	EB63	Ann4	N/A	-	-
iv. For multiple small-scale(SSC) CDM methodologies, are the following situations for applying combinations of technologies/measures and/or methodologies eligible?	EB63	Ann4			
1. The same combination of technologies/measures under the same combination of methodologies applied consistently in each and every CPA of a PoA.	EB63	Ann4	N/A	-	-
2. A single methodology is consistently applied in each CPA of a PoA but using multiple technology(ies)/measures.	EB63	Ann4	N/A	-	-
3. A principle technology/measure is applied consistently in each CPA using multiple combinations of methodologies.	EB63	Ann4	N/A	-	-

## VALIDATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
4. Combinations of technologies/measures and methodologies vary across CPAs of a PoA, i.e. the policy or goal can only be realized through the use of multiple and disparate methodologies. Therefore in such situations the CME shall demonstrate that the implementation of the activities is integrated through the design of the programme.	EB63	Ann4	N/A	-	-
v. The compliance with the SSC threshold of a CPA shall be met by following the guideline in paragraph 3 of the General Guidelines to SSC CDM methodologies?	EB63	Ann4	N/A	-	-
vi. For multiple large-scale CDM methodologies or combination of multiple large- and small –scale CDM methodologies, are combinations permitted in the methodologies? If not, has the CMEs sought a clarification by following the .Procedure for the submission and consideration of queries regarding the application of approved methodologies and methodological tools by designated operational entities to the Meth Panel 7 (EB 42, annex 9) for the eligibility of the proposed combination?	EB63	Ann4	N/A	-	-

Table 3 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
<b>CAR 8:</b> POA-DD Section E.2 Condition No. 7 Justification is not in line with the requirement of AMS I.C Para 7 as well the Justification of the choice of methodology is not found capturing the AMS IC Condition No. 48 for Leakage calculation due to Biomass processing.	5.b.d	<p>POA-DD Section E.2 Condition No. 7 has been corrected inline with the with the requirement of AMS I.C Para 7 in the revised PoA DD as well CPA DDs.</p> <p>The AMS IC Ver. 19 Condition No. 48 for Leakage calculation due to Biomass processing has been included in the section B.2, point 17 of the PoA DD, furthermore, the AMS IC Condition No. 47 for Leakage for the energy generating equipment currently being utilized is transferred from outside the boundary to the project activity.</p>	By checking the revised PoA-DD section E.2 and the methodology justification, the validation team confirms that the revision was done appropriately. Thus, CAR is closed.
<b>CAR 9:</b> POA-DD Section E.2 Condition No. 10& 11 – CME has justified that, CPA selected under this POA does not utilize solid fuel and hence both conditions are not applicable, however the 1st real case CPA which was presented by the CME is found using solid Biomass fuel in the form of Biomass Briquette.	5.b.d	PoA-DD Section E.2 Condition No. 10& 11 have been corrected covering solid biomass fuels used in the CPAs	By checking the revised PoA-DD section E.2, the validation team confirms that the revision was done appropriately. Thus, CAR is closed.

## VALIDATION REPORT



<b>CAR 10:</b> POA –DD Section E.4, Table E.4.2 List of Key Variable & its Data Source, CME has identified NCV of baseline fossil fuel and intended to apply IPCC Default Value, however in ER Calculation spread sheet CPA entity has utilized NCV value obtained from the Fuel Supplier. Application of values found inconsistent at POA and CPA level.	5.d.d	In the ER calculation-sheet for baseline emission, the NCV of baseline fossil fuel did not require to calculate the baseline emission, therefore, POA –DD Section E.4, Table E.4.2 List of Key Variable & its Data Source has been removed the value of the NCV of baseline fossil fuel in the revised PoA DD	By checking the revised PoA-DD section E.4, table E.4.2, the validation team confirms that the revision was done appropriately. Thus, CAR is closed.
<b>CL 5:</b> POA –DD Section A.4.2 on description of SSC –CPA is not appropriately covering type of biomass used as fuel at CPA Level.	3.c	The exact type, quantity and other specifications of the renewable biomass utilized by each CPA will be described in each specific-CPA-DD. This has now been further clarified in section B.4.2.1 of the PoA-DD.	By checking the revised PoA-DD section A.4.2 and the specific CPA-DD, the validation team confirms that the revision was done appropriately. Thus, CL is closed.
<b>CL 6:</b> POA – DD Section E.2 condition No. 8 – Justification for applicability provided is contradicting with the scenario 2 identified under section A.4.2.1, please clarify.	5.b.d	PoA-DD Section E.2 condition No. 8 has been corrected as per the identified scenario 2 under section A.4.2.1	By checking the revised PoA-DD section E.2 and section A.4.2.1, the validation team confirms that the revision was done appropriately. Thus, CL is closed.