



VOLUNTARY CARBON STANDARD 2007.1

VALIDATION REPORT

1.6 MW BUNDLED RICE HUSK BASED COGENERATION PLANT BY M/S MILK FOOD LIMITED (MFL) IN PATIALA (PUNJAB) & MORADABAD (U.P) DISTRICTS

Report No: 8107526922 – 11/67

Date: 2011-05-03

TÜV NORD CERT GmbH
JI/CDM Certification Program
Langemarckstraße, 20
45141 Essen, Germany
Phone: +49-201-825-3335
Fax: +49-201-825-3290
www.tuev-nord.de
www.global-warming.de



Name of Verification company:	Date of the issue:
TÜV NORD CERT GmbH	2011-05-03
Report Title:	Approved by:
1.6 MW Bundled Rice Husk Based Cogeneration Plant by M/s Milk food Limited (MFL) in Patiala (Punjab) & Moradabad (U.P) Districts	Mr. Rainer Winter
Client:	Project Title:
Milkfood Limited	1.6 MW Bundled Rice Husk Based Cogeneration Plant by M/s Milk food Limited (MFL) in Patiala (Punjab) & Moradabad (U.P) Districts
Summary:	
<p>Milkfood Limited has commissioned the TÜV NORD JI / CDM Certification Program to carry out the validation of the Project "1.6 MW Bundled Rice Husk Based Cogeneration Plant by M/s Milkfood Limited in Patiala (Punjab) & Moradabad (U.P) Districts". The proposed project undertaken is a bundle of two cogeneration plants of capacity 1.0 MW (with 14TPH steam generation) and 0.6 MW ((with 12 TPH steam generation) located at Bahadurgarh, Patiala in the state of Punjab and Mugalpur, Moradabad in the state of Uttar Pradesh respectively in India with regard to the requirements of VCS 2007.1 Standard.</p> <p>The project activity involves utilization of rice husk available in the regions for thermal and electrical power generation for captive consumption, thereby reducing the baseline emissions.</p> <p>In the course of the validation, Six (06) Corrective Action Requests (CARs) were raised and successfully closed and One (01) Forward Action Request (FAR) will be verified during the periodic verifications.</p> <p>The review of the project design documentation, proof of title and additional documents related to baseline and monitoring methodology (Table 5.2), follow-up interviews (Table 5.4) and subsequent background investigation have provided the TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfilment of the stated criteria.</p>	



As a result of the validation, the validation team confirms that:

- The project fulfils criteria of VCS 2007.1 provided.
- The project additionality is sufficiently justified in the PD.
- The monitoring plan is transparent, adequate and in-line with the applied baseline and monitoring i.e. AMS I.C., version 18: "Thermal energy production with or without electricity" approved small scale methodology of UNFCCC CDM program is correctly co-applied.
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of **696930** t CO₂e (total) is most likely to be achieved within the 10 years crediting period starting from 2009-05-06.

No restrictions or uncertainties were identified related to the validation.

Work carried out by:	Number of pages:
Archak Pattanaik (TL) Abhishek Kumar Srivastava (TM) Vishnu Patidar (TM) Arshi Vimal (TE)	60

Abbreviations

BAU	Business as usual
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CO₂	Carbon dioxide
CO₂e	Carbon dioxide equivalent
CP	Certification Program
CL	Clarification Request
DNA	Designated National Authority
EB	CDM Executive Board
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
FBC	Fluidised bed combustion
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LUCS	Levellized unit cost of steam
MoEF	Ministry of Environment and Forest
MFL	Milkfood Limited
NCV	Net calorific value
NABL	National Accreditation Board for Testing and Calibration Laboratories
NATCOM	National Communication (India)
PEDA	Punjab Energy Development Authority
QC/QA	Quality control/Quality assurance
UNFCCC	United Nations Framework Convention on Climate Change
VT	Validation Team
VVM	Validation and Verification Manual
VCS	Voluntary Carbon Standard



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1 INTRODUCTION

1.1 Objective

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

- the requirements of the VCS 2007.1;
- the requirements of the approved methodology;
- relevant rules, including the host country legislation

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

1.2 Scope and Criteria

The validation scope is given as a thorough independent and objective assessment of the project design including especially: the correct application of the methodology, the project's baseline study, additionality justification, stakeholder involvement, environmental impacts and monitoring plan, which are included in the PD other relevant supporting documents, to ensure that the proposed VCS project activity meets all relevant and applicable VCS 2007.1 criteria.

The information included in the PD and the supporting documents were reviewed and assessed against the requirements as set out by the VCS 2007.1.

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

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

1.3 VCS Project Description

1.3.1 Project Characteristics

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

Table 1-1: Project Characteristics

Item	Data
Project title	1.6 MW Bundled Rice Husk Based Cogeneration Plant by M/s Milk food Limited (MFL) in Patiala (Punjab) & Moradabad (U.P) Districts
Project owner	Milkfood Limited
Any specific project categories	<input type="checkbox"/> Mega project (> 10 ⁶ t CO _{2eq} / a) <input checked="" type="checkbox"/> Project (5000 t CO _{2eq} / a to 10 ⁶ t CO _{2eq} / a) <input type="checkbox"/> Micro project (< 5000 t CO _{2eq} / a) <input type="checkbox"/> AFOLU project <input type="checkbox"/> Grouped project <input type="checkbox"/> No specific project category
VCS PD dated	Draft: 2011-01-24 Final: -
Applied Methodology	AMS.I.C Version 18 and AMS.I.D Version 16
Project starting date	2009-05-06
Crediting period	<input checked="" type="checkbox"/> Renewable Crediting Period (10 y) <input type="checkbox"/> Fixed Crediting Period (10 y)
Start of crediting period	2009-05-06

1.3.2 Project Location

The details of the project location are given in table 1-2:

Table 1-2: Project Location

Table 2-3.1: Project I

No.	Project Location
Host Country	India
Region:	Punjab
Project location address:	District: Patiala, P.O: Bahadurgarh
Latitude:	30°21'55.23" N
Longitude:	76°28'17.59" E

Table 2-3.2: Project II

No.	Project Location
Host Country	India
Region:	Uttar Pradesh
Project location address:	Village: Mugalpur urf Agwanpur Mustakam, Dist.: Moradabad
Latitude:	28° 57'43.34" N
Longitude:	78° 54'20.65" E

1.3.3 Technical Project Description

The proposed project activity is a bundle activity of two cogeneration plants of capacity 1.0 MW and 0.6 MW located at Bahadurgarh, Patiala in the state of Punjab and Mugalpur, Moradabad in the state of Uttar Pradesh respectively.

The key parameters of the project are given in table 1-3:

Table 1-3a: Technical data of the project

Table 1-3a.1: Technical data of the project activity-1

Parameter	Unit	Value
Boiler Type	-	Rice husk fired FBC boiler
Steam generation capacity	TPH	14.0
Steam outlet parameters	kg/cm ² (g)	45
Steam outlet Temperature	°C	420
Electricity generation capacity	MW	1

Table 1-3a.2: Technical data of the project activity-2

Parameter	Unit	Value
Boiler Type	-	Rice husk fired FBC boiler
Steam generation capacity	TPH	12.0
Steam outlet parameters	kg/cm ² (g)	32
Steam outlet Temperature	°C	400
Electricity generation capacity	MW	0.6

Table 1-3b: Parameters confirmed during validation

Table 1-3b.1: project activity-I

Parameter	Name	Unit	Value
Boiler Type	Rice husk fired FBC boiler	-	-
Steam generation capacity	-	TPH	14.0
Steam outlet parameters	-	kg/cm ² (g)	45
Steam outlet Temperature	-	°C	420
Electricity generation capacity	-	MW	1
	-		

Table 1-3b.2: project activity-II

Parameter	Name	Unit	Value
Boiler Type	Rice husk fired FBC boiler	-	-
Steam generation capacity	-	TPH	12.0
Steam outlet parameters	-	kg/cm ² (g)	32
Steam outlet Temperature	-	°C	400
Electricity generation capacity	-	MW	0.6

1.3.4 Appointment of team members and technical reviewer

On the basis of a competence analysis and individual availabilities a validation team was appointed. Furthermore also the personnel for the technical review and the final approval was determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table 1-4 below.

Table 1-4: Involved Personnel

	Name	Company	Function ¹⁾	Qualification Status ²⁾	Scheme competence	Technical competence ⁴⁾	Host country Competence	Team Leading competence
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Archak Pattanaik	TUV India Pvt Ltd	TL	LA	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Abhishek Kumar Srivastava	TUV India Pvt Ltd	TM	LA	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Vishnu Patidar	TUV India Pvt Ltd	TM	A	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Arshi Vimal	TUV India Pvt Ltd	TM	TE	<input type="checkbox"/>	U	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms	S. Stalin	TUV India Pvt Ltd	OR ³⁾	A	<input checked="" type="checkbox"/>	U	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Klein Ingo	TUV Nord Cert GmbH	TR ³⁾	LA	<input checked="" type="checkbox"/>	U	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Rainer Winter	TUV Nord Cert GmbH	FA	SA	<input checked="" type="checkbox"/>	U	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

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

³⁾ No team member

⁴⁾ As per S01-MU03 or S01-VA070 A2 (such as A, B, C.....)

1.4 Level of Assurance

The validation has been planned and organized to achieve a

- reasonable level of assurance
- limited level of assurance.

2 METHODOLOGY

The validation of the project consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- A desk review of the VCS PD^{/PD/} submitted by the client and additional supporting documents with the use of customised validation protocol
- Validation planning
- On-Site assessment
- Background investigation and follow-up interviews with personnel of the project developer and its contractors
- Draft validation reporting
- Resolution of corrective actions
- Final validation reporting
- Technical review
- Final approval of the validation.

The sequence of the validation is given in the table 2.1 below:

Table 2.1: Validation sequence

Topic	Time
Assignment of validation	2010-12-17
On-site visit	2011-02-07
Draft reporting finalised	2011-02-11
Final reporting finalised	2011-05-03
Technical review on final reporting finalised	2011-05-03
Final corrections	2011-05-03

The main validation steps are described below.



2.1 Review of Document

The VCS PD ^{/PD/} and supporting background documents related to the project design and baseline were reviewed.

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

The references used in the course of this validation are summarized in section 5.

2.2 Follow-up Interviews

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

During validation the validation team has performed interviews to confirm selected information and to resolve issues identified in the document review. The main topics of the interviews are summarized in Table 2-2.

Table 2-2: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
<ul style="list-style-type: none"> - Project proponent representatives^{/IM01/} <p>(Ref. : Table 5.4)</p>	<ul style="list-style-type: none"> - Chronological description of the project activity with documents of key steps of the implementation. - Technical details of the project realization, project feasibility, designing, operational life time, monitoring of the project - Monitoring and measurement equipment and system. - Financial aspects - Deviations - Crediting period - Project activity starting date - Ownership - Baseline study assumptions - Additionality - Monitoring - Analysis of local stakeholder consultation - Roles & responsibilities of the project participants w.r.t. project management, monitoring and reporting - Editorial issues of the VCS PD

A comprehensive list of all interviewed persons is part of section 5 'References'.

2.3 Resolution of any material discrepancy

Material discrepancies identified in the course of the validation are addressed either as CARs, CLs or FARs.

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

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

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

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

A detailed list of the CARs CLs and FAR raised and discussed in the course of this validation is included in the next section 3 of this report.

3 VALIDATION FINDINGS

In this section the assessments and findings from the desk review of the VCS PD, site visit, interviews and supporting documents as well as the final assessments are summarised. Table 3-1 includes an overview of all raised CARs, CLs and FARs.

Table 3-1: Overview of CARs, CLs and FARs issued

No.	Topic / Chapter	CAR	CL	FAR
3.1.1	Technology	-	-	-
3.1.2	Project duration, crediting time and project start date	01	-	-
3.1.3	Ownership / Proof of title	-	-	-
3.1.4	Double counting	-	-	01
3.1.5	Project participation / rejection in other emission trading programme	01	-	-
3.1.6	VCS Eligibility	-	-	-
3.1.7	General Aspects of the PD	01	-	-
3.2.1	Approval of the baseline methodology	-	-	-
3.2.2	Correct application and justification of selected baseline methodology	-	-	-
3.2.3	Application of methodology deviations and revisions	-	-	-
3.2.4	Appropriate setting of baseline scenario	-	-	-
3.2.5	Assessment and demonstration of additionality	-	-	-
3.3.1	Approval of the monitoring methodology	-	-	-
3.3.2	Correct application and approval of selected monitoring methodology	01	-	-
3.3.3	Collection and archiving of relevant monitoring data	-	-	-
3.3.4	Responsibility and authority for monitoring	01	-	-
3.4.1	Appropriateness of source, sink and reservoir	-	-	-
3.4.2	Correctness and transparency of formulae and factors used			
3.4.3	Assumptions made for GHG ER estimations	01	-	-
3.4.4	Uncertainties	-	-	-
3.5	Environmental impacts	-	-	-
3.6	Comments by stakeholders	-	-	-
-	SUM	06	0	01

3.1 Project Design

3.1.1 Technology

Description

The proposed project activity is a bundle activity of two cogeneration plants of capacity 1.0 MW and 0.6 MW located at Bahadurgarh, Patiala in the state of Punjab (Project I) and Mugalpur, Moradabad in the state of Uttar Pradesh (Project II) respectively. The basic characteristics of the implemented co-generation technology have been described in section 1.3.3 of this report.

On the basis of the on-site observations, biomass (rice husk) based boiler (make by M/s Cheema Boilers Ltd.) of capacity 14 TPH alongwith turbo generator (make by M/s Pentagon Turbines Pvt. Ltd.) with installed capacity 1 MW as a part of project activity I and boiler (Make by M/s Industrial Boiler Ltd.) alongwith turbo generator (make by M/s I.B. Turbo Pvt. Ltd.) with installed capacity 0.6 MW as a part of project activity II are being used for steam and electricity generation to be utilized for the milk processing at Milkfood Limited. FBC boiler are being used for steam production using rice husk as a fuel^{/TD/}. The project design implementation and its components are as per the project description given in the PD section 1.4 and 1.9 and were evidenced during the site visit and further confirmed through interviews conducted by validation team^{/IM01/}.

The validation team has checked whether the given description is in line with the site visit findings and the VCS requirements.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Final Assessment

The description of the project technology as contained in the VCS-PD^{/PD/} is complete and accurate and it provides the reader with a clear understanding of the nature of the project activity. Also, the project design implementation and its components are as per the project description given in the revised PD section 1.4 and 1.9 and were evidenced during the site visit and interviews conducted by validation team^{/IM01/}. Moreover additional documentation, such as technical details of boilers and turbo generators along with purchase order^{/PO/} has been provided by the project participant to back up details and technical specifications of the project^{/TD/}.

- The project technology and the description of the same are in line with the



applicable VCS criteria.

3.1.2 Project duration, crediting time and project start date

Description

The project lifetime is estimated to be a maximum of 20 years which is supported by the chartered engineer certificate^{/PLF/}. The crediting period starting date is considered as 2009-05-06 as this is the earlier date of commissioning among both the plant project boilers. This is the first day on which the successful commissioning of the 14 TPH, 45 Kg/cm² biomass based FBC boiler has been done as a part of project activity I at Patiala (Punjab) and thus the project starts to reduce / remove GHG emissions. This is further confirmed by the commissioning certificate^{/CC/} and log book records of the boiler's operational parameters^{/LOG/}. Thus, the project start date is in line with clause 5.2.1 of the VCS 2007.1 standard, this day is considered to be the starting date of the project.

The project participants have chosen a 10 year renewable crediting period.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Finding:	3.1.2-1		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>1. As per section 1.6 of the VCS-PD^{/PD1/}, The project start date (herewith crediting period start date) is stated as 2009-06-06, however, based on commissioning certificates^{/CC/}, successful commissioning of biomass based boiler was on 2009-05-06 (earliest date among commissioning of biomass based boiler in project I and II), The same needs to be rectified..</p> <p>2. PP is requested to clarify the reason for delay in the commissioning after placement of PO of Boiler and TG sets..</p> <p>3. Crediting period start date is missing in section 7 of VCS PD. It needs corrections.</p>		



<p>Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i></p>	<ol style="list-style-type: none"> 1. The project commissioning date has been rectified as 2009-05-06 in the section 1.6 of the revised VCS PD version 2. 2. The commissioning of project was delayed due to multiple reasons like delay in civil work due to the weather conditions and labor problem at the contractor's end. PP has started both the projects simultaneously and had faced financial problem which results in the late supply of equipments. Further since major portion of the boiler is fabricated at the site, the equipment supplier's rescheduling of work caused further delays. And finally the end source where steam is to be utilised, equipments were under installation. At Moradabad, complete new plant was under construction and at Patiala, lot of new equipment was being added and this all is sourced from different machinery suppliers. 3. Corrected and included in the section 7 of the revised VCS PD version 2.
<p>DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<ol style="list-style-type: none"> 1. The project start date is now corrected to 2009-05-06 as the date on which the successful commissioning of the biomass based boiler has been done and thus the project starts to reduce / remove GHG emissions. Validation team has checked the commissioning certificate of 14TPH, 45 Kg/cm² biomass based boiler from the manufacturer i.e. Cheema Boilers limited and also first log record of the operation of boiler. Thus, the raised finding of CAR is closed out. 2. Validation team discussed complete timeline of the project activity starting from the project conceptualization stage with project proponent^{IM01/}. Since, successful commissioning of project depends upon other factors also (e.g. other process equipment installation, suppliers availability at the site, delays in on-site fabrications etc.), delay is assessed to have occurred in real. This assessment also draws basis from the interview of boiler supplier^{IM02/}. Thus, the raised finding of CAR is closed out. 3. Section 7 of VCS PD^{PD2/} is now revised incorporating the crediting period start date. Thus, the raised finding of CAR is closed out.
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<ul style="list-style-type: none"> <input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Related evidences like commissioning certificates of the project activity boiler^{/CC/}, log records of biomass based boiler operations^{/LOG/} have been checked and found suitable to support the statements in the PD.

- The project duration, crediting time and the project starting date are in line with the applicable VCS criteria.

3.1.3 Ownership / Proof of title

Description

In the VCS-PD^{/PD1/}, Milkfood Limited is mentioned as the owner of the project and thus claims the right on the carbon credits derived from this project.

Section 8.1 of the VCS PD^{/PD1/} mentions the evidences for the consideration of the proof of title.

Evidences of proof of title /ownership (as per section 8.1 of the VCS PD^{/PD1/}) for actual project owner “Milkfood Limited” are as follows:

- Certificate of Incorporation
- Purchase order of Boilers
- Purchase orders of biomass(rice husk)

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Final Assessment

By means of site visit, interviews^{/IM01/} and checking of corresponding documents like certificate of incorporation^{/PT/} and documents related to the purchase of project activity equipment i.e. purchase order for biomass boilers and it is evidenced that Milkfood Limited is the owner of the plant.

- The proof of title could be confirmed.



3.1.4 Double Counting

Description

As per the statement of the PP in section 1.13 of the VCS PD^{/PD1/}, the project has applied to participate in another emission trading program i.e. CDM under UNFCCC.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Finding:	3.1.4-1		
Classification	<input type="checkbox"/> CAR	<input type="checkbox"/> CL	<input checked="" type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Although, PP has submitted an undertaking ^{/UND/} that project has not created another form of environmental credit to acquire benefits of carbon credits till date. However, as per section 1.13 of VCS-PD ^{/PD1/} , proposed project is under the validation stage of UNFCCC CDM Program. Thus, this needs to be re-assessed during the periodic verification process.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	PP will ensure to avoid double counting by not claiming VCS credits for the period for which CDM credits will be claimed. Moreover PP will provide all the information regarding CDM status of project activity during verification.		
DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The PP has provided undertaking dated 2011-02-11 that no claim will be made for emission reductions under two GHG programs for the same monitoring period ^{/UND/} . In order to minimize the risk of double counting, the DOE will check at the time of each verification that emission reductions are not claimed or intended to claim for the same monitoring period in other GHG program (CDM).		
Conclusion <i>Tick the appropriate checkbox</i>	<input checked="" type="checkbox"/> To be checked during the periodic verifications <input checked="" type="checkbox"/> Appropriate action was taken <input type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements		

Final Assessment

As per the provided document i.e. undertaking^{/UND/}, no claim will be made for emission reductions (other environmental credits) under two GHG programs.



Nevertheless in case of changes in the legal framework in the future, this needs to be re-assessed. Thus, a FAR 3.1.4-1 is raised for the same.

- There is (currently) no double counting and thus the project is in line with the requirements of the VCS.

3.1.5 Project participation / rejection in other emission trading programme

Description

This issue is addressed in section 8.2 of the VCS-PD. Also, as per the VCS PD section 1.14, the project has not been rejected under any other GHG programme.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Finding:	3.1.5-1		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding	As per the VCS PD ^{/PD1/} section 1.14, the project has not been rejected under any other GHG programme. However, as per the Validation team's knowledge from independent web-search of UNFCCC website, the same project is also proposed under CDM. Please include this information in the VCS PD.		
Corrective Action #1	Though the project is in validation under UNFCCC CDM programme it is not yet registered. PP has provide the declaration that no other credits are generated till date and in future when the project will get registered under the CDM of UNFCCC PP will not request for VCS credits for the time period for which he would be requesting credits under CDM of UNFCCC. Same has been added in the Sec 1.14 of VCS PD.		
DOE Assessment #2	The undertaking ^{/UND/} submitted by the PP dated 2011-02-02 is checked and found acceptable. Thus, raised CAR 3.1.5-1 is closed out.		

Conclusion	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements
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Final Assessment

During interview^{/IM01/} and website investigation and document review^{/UND/}, no evidences were found which indicates that project was rejected under any other GHG programme, however, the project activity is under Validation stage of CDM.

At this stage of the project the undertaking^{/UND/} as described in the PD is considered to be sufficient proof that the project does not rejected in other emission trading programme.

- The project is in line with the VCS requirements w.r.t. this issue.

3.1.6 VCS Eligibility

Description

As per information provided by the PP in section 1.6, 1.10, 1.12, 1.13 and 1.14 of the VCS PD^{/PD1/}, the project meets all VCS eligibility criteria. The commissioning date of project activity is 2009-05-06^{/CC/}, which is within two years of this validation report date. The validation team has checked the project activity against the applicable criteria. The commissioning date of project activity I is 2009-05-06 and of project activity II is 2009-06-04 and hence earlier one (2009-05-06) has been chosen as the starting date of project as this is earliest date on which the project (including project activity I and II) began reducing/ removing GHG emissions which is in accordance to the definition provided on page 7 of VCS standard 2007.1 and section 5.2.1 of VCS standard 2007.1 and thus acceptable.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:



Final Assessment

As

- the reduced GHG is one of the 6 Kyoto gases
- an approved CDM methodology was used
- the validation is finished within two years after the project start date.

the validation team arrives at the conclusion that all applicable eligibility criteria are met.

The project meets all VCS eligibility criteria.

3.1.7 General aspects of the PD

Description

The VCS PD^{/PD1/} has been drafted on the basis of the VCS PD template ^{/VCS-PD-T/} dated 2007-11-19 as available on the VCS website^{/VCS/}. The validation team has thoroughly reviewed the VCS PD^{/PD1/} and found that all the sections of the VCS PD^{/PD1/} are dully filled as per the template^{/VCS-PD-T/} all aspects have been appropriately addressed.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Finding:	3.1.7-1		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR



<p>Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i></p>	<ol style="list-style-type: none"> 1. PP is requested to provide full form of acronym on its first instance of its use in the VCS PD. 2. Table and figures are not numbered and captioned. 3. As per section 1.4 of VCS PD^{PD1/}, availability of rice husk within 75 km radius around both the project site is discussed based on biomass availability survey. However, it is contradictory with the survey reports submitted to validation team, which need to be corrected. 4. For both the project activities (Project activity I & II), GPS coordinates are not exactly matching with the Google-maps, which needs to be rechecked and corrected accordingly. 5. In section 1.11 of VCS PD^{PD1/}, risks associated with project's GHG emission reductions shall be substantiate with published documents as a footnote. 6. Section 1.17 of VCS PD shall transparently describe any commercial sensitive information's (if any), Cp section 1.17 of VCS PD Template.
<p>Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i></p>	<ol style="list-style-type: none"> 1. Full form of acronym is provided in the revised VCS PD version 2. 2. Table and figures has been numbered and captioned in the revised VCS PD version 2. 3. Corrected and included in the section 1.4 of the revised VCS PD version 2. 4. For both the project activities (Project activity I & II), GPS coordinates are checked and corrected in the section 1.5 of the revised VCS PD version 2. 5. Risks associated with project's GHG emission reductions have been substantiated with published documents in the section 1.11 of the revised VCS PD version 2. 6. All relevant information which is required for the purpose of Project description is already included and described in the relevant sections of VCS PD and commercial sensitive information's.



<p>DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<ol style="list-style-type: none"> 1. All the acronyms are now properly described in the revised VCS PD^{/PD2/}. The raised finding is closed. 2. Captions are found inserted throughout the revised VCS PD^{/PD2/}. The raised finding is closed. 3. Section 1.4 of VCS PD^{/PD2/} is corrected based on biomass availability survey conducted by third party i.e. Advance Energy System. The raised finding is closed. 4. The latitude and longitude (GPS coordinates) for both the project activities (Project activity I & II) are checked through web-search and found corrected in section 1.5 of VCS PD^{/PD2/}. Validation team has also assessed the location of Project activity I & II during on site visit. 5. A brief description of the risk associated with the proposed GHG emission reductions project activity is now clearly demonstrated and substantiate with published document as a footnote in section 1.11 of the revised VCS PD^{/PD2/}. The finding is closed. 6. Section 1.17 of VCS PD^{/PD2/} is now transparently described that none of the information's provided to validation team and sighted in VCS PD^{/PD1//PD2/} are commercial sensitive. The finding is closed.
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<ul style="list-style-type: none"> <input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

Final Assessment

All raised CAR / CL have been addressed appropriately.

The PD is in line with the applicable guidelines to fill the VCS-PD template.

3.2 Baseline

3.2.1 Approval of the baseline methodology

Description

The approved baseline methodology AMS.I.C “Thermal energy production with or without electricity” (Version 18; EB 56)^{/AMS.I.C/} and AMS.I.D “Grid connected

renewable electricity generation” (Version 16; EB 54)^{AMS.I.D/} have been applied.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Final Assessment

AMS I.C. version 18 and AMS.I.D, version 16 are approved CDM methodologies which are valid. No revisions thereof have been applied. Thus this methodology is applicable for project activity under the VCS.

- The applied baseline methodology is duly approved.

3.2.2 Correct application and justification of selected baseline methodology

Description

The justification of the choice of the applied methodology is given in section 2.2 of the VCS-PD^{PD1/}. As per this section all applicable criteria of the applied methodology are justified and thus as per this section all applicable criteria met.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Final Assessment

The applicability criteria and the assessment thereof are summarized in table 3-2 below.

Table 3-2: Assessment of applicability criteria



Criteria	Assessment of justification	Fulfilled?
<p>This category comprises renewable energy technologies that supply thermal energy that displaces fossil fuels. Examples include solar thermal water heaters and dryers, solar cookers, energy derived from renewable biomass for water heating, space heating, or drying, and other technologies that provide thermal energy that displaces fossil fuel.</p>	<p>The project activity I and II at Milk food Limited Patiala and Moradabad respectively, is rice husk (renewable biomass) based cogeneration plant and producing heat and electricity. Validation team has verified the biomass based renewable energy technology on-site.</p> <p>This type of project activities is included in the methodology and therefore the methodology fulfils this requirement.</p>	<input checked="" type="checkbox"/>
<p>Biomass-based cogeneration systems consisting of steam generator(s) and steam turbine(s) 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 biogas engine) do not fit under the definition of cogeneration project.</p>	<p>As verified on-site, project activity I and II by Milkfood Limited, is rice husk (renewable biomass) based cogeneration plant and producing heat and electricity simultaneously. Also, validation team has confirmed the technical details form purchase orders for respective boilers and TGs^{/PO/}.</p> <p>This type of project activities is included in the methodology and therefore the methodology fulfills this requirement.</p> <p>3.2.3</p>	<input checked="" type="checkbox"/>
<p>Emission reduction 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) for on-site consumption or for consumption by other facilities; (c) Combination of (a) and (b).</p>	<p>3.2.4 Out of the listed options, option (b) is applicable for the project activity (b) Electricity and/or thermal energy (steam or heat) for on-site consumption or for consumption by other facilities;</p> <p>Applicability of option (b) is discussed with PP during on-site interviews^{/IMO1/}.</p>	<input checked="" type="checkbox"/>
<p>The total installed/rated thermal energy generation capacity of the project equipment is equal to or less than 45 MW thermal (paragraph 6 for the applicable limits for cogeneration project</p>	<p>The proposed project is co-generation system. Pls. refer assessment of applicability 6.</p>	<input checked="" type="checkbox"/>



<p>activities).</p>		
<p>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 (see paragraph 6 for the applicable limits for cogeneration project activities).</p>	<p>As per on-site assessment, interviews with PP^{/IM01/} and engineer of biomass boiler supplier, Cheema Boilers Limited^{/IM02/}, Validation team confirmed that co-firing systems is not feasible and thus, No Fossil Fuel along-with biomass is being utilized in the project.</p>	<input checked="" type="checkbox"/>
<p>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 project activities, the maximal limit of 15MW(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.</p>	<p>Out of the given capacity limits options (b) and (c) are not applicable, option (a) is applicable for the proposed project activity :</p> <p>The Combined Electricity as well as Thermal production for Project I (3 MW_{thermal} (1MWe) and 9.3 MW_{thermal}) and Project II (1.8 MW_{thermal} (0.6 MWe) and 8.48 MW_{thermal}) is 22.56 MWth , which is less than the limit 45MWth, thus determines that the proposed project activity is a small scale project activity.</p> <p>Thus fulfills the criteria.</p> <p>Validation team has confirmed the installed capacities of TGs and Boilers from purchase orders for respective boilers and TGs^{/PO/}. Also, calculation of thermal energy generation for project activity I and II is checked^{/XLS2/} and found correct.</p>	<input checked="" type="checkbox"/>



<p>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.</p>		
<p>In case electricity and/or steam/heat produced by the project activity is delivered to 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 specifying that only the facility generating the energy can claim emission reductions from the energy displaced.</p>	<p>Applicability of this criteria is discussed with PP during on-site interviews^{/IM01/}. And found that this case is not applicable as the electricity as well the steam is being consumed by the producer itself (for captive utilization only).</p>	<input checked="" type="checkbox"/>
<p>Project activities that seek to retrofit or modify an existing facility for renewable energy generation are included in this category.</p>	<p>Validation team has checked commissioning of project activity biomass based boilers from commissioning certificates issued from technology suppliers^{/CC/} and found that the proposed project activity I and II is new installation and therefore this applicability criterion is not applicable for the project activity.</p>	<input checked="" type="checkbox"/>
<p>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</p>	<p>The proposed project activity I and II is new installation and therefore this applicability criterion is not applicable for the project activity.</p>	<input checked="" type="checkbox"/>



<p>distinct from the existing units.</p>		
<p>Charcoal based biomass energy generation project activities are eligible to apply the methodology only if the charcoal is produced from renewable biomass sources provided:</p> <ul style="list-style-type: none"> 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. 	<p>As per on-site assessment, interviews with PP^{IM01/}, there is no charcoal being used hence this criteria is not applicable.</p>	<input type="checkbox"/>
<p>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 emissions reduction calculation</p>	<p>As per on-site assessment, interviews with PP^{IM01/}, the project activity does not utilize any biomass in the form of briquette therefore this applicability criterion is not applicable to the project activity.</p>	<input type="checkbox"/>

All applicable applicability criteria have been duly addressed in section 2.2 of VCS-PD^{PD2/}. The validation team arrived at the conclusion that all applicability criteria are met, considering the above mentioned deviation.

- The project activity is in line with the applicability criteria of the applied baseline methodology.

3.2.5 Application of methodology deviations or revisions

Description

No deviations from the applied methodology have been applied in the VCS-PD^{PD1/}.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Final Assessment

In the course of the validation, no deviation from the applied methodology has been identified.

- No deviations have been applied.

3.2.6 Appropriate setting of baseline scenario

Description

The identification of the baseline scenario has been carried out in line with the corresponding section of applied methodology i.e. AMS I.C. (version 18; EB 51)^{AMS.I.C/}. As per paragraph 15 of applied methodology AMS.I.C version 18, baseline scenario for renewable energy technologies producing both heat and electricity including cogeneration, the simplified baseline scenario is the electricity imported from the grid and thermal energy (steam/heat) production using fossil fuel.

Project proponent has demonstrated the baseline scenario in section 2.4 of VCS PD /PD2/ considering alternatives available to fulfill the steam and power requirement of the milk plant processing. Unit cost of various fuels options available per unit of steam (thermal generation) and power generation have been calculated and arrived as below:

Project activity I

Fuel type	Unit Cost of steam (thermal) generation; (INR/TJ)	Unit Cost of power (electricity generation); INR/kWH	Reference
FO	691089.1089	-	Calculated (refer excel sheet ^{/XLS2/})
Diesel	988655.71	-	Calculated (refer excel sheet ^{/XLS2/})
Coal	166423.9651	0.431	Calculated (refer excel sheet ^{/XLS2/})
Biomass(rice husk)	199362.0415	0.62	Calculated (refer excel sheet ^{/XLS2/})
Grid	-	3.25	Electricity Bill

Project activity II

Fuel type	Unit Cost of steam (thermal) generation (INR/TJ)	Unit Cost of power (electricity generation) INR/kWH	Reference
FO	691089.11	-	Calculated (refer excel sheet ^{/XLS2/})
Diesel	988655.71	-	Calculated (refer excel sheet ^{/XLS2/})
Coal	166423.96	0.51	Calculated (refer excel sheet ^{/XLS2/})
Biomass(rice husk)	239234.44	0.74	Calculated (refer excel sheet ^{/XLS2/})
Grid		3.32	Electricity Bill

Validation team has checked the calculations of unit cost of power and steam generations^{/XLS2/} and verified the input parameters (fuel price, NCV of fuels etc.) from feasibility study reports,, actual Invoices^{/ADD/} as well NCV of fuels has been checked by the third level evidences from the published document^{/BEE/}.

Thus, demonstration of the coal based steam and power generation unit which does not faces any barriers is justifiable, however, to adopt a conservative approach, import from grid has been considered as option for electricity part (as emission factor of coal is high).

Thus, the baseline scenario for the proposed project activity includes the fossil fuel (coal) based technologies to produce the steam in the absence of the project activity and electricity imported from the grid.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Final Assessment

The baseline scenario is described as per §15 of applied methodology AMS I.C., version 18 in the section 2.4 of the revised VCS PD^{PD2/}.

As per §15 of AMS.I.C Version 18, baseline scenario for the renewable energy technologies producing both heat and electricity including cogeneration, the simplified baseline scenario is the electricity imported from the grid and thermal energy (steam/heat) production using fossil fuel..

However, PP has established the baseline by considering the possible baseline alternative scenarios. The analysis demonstrates that the only feasible baseline is a steam and power (electricity) generation using coal, which is a least cost option available to the PP and also meets current regulations.

Therefore, the baseline scenario for the proposed project activity is *the fossil fuel (coal) based technologies to produce the steam in the absence of the project activity and electricity imported from the grid as per conservative approach* selected as the baseline scenario.

- The baseline identification is in line with the applicable VCS criteria.

3.2.7 Assessment and demonstration of additionality

Description

The additionality of the project activity has been demonstrated on the basis of the attachment A to appendix B of the simplified modalities and procedures for small-scale CDM project activities through barrier analysis.

PP has demonstrated investment barriers through the levelized cost analysis of the baseline fuel i.e. coal and biomass (rice husk) and indicate that the energy generation cost in rice husk is higher than the least cost option available i.e. coal.

Project proponent has demonstrated through the analysis of investment barrier that the unit cost of steam generation is higher in case of the project activity as compared to that of the baseline option. TUV has adopted a five-pronged strategy to ascertain the veracity of the conclusion drawn by the project proponent, viz.

3.2.8

a) determining the suitability of the analysis applied for the type of investment barrier presented;

3.2.9

b) conducting an assessment of parameters and assumptions used in performing the analysis and determining the accuracy and suitability of parameters;

3.2.10

c) cross-checking the parameters against third-party or publicly available sources;

3.2.11

d) assessing the correctness of computations carried out and documented; and

3.2.12

e) subjecting the critical assumptions of the project activity to reasonable variations to determine under what conditions, variations in the result would occur, and the likelihood of these conditions.

3.2.13

Suitability of the analysis to demonstrate investment barrier: The project proponent has compared unit cost of thermal energy and power generation to demonstrate the investment barrier. Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities permits the PP to establish additionality by means of investment barrier to the implementation of project activity by demonstrating that a financially more viable alternative to the project activity would have led to higher emissions.

The project participant has chosen to demonstrate the financial unattractiveness of the project through calculation of levelized unit cost of steam (LUCS) generation and power generation.

3.2.14

Parameters and assumptions used:

3.2.15

The important parameters which determine the unit cost of steam generation in this project are price and calorific value of rice husk and coal and other techno-

commercial estimates of the project. PP has compared the unit cost of thermal generation between coal i.e. baseline fuel and and rice husk to demonstrate the additionality. There are four critical parameters, variation of which significantly affects the additionality. Those parameters are as follows:

- 1. Net calorific value of coal:** For project activity I and II, calorific value of coal has been sourced as per feasibility study report^{/PFR/} which is prepared by the third party and thus the value has been accepted by the validation team. Validation team has also verified the Net calorific value of coal (other bituminous coal) used for steam raising purpose¹ from IPCC default value and concluded that more conservative value has been considered in the LUC calculation.
- 2. Net calorific value of rice husk:** For project activity I and II, the net calorific value of the rice husk has been taken from the project feasibility report^{/PFR/} which is prepared by the third party during the project conceptualisation and thus the value has been accepted by the validation team. Validation team has also checked the test result of net calorific value (NCV_{biomass}) of the rice husk being used in the project activity-I and Project activity-II^{/TR/} carried out by NABL certified laboratory i.e. Delhi Test House (Laboratory)^{/dth/}. By crosschecking with test results, VT has found the value used in project feasibility study and consequently for additionality demonstration to be conservative and thus acceptable.
- 3. Cost per kg of coal:** For project activity I and II, cost of coal has been sourced from project feasibility report^{/PFR/} which is conducted by the third party during the project conceptualisation stage. Validation team has also checked the quotation from coal supplier i.e. M/s Ambe Traders, Patiala, dated 2007-05-28 and 2007-06-05^{/ADD-1&2/}. PP sought quotation during the conceptualisation of the project activity^{/ADD-1&2/}. Validation team has cross verified the coal price with quotations from other suppliers too and found that, higher values as a conservative approach is considered for the cost comparison analysis. Thus validation team concludes that price taken for demonstration of investment barrier is appropriate and conservative. The same is also crosschecked with the invoices for project I and II and found conservative.
- 4. Cost per kg of rice husk:** For project activity I and II, cost of rice husk has been sourced from project feasibility report^{/PFR/} which is conducted by the third party during the project conceptualisation stage. Validation team has also checked the quotation from rice husk supplier^{/ADD-10/} i.e. Raees Ahmed, Moradabad and Hari Om Traders dated 2007-04-09 and 2007-04-11. PP has sought quotation during the conceptualisation of the project activity^{/ADD-6&10/}.

¹ Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories, page no 1.14

The value has been crosschecked with other supplier by the VT and found that appropriate and a conservative value has been considered for demonstration of additionality. Validation team has also done independent research and thereby validation team concludes that price taken for demonstration of investment barrier is appropriate and conservative.

Other techno-commercial estimates of the project, which form the basis for LUCS calculation is based on installed capacity of boiler, plant load factor (PLF), boiler efficiency which are sourced from technical documents i.e. purchase order of boilers and third party assessment.

3.2.16

For project activity I and II, PLF works out to 90% on the basis of third party assessment, Ref. No. NK/MF/CE/0510/01 and NK/MF/CE/0510/02^{/PLF/}. Third party is a chartered engineer who is qualified for this kind of work and having certificate no. M-119190-4 from Institution of Engineers (India). This complies with the requirements of the Guidelines for the reporting and validation of plant load factors (EB48, Annex 11).

3.2.17

Boiler efficiency for coal fired boiler is taken to be 82% which is further verified from the provided design specification by Boiler manufacturer M/s Cheema Boilers Ltd. and Industrial Boilers Limited for baseline boiler^{/BEFF/}. This complies the requirement of § 25 of applied methodology AMS.I.C version 18.

3.2.18

Cross checking parameters: Fuel costs, NCV values etc. have been cross checked with quotations, purchase orders other documents^{/ADD/}. The input costs considered appear to be in order. Moreover source of values for project I, is taken from project feasibility study which is approved by the PEDDA.

3.2.19

Assessment of correctness of computation: The assessment involves checking the data input taken from quotation/documents. Validation team has checked the quotation/ documents and ensured that right input has been taken in the project cost and projections. The arithmetical accuracy is also found to be correct.

The principle adopted by the project proponent for computing LUCS is in conformity with the “Guidance on the Assessment of Investment Analysis” version 3 as contained in annex 58 of EB 51 report.

Based on the above, the LUCS of the project activity I and project activity II works out to ₹ 862.85 and ₹ 855.11 (with rice husk) respectively, whereas LUCS of the baseline is estimated to be ₹ 570.97 and ₹ 565.84 (with coal) respectively, Thus, validation team reached to the conclusion that the LUCS for the proposed CDM project activity is 32% higher than that of baseline. Also, more financial attractive option (i.e. coal) would lead to higher emission. In the above background, validation is convinced that the project is additional and not a business-as-usual scenario.

However, this conclusion was checked by subjecting the critical assumptions to reasonable variations.

Sensitivity analysis: The Guidance on assessment of investment analysis requires the robustness of the conclusion arrived at to be proved through a sensitivity analysis by varying the critical assumptions to a reasonable variation ($\pm 10\%$). Following parameters were found as critical assumptions and are subjected to sensitivity:

- Coal price
- Rice husk price
- NCV of Coal
- NCV of biomass
- Boiler efficiency

Accordingly, sensitivity analysis has been conducted to analyze the impact of a change in the base values of above parameters by $\pm 10\%$. The sensitivity analysis reveals that even under more favorable conditions, the LUCS with biomass would not be less than the LUCS with coal as given in the following tables:

Table: Projecta ctivity I

Parameters	LUCS with coal in ₹			LUCS with Biomass in ₹		
	+10%	0 %	-10%	+10%	0%	-10%
Variation in price (Coal and rice husk), keeping other parameters constant	628.06	570.97	513.87	949.14	862.85	776.57
Variation in NCV(Coal and rice husk), keeping other parameters constant	519.06	570.97	634.41	784.41	862.85	958.73
Variation in boiler efficiency biomass, keeping other parameters constant	519.06	570.97	634.41	784.41	862.85	958.73

Table: Project activity II

Parameters	LUCS with coal in ₹			LUCS with Biomass in ₹		
	+10%	0 %	-10%	+10%	0 %	-10%
Variation in price (Coal and rice husk), keeping other parameters constant	622.43	565.84	509.26	940.63	855.11	769.60
Variation in NCV of Coal and rice husk, keeping other parameters constant	514.40	565.84	628.72	777.38	855.11	950.13
Variation in boiler efficiency biomass, keeping other parameters constant	514.40	565.84	628.72	777.38	855.11	950.13

Verification team has also checked the LUC of thermal and power generation for both the project activity keeping efficiency of coal and biomass based boiler same (80%), even though, the cost of thermal energy with biomass is always higher than that with coal.

3.2.20

TUV carried out its own independent assessment, which reveals that the proposed CDM project activity would become *non additional* only if:

Project activity I

- Coal prices go up by 51.25%
 This variation is not expected to occur in the coal price as coal prices in India. This is verified from data and information available on Coal India website². Also, it is forecasted in many reports that coal prices will remain stable in near future³.

3.2.21

- Biomass prices reduce by 34%
 This reduction in biomass price is not likely as verified from quotations

² <http://www.coalindia.in/Business.aspx?tab=2>

³ <http://www.business-standard.com/india/news/coal-prices-to-stay-stable/346279/>

available at the commencement of proposed project and also as checked from the quotations at the time of validation process^{/INV/}. In fact biomass price is increasing.

- NCV of biomass goes up by 51.5% and NCV of coal decreases by 33.8% NCV range of rice husk as specified in actual test reports^{/LOG/} are below this value. Based on sectorial expertise, it is not realistic to assume that NCV of biomass goes this high.

3.2.22

Project activity II

- Coal prices go up by 51.25%
This variation is not expected to occur in the coal price as coal prices in India. This is verified from data and information available on Coal India website⁴. Also, it is forced in many reports that coal prices will remain stable in near future⁵.

3.2.23

- Biomass prices reduce by 34%
This reduction in biomass price is not likely as verified from quotations available at the commencement of proposed project and also as checked from the quotations at the time of validation process^{/INV/}. In fact biomass price is increasing.
- NCV of biomass goes up by 51.5% and NCV of coal decreases by 33.8% NCV range of rice husk as specified in actual test reports^{/LOG/} are below this value. Based on sectorial expertise, it is not realistic to assume that NCV of biomass goes this high.

3.2.24

The individual arguments presented in the PDD to justify the additionality are as well as the assessment of the validation team is summarized in table 5-1.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Final Assessment

As per VCS 2007.1, an additionality requirement is demonstrated as directed by the applied methodology. The applied methodology i.e. AMS I.C., version 18 requires

⁴ <http://www.coalindia.in/Business.aspx?tab=2>

⁵ <http://www.business-standard.com/india/news/coal-prices-to-stay-stable/346279/>

the demonstration of the additionality of the project activity on the basis of the attachment A to appendix B of simplified modalities and procedures for small scale project activities. Validation team has assessed the demonstration of the investment based on the supportive authentic evidences and subsequent independent background research and found appropriate.

The project is additional.

3.3 Monitoring Plan

3.3.1 Approval of the monitoring methodology

Description

Paragraph 48 of the applied methodology AMS-I.C version 18 stipulate that in the case of steam (thermal) energy and power generation, monitoring shall consist of direct measurement of flow, temperature and pressure of the steam, quantity of electricity generated. As per the paragraphs 48 of AMS-I.C version 18, monitoring of fuel type (biomass type and fossil fuel type) and quantity of fuel consumed need to be monitored. The section 3 of VCS PD provides detailed monitoring plan as per paragraph 48 of AMS.I.C, version 18. The procedure to monitor the above parameters is explained in section 3.3 of the VCS PD^{PD2/} and also monitoring procedures have been evaluated by the validation team during onsite assessment^{/IM01//IM02/} and thus assessed to be appropriate.

Calibration, monitoring and maintenance procedures of monitoring equipment are clearly mentioned in the section 3.3 and 3.4 as per QA/QC procedure of PD.

All the monitored data will be archived electronically for a period of 2 years after the crediting period.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Final Assessment

The applied methodology AMS-I.C version 18 is valid and applied correctly. PI. also refer to section 3.2.1. All the monitoring requirements as per the applied methodology is fulfilled by the project monitoring arrangements.

The applied monitoring methodology is duly approved.



3.3.2 Correct application and justification of selected monitoring methodology

Description

The approved baseline and monitoring plan of the methodology AMS.I.C “Thermal energy production with or without electricity” (Version 18; EB 56)^{/AMS.I.C/} has been applied. The monitoring plan as depicted in paragraph 48 is summarized in section 3 of the VCS-PD^{/PD1//PD2/}.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Finding:	3.3.2-1		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Section 3.1 of VCS PD shall include the explanation of methodology choice. Cp 3.1 of VCS PD template.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Explanation of methodological choices has been included in the section 3.1 of the revised VCS PD version 2.		
DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Section 3.1 of VCS PD ^{/PD2/} is revised including the appropriateness of applicable methodology in-line with requirement of VCS PD template and Justification of all applicability criteria of the methodology are transparently described in section 2.2 of the VCS PD ^{/PD2/} . Thus, CAR is closed out.		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements		

Final Assessment

All the requirements of monitoring methodology are fulfilled by the project monitoring arrangements. Pl. refer to chapter 3.2.2.

- The project activity is in line with all applicability criteria of the applied monitoring methodology.

3.3.3 Collection and archiving of relevant monitoring data

Description

PP has formed a structured project management team to ensure proper operation and continuous monitoring of proposed project activity.

Procedures for data management are described in the section 3.3 of the PD^{/PD1/}. All the monitoring data which are mentioned in the PD^{/PD2/} will be recorded and archived by the monitoring team and plant incharge will review the recorded data on daily basis and monthly report will be checked by senior management.

Also, the project proponent will maintain complete and accurate records of all the data as a part of monitoring for at least a period of 2 years after the end of the crediting period.

Thus, based on site visit interviews^{/IM01//IM02/} and desk review, the validation team comes to the conclusion that the project management planning is found to be adequate and appropriate for the project monitoring.

Following parameters are found to be monitored during validation:

1. For both project activity I and II, Biomass based boiler section is equipped with continuous monitoring equipments i.e. pressure sensor (Pressure gauge), temperature gauge and steam flow for the measurement of steam quality of at various places in steam line (as per Figure 3 and Figure 4 provided in VCS PD^{/PD2/}) to determine enthalpy of the steam. The pressure (P_{steam}) reading is being recorded in a log book in hourly^{/LOG/}. Pressure gauge will be calibrated once in a three year period.
2. For both project activity I and II, Net calorific Value of biomass residues (NCV_{biomass}) is being tested by third party accredited by NABL i.e. Delhi test house^{/TR/} and As per monitoring plan of the VCS PD^{/PD1/} and subsequent discussions with project proponent^{/IM01/}, NCV_{biomass} will be checked through testing from the Govt. approved independent laboratory once in a year.
3. Quantity of biomass (rice husk) used/fired entered in Milkfood Limited (MFL) premise both at Patiala and Muradabad plant is being monitored on weighbridge. Weigh bridge will be calibrated once in a three year.
4. For both project activity I and II, electricity generated by TG's at project activity I and II are being measured from electronic meter of 0.5s accuracy class at the plant.
5. For both project activity I and II, auxiliary electricity consumption by project

activity I and II are being measured from electronic meters of 0.5s accuracy class at the plant.

6. As per site visit interviews^{/IM01/}, For both project activity I and II, auxiliary electricity consumption during TG's shutdown meets from respective state grid and DG sets (in absence on grid supply) are being monitored.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Final Assessment

The description of the monitoring parameters is in line with the requirements of the VCS standard and applied methodology requirements. For each parameter all relevant information as given in the template table has been filled completely. All information given is assessed to be suitable to enable an unambiguous interpretation of the requirements during the verification.

Further details of the monitoring plan are given in section 3.3 and 3.4 and in practice.. The data will be kept throughout the crediting period plus at least 2 years.

Furthermore all applicable formulae for ex post calculation are given in this section. This altogether forms a solid basis for a thorough monitoring process in line with the applied methodology.

- The monitoring plan is in line with the VCS requirements.

3.3.4 Responsibility and authority for monitoring

Description

The PP's roles and responsibilities for monitoring of parameters, frequency of recording, reporting, archiving, calibration, Internal audit etc are described in sections 1.15, 3.3 and 3.4 of the VCS-PD^{/PD1/}. The PD was checked and found to be in line with the roles and responsibility provided to the individuals as verified during the site visit.

Related Findings



- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Finding:	3.3.4-1		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Section 1.15 of VCS PD shall describe the roles and responsibilities of PP in relation of proposed GHG emission reduction project.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Roles and responsibilities of PP have been described in the section 1.15 of the revised VCS PD version2.		
DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Section 1.15 of VCS PD ^{/PD2/} is now updated and describes the organisation structure which details the roles and responsibilities of monitoring team in-order to ensure the verifiable emission reductions. The description of section 1.15 is in-line with VCS PD template. Thus, CAR is closed out.		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements		

Final Assessment

The responsibly for the project monitoring are duly described in the VCS-PD^{/PD2/}. During the site visit this topic was discussed in detail. Taking into consideration that most of the monitoring parameters are already measured as part of regular plant operations and that Milkfood Limited provides an experienced and qualified team of experts for the monitoring equipment, the validation team arrived at the above conclusion. However as described in the PD, roles and responsibility are properly described and same is found during site visit interview.

- The responsibilities and authorities for monitoring are defined in line with the requirements of the VCS.

3.4 Calculation of GHG emissions

3.4.1 Appropriateness of the source, sink and reservoir

Description

ERs are claimed exclusively for the abatement of CO₂ emissions which is an unavoidable result of the fossil fuel combustion in the baseline scenario. Renewable biomass being carbon neutral does not contribute to emissions and hence emission reductions are achieved by the project. Sources, sinks and reservoirs of GHGs are appropriately identified in the section 2.3 of the VCS PD^{PD1/}.

In section 2.3 of the VCS PD^{PD1/}, details of physical location i.e. the latitude and longitude of the proposed project activity is mentioned. The project boundary includes renewable energy generating equipment i.e. biomass fired boiler and turbo generator (cogeneration unit) as well as the milk processing plant facilities which utilizes the ultimate energy generations and biomass storage as well. Also, for project activity I, coal based boiler used in pre-project scenario is also considered in project boundary, though it was already dismantled and it is planned to be scraped and for project activity II, DG sets are considered in the project boundary. Thus the chosen project boundary is as depicted by the applied methodology i.e. AMS I.C, version 18.

All the sources of GHGs are included in the project boundary as required by the applied methodologies i.e. AMS I.C, version 18 and AMS I.D, version 16. In the absence of the proposed project activity, the source of GHGs emissions would have been baseline CO₂ emissions for the thermal energy (steam/heat) generation and KWh of electricity production by the renewable generating unit (biomass based energy generation). Also as per project emission section (Para 43) of the applied methodology, on-site consumption of fossil fuels and auxiliary electricity due to the project activity has been considered as a monitoring parameter in the crediting period and project emission incurred from the same will be calculated *ex-post*. Also justification of neglecting the leakages due to equipment transfer and biomass handling and processing has been demonstrated.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Final Assessment

In line with § 45-46, AMS I.C. version 18, demonstration of the leakage emissions has been addressed in section 4 of VCS-PD^{/PD2/} and the same has been assessed with the provided supportive documents i.e. biomass availability report^{/BIO/} and interview of the biomass suppliers, project participant etc.

- Regarding the appropriateness of the source, sink and reservoir the project activity is in line with the applicable VCS criteria.

3.4.2 Correctness and transparency of formulae and factors used

Description

Methodologies for calculating emission reductions are documented. The project intends to reduce carbon dioxide (CO₂) emissions by generating thermal energy and electrical power from renewable biomass based co-generation plant, which would be consumed within the project plant for milk processing.

Possible project emission includes CO₂ emissions from on-site consumption of fossil fuels due to the project activity and shall be calculated ex-post using the latest version of “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion”. However, the project emissions are assumed to be zero for *en ante* calculation of emission reductions.

As per the methodology AMS-I.C version 18, leakage emissions have to be calculated in case of transfer of energy generating equipment from outside the boundary to the project activity. Leakage is also to be considered if biomass residues are transported over a distance of more than 200 kilometres due to the implementation of the project activity. Both the emissions are not considered for *ex-ante* calculations as the project does not involve any equipment transfer and biomass residues are procured from an area not more than 50 km from the project plant.

The calculation approach and calculation of the baseline emission and emission reduction are documented in section 4.1 of PD^{/PD1/}.

According to the VCS PD^{/PD1/}, the project is expected to reduce emissions of 696930 tCO_{2e} over a 10 year crediting period. The DOE has assessed the emission reduction calculation sheet^{/XLS1/} and parameters used therein, and found that estimated emission reductions are according to the applied methodology and tool and thus concluded them plausible and conservative for the proposed project activity.

Related Findings

- No CARs, CLs or FARs have been identified in this context

The following finding(s) have been addressed:

Final Assessment

All applied formulae and emission factor are in line with AMS I.C., version 18.

The formulae and factors applied are correct and transparent and thus in line with the VCS criteria.

3.4.3 Assumptions made for GHG emission reduction estimations

Description

The parameters used for ex-ante calculation are partly based on measured and estimated data. The baseline emission factor for thermal energy component of project (EF_{EF,CO_2}) is default emission factor for coal as per Indian (national data) GHG Inventory Information from NATCOM (India), which is in line with the requirements of § 13 of the applied methodology^{/AMS-I.C./}. The grid emission factor used for calculation of baseline emission for electricity generation component of project activity is calculated as per the tool to calculate emission factor for an electricity system . The input data to calculate grid emission factor are taken from publically available information i.e. Central Electricity Authority data base version 05 which was the latest available information at the time of the PD (version 01) submission to DOE.

The calculation of grid emission factor is thoroughly assessed against the requirement of tool to calculate emission factor for an electricity system version 02 and applied methodology and found to be correct and complying to the applied tool and methodology.

The grid emission factor ($EF_{grid,CM, y}$) is estimated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) factors. In this case the Combined Margin (Simple Operating Margin and Build Margin) is estimated based on three years generation weighted average (2006-07, 2007-08, 2008-09) of Simple Operating Margin and Build Margin of last year (2008-09) in line with steps of tool to calculate the emission factor for an electricity system (version 02). Both the value of Simple Operating Margin and Build Margin are selected under ex-ante approach. The grid boundary w.r.t the connected state grid is northern regional grid of India, which is now synchronised with western, eastern and northern-eastern regional grid to form NEWNE grid.

Out of other 3 options of calculating OM, Milkfood Limited has rightly selected simple OM emission factor calculation as the share of low cost / must run resources of the selected grid over the five most recent years (2004-05, 2005-06, 2006-07, 2007-08, 2008-09) is < 50% of the gross grid generation^{/cea/}.

In accordance with tool to calculate emission factor for an electricity system, version



02 weight factors of $w_{OM} = 0.50$ and $w_{BM} = 0.50$ has been used and the resultant grid emission factor ($EF_{grid,CM,y}$) works out as $0.84 \text{ tCO}_2/\text{MWh}$. The calculation of $EF_{grid,CM,y}$ is publicly available and published by the Central Electricity Authority on its website^{/cea/}. The validation team is convinced of the result of the emission factor calculation^{/XCS/}. It is deemed to be adequate and transparent.

The other parameters monitored ex post as mentioned in section 3.3 of VCS PD were also checked and verified during the site visit by checking the logbooks. These were found to be satisfactory.

The parameters used for ex-ante calculation of the baseline emission are based technical specification of the boiler.

The parameter are as follows:

- Installed capacity of the boiler (14TPH and 12 TPH) as per the design specification provided by Boiler manufacturer M/s Cheema Boilers Ltd. And M/s Industrial Boiler Ltd.
- Steam pressure, pressure and flow required for process at different points (pls. per line diagram of the project activity) as per detailed project report.
- Operating hours per day is 22 hrs and annual operating days are 365 days as per the local industry standard and detailed project report.
- Boiler efficiency is $78 \pm 2\%$, considered from the provided design specification by Boiler manufacturers

Based on the above parameter, annual thermal energy of steam is calculated by the enthalpy of the steam.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Finding:	3.4.3-1		
Classification	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section 4.2 of VCS PD, calculations of baseline emissions for project activity I seems repeated and same as of project activity II, which is not as per the calculation spreadsheet submitted to the validation team. Transparent calculations for project activity I and II shall be described in section 4.2 of the PD.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Calculations has been corrected and included in the section 4.2 of the revised VCS PD Version 2.		



<p>DOE Assessment #1 <i>The assessment shall encompass all open issues. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>The calculations of baseline emissions for project activity I and II in section 4.2 of VCS PD^{/PD2/} are revised. Validation team has checked the emission reduction calculations and verified all the the input data and parameter used for calculation of emission reductions from the submitted project feasibility report^{/PFR/}, technical parameters based on purchase order^{/PO/} and found consistent. Thus, assumptions made for the purpose of the ex-ante ER calculation are reasonable and backed up by appropriate evidences. The calculation approach is inline with applied methodology AMS.I.C. Version 18.</p>
<p>Conclusion <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements</p>

Final Assessment

The input values of technical input parameters i.e. steam out capacity, Operating Hours per day, steam temperature; steam pressure, boiler efficiency, Installed Turbo-generator capacity etc. consider for the purpose of the *ex-ante* calculation can be assessed as reasonable and backed up by technical design specifications provided by the manufacturer as well as from the plant log book records. The calculated emission reduction of 696930 tCO₂ eq is most likely to be achieved throughout the crediting period.

- The project technology and the description of the same are line with the applicable VCS criteria.

3.4.4 Uncertainties

Description

The applied CDM methodologies AMS.I.C, version 18 does not addresses any uncertainties as part of the project monitoring for monitoring parameter and for ex-ante calculation.

No uncertainties in the ex-ante calculation of baseline emission and hence ER calculations are found.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Final Assessment

The calculation includes detailed spreadsheet^{/XLS1/} comprising of technical input parameters i.e. steam out capacity, operating Hours per day, steam temperature, boiler efficiency, TG installed capacity, PLF etc with proper references to ensure that all assumptions made for calculation are correctively and conservatively applied so that the danger of overestimation of ER can be considered as negligible. Validation team has checked the specific enthalpy of superheated steam at design pressure and the applied formulae for ex-ante calculations of baseline emission and No uncertainties are found in ER calculations.

- The consideration of uncertainties is in line with the applicable VCS criteria.

3.5 Environmental impact

Description

The requirements for an Environmental Impact Assessment (EIA) are ruled by the Ministry of Environment and Forest, Government of India^{/EIA/}. As per Ministry of Environment and Forests (MoEF) Notification No. – S.O. 1533, dated 14th September 2006 act, no EIA is required for this kind of project activities (biomass based project).

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Final Assessment

As per the host country legislation i.e. Ministry of Environment and Forests (MoEF) Notification No. – S.O. 1533, dated, 2006-09-14, no EIA is required. The

corresponding legislation was checked. Furthermore the validation team is convinced that no adverse environmental impacts are to be considered for this kind of project activity.

- The project activity is in line with the environmental impact assessment criteria of the VCS.

3.6 Comments by stakeholders

Description

A local stakeholder meeting was carried out on dated 2009-07-27 and 2009-07-30 at Milkfood Ltd. Factory premises at Patiala, Punjab and Muradabad, U.P. Invitation for stakeholders consultation meetings were sent out by Milkfood Ltd. Via advertisement in the newspaper, through munadi (announcement by a hired person in the village/localities). The meeting was attended by the different group of peoples like consultants, Panch and villagers, biomass-suppliers, contractors and the local residents in the area.

After the discussions on the objective of the proposed project activity and the environmental and social impacts of the project activity, no adverse comments from stakeholders regarding implementation of the project activity is resulted^{/LSC/}.

Considering the kind of project and the absence of negative effects to the environment and the local stakeholder's opinion, the validation team considers this to be in line with the VCS requirements.

Related Findings

- No CARs, CLs or FARs have been identified in this context
- The following finding(s) have been addressed:

Final Assessment

A local stakeholder consultation process was carried out on dated 2009-07-27 and 2009-07-30. The corresponding evidences i.e. news paper advertisement, attendance sheet, stake holder minutes of meeting and stake holder photographs has been checked. Furthermore the validation team is convinced that no adverse/negative comments have been received.

- The stakeholder consultation process is in line with the VCS requirements.

4 VALIDATION STATEMENT

Milkfood Limited has commissioned the TÜV NORD JI / CDM Certification Program to carry out the validation of the Project “1.6 MW Bundled Rice Husk Based Cogeneration Plant by M/s Milkfood Limited in Patiala (Punjab) & Moradabad (U.P) Districts”. The proposed project undertaken is a bundle of two cogeneration plants of capacity 1.0 MW (with 14TPH steam generation) and 0.6 MW ((with 12 TPH steam generation) located at Bahadurgarh, Patiala in the state of Punjab and Mugalpur, Moradabad in the state of Uttar Pradesh respectively in India with regard to the requirements of VCS 2007.1 Guidelines/ VCSA Rules for project activities, as well as criteria for consistent project operations, monitoring and reporting.

The project activity involves utilization of rice husk available in the regions for thermal and electrical power generation for captive consumption, thereby reducing the GHG emissions.

In the course of the validation, Six (06) Corrective Action Requests (CARs) were successfully closed and One (01) Forward Action Request (FAR) will be verified during the first periodic verification.

The review of the project design documentation, proof of title and additional documents related to baseline and monitoring methodology and subsequent background investigation have provided the TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfilment of the stated criteria.

As a result of the validation, the validation team confirms that:

- The project fulfils criteria of VCS 2007.1 provided.
- The project additionality is sufficiently justified in the PD.
- The project is in line with all relevant host country legislation incl. its GHG assertions, where applicable.
- All data and information used for ex-ante calculation of emission reductions is of projected and/or hypothetical nature.
- The monitoring plan is transparent, adequate and in-line with the applied baseline and monitoring i.e. AMS I.C., version 18: “Thermal energy production with or without electricity” approved small scale methodology of UNFCCC CDM program are correctly co-applied.
- The monitoring plan is transparent and adequate.
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 696930 t CO₂e (total) is most likely to be achieved within the 10

years fixed crediting period starting from 2009-05-06.

The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation against the 2007.1 standard without any qualifications or limitations.

Essen, 2011-04-28

A handwritten signature in black ink, appearing to read "Archak Pattanaik".

Archak Pattanaik
TÜV India Pvt. Ltd.
Validation Team Leader

Essen 2011-05-03

A handwritten signature in black ink, appearing to read "Rainer Winter".

Rainer Winter
TÜV NORD JI/CDM Certification
Program
Final Approval

5 REFERENCES

Table 5-1: Documents provided by the project participant

Reference	Document
/ADD/	<p>Project feasibility study Project feasibility report for Installation of Biomass based cogeneration Unit at Muradabad Plant and Patiala Plant prepared by third party i.e. Advance Energy System during March 2007.</p> <p>Investment barrier: <u>Project activity –I</u></p> <ol style="list-style-type: none"> 1. Invoice issued by coal supplier i.e. M/s Ambe Traders to Milkfood Limited, Bahadurgarh, Patiala, dated 2007-06-05. 2. Invoice issued by coal supplier i.e. M/s Ambe Traders to Milkfood Limited, Bahadurgarh, Patiala, dated 2007-05-28. 3. Invoice issued by rice husk supplier i.e. Antal Traders to Milkfood Limited, Bahadurgarh, Patiala, dated 2010-12-09. 4. Invoice issued by rice husk supplier i.e. Antal Traders to Milkfood Limited, Bahadurgarh, Patiala, dated 2010-12-02. 5. Sample copies of electricity bill issued to consumer i.e. Milkfood Limited, Aganpur (Bahadurgarh), Patiala for the month of 2007-04-27 to 2007-05-23 and 2007-02-24 to 2007-03-26. 6. Quotations from rice husk suppliers i.e. M/s Karan Traders dated 2007-07-13. 7. Techno-commercial offer for supply of 14 TPH, 45Kg/cm² pressure, 440±10°C SH for coal fired and rice husk based boiler from Cheema Boilers Limited, dated 2007-02-15. <p><u>Project activity –II</u></p> <ol style="list-style-type: none"> 8. Quotations from rice husk suppliers i.e. M/s Hari OmTraders, dated 2007-04-11, Raees Ahmed, dated 2007-04-09.
/CON/	The signed contract between TUV NORD Cert GmbH and Milkfood Limited for carrying out VCS validation of the proposed project activity dated 2010-12-17
/CCI/	<p><u>(Project activity-I).</u></p> <ol style="list-style-type: none"> 1. Commissioning certificates of project activity 14 TPH, 45 kg/cm² Fluidized bed Combustion Boiler commissioned on 2009-05-06 at

Reference	Document
	<p>Milkfood Limited, Patiala, issued by M/s Cheema Boilers Pvt. Ltd. Dated 2009-05-11.</p> <p><u>(Project activity-II).</u></p> <p>2. Commissioning certificates of project activity 12 TPH, 32 kg/cm² Fluidized bed Combustion Boiler commissioned on 2009-06-04 at Milkfood Limited, Muradabad, issued by M/s Cheema Boilers Pvt. Ltd. Dated 2009-06-08.</p>
/BEFF/	<p>1. Third party engineering certificate from Industrial Boilers Limited showing the coal fired boiler's thermal efficiency, dated 2010-12-20.</p> <p>2. Techno-commercial offer for supply of 14 TPH, 45Kg/cm² pressure, 440±10°C SH for coal fired and rice husk based boiler from Cheema Boilers Limited, dated 2007-02-15.</p>
/BIO/	<p>1. Biomass assessment report based on survey conducted by third party i.e. Advance Energy System in Tehsil Muradabad, Uttar Pradesh during March 2009.</p> <p>2. Biomass assessment report based on survey conducted by third party i.e. Advance Energy System in state of Punjab during March 2009.</p> <p>3. Statement showing the custom Milled Rice up to 2010-03-31 to 2010-07-31 in district Patiala (Punjab), issued by District Manager, Punjab State Civil Supplies Corporation Limited.</p>
/PFR/	<p>Project feasibility report for Installation of Biomass based cogeneration Unit at Muradabad Plant and Patiala Plant prepared by by third party i.e. Advance Energy System during March 2007.</p>
/MD/	<p>Extract of Minutes of Meeting of Board of Director (BOD) held on 2007-06-06 at Nehru Place, New Delhi for the discussions of Husk fired boiler and steam turbine (Cogeneration Unit) at Muradabad and Patiala Plant.</p>
/OFFER/	<p>Techno-commercial offer for supply of 14 TPH, 45Kg/cm² pressure, 440±10°C SH for coal fired and rice husk based boiler from Cheema Boilers Limited, dated 2007-02-15.</p>
/PD1/	<p>Draft Project document entitled "1.6 MW Bundled Rice Husk Based</p>

Reference	Document
	Cogeneration Plant by M/s Milkfood Limited in Patiala (Punjab) & Moradabad (U.P) Districts, version 01, dated 2011-01-24.
/PD2/	Project document entitled “1.6 MW Bundled Rice Husk Based Cogeneration Plant by M/s Milkfood Limited in Patiala (Punjab) & Moradabad (U.P) Districts, version 02, dated 2011-04-15.
/PHOTO/	Photos of all project activity monitoring equipments
/PLF/	<ol style="list-style-type: none"> 1. Third party chartered engineer certificate (Ref. No. NK/MF/CE/0510/02) stating the Plant load factor and working life of 1.0 MW turbo generator at Bhadurgarh plant, dated 2010-05-18 (Project activity-I). 2. Third party chartered engineer certificate (Ref. No. NK/MF/CE/0510/01) stating the Plant load factor and working life of 0.6 MW turbo generator at Moradabad Plant, dated 2010-05-18 (Project activity-II).
/PO/	<ol style="list-style-type: none"> 1. Purchase order issued to M/s Cheema Boilers Pvt. Ltd. Dated 2007-07-10 for supply of 14TPH, 45 Kg/cm² FBC rice husk boiler. 2. Purchase order issued to M/s Industrial Boiler Ltd. Dated 2007-07-25 for supply of 12TPH, 32 Kg/cm² FBC rice husk boiler. 3. Purchase order issued to M/s I.B. Turbo Pvt. Ltd. For supply of back pressure turbine dated 2007-07-25. 4. Purchase order issued to Pentagon Turbines Pvt. Ltd. For supply of 1MW back pressure turbine dated 2007-08-16.
/PT/	Certificate of Incorporation No. 6545/1972-73 issued by Registrar of Companies issued on 1973-03-31
/SD/	Proof of start date of the project: Purchase order issued to M/s Cheema Boilers Pvt. Ltd. Dated 2007-07-10 for supply of 14TPH, 45 Kg/cm ² FBC rice husk boiler.
/SC/	<ol style="list-style-type: none"> 1. Boiler inspection certificate issued from Director of Boiler, Punjab, valid for the period from 2009-07-17 to 2010-07-15. 2. Consent to operate under section 21 of Air (Prevention and Control of Pollution) Act 1981, dated 2008-04-27 issued by Punjab Pollution Control Board. 3. Electrical safety certificate dated 2008-05-30 issued by Assistant Director, Electrical Safety, U.P.

Reference	Document
	4. Consent to operate under section 21 of Air (Prevention and Control of Pollution) Act 1981 and Water act 1974, dated 2008-04-21 issued by U.P. Pollution Control Board.
/LSC/	Stakeholder consultation process evidences: 1. News paper Invitation dated 2009-07-17. 2. Attendance records of stakeholder's meeting held at Milkfood Limited, Bahadurgarh Patiala on dated 2009-07-27. 3. Attendance records of stakeholder's meeting held at Milkfood Limited, Muradabad on dated 2009-07-30. 4. Minutes of stakeholder's meeting dated 2009-07-27 and 2009-07-30 for Patiala plant and Moradabad plant respectively.. 5. Photographs of Stakeholder consultation process.
/PT/	Certificate of incorporation of the project proponent i.e. Milkfood Limited under companies act 1956, issued by Registrar of Companies.
/TR/	Test report of Net Calorific Value (Kcal/Kg) of rice husk conducted by third party i.e. Delhi Test House, dated 2010-06-02.
/TD/	1. Purchase order issued to M/s Cheema Boilers Pvt. Ltd. Dated 2007-07-10 for supply of 14TPH, 45 Kg/cm ² FBC rice husk boiler. 2. Purchase order issued to M/s Industrial Boiler Ltd. Dated 2007-07-25 for supply of 12TPH, 32 Kg/cm ² FBC rice husk boiler.
/UND/	1. A certificate of undertaking stating that the proposed project activity does not involve any O.D.A. (Official Development Assistance) Funds, dated 2009-09-30. 2. Undertaking by the PP stating that project is not rejected under any other GHG programs 3. Undertaking by the PP stating that project has not created another form of environment credit
/XLS1/	Excel – Calculation sheets provided by the project participant (related to Webhosted PDD version 1).

Table 5-2: Background investigation and assessment documents

Reference	Document
/AMS.I.C/	Thermal Energy production with or without electricity I.C, Version 18

Reference	Document
/BEE/	Chapter 1 Fuels and combustion, Book 2 of Bureau of Energy Efficiency
/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/GCP/	UNFCCC: Guidelines for completing CDM-PDD and CDM-NM
/IPCC-GP/	IPCC Good Practice Guidance & Uncertainty Management in National Greenhouse Gas Inventories, 2000
/IPPC-RM/	Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual
/ISO 14064/	Greenhouse gases -- Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals Greenhouse gases -- Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements Greenhouse gases -- Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions
/ISO14065/	Greenhouse gases -- Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition
/KP/	Kyoto Protocol (1997)
/MA/	Decision 3/CMP. 1 (Marrakesh – Accords & Annex to decision (17/CP.7))
/TA/	Tool for the demonstration and assessment of additionality (Ver. 4 – Ver. 5.2).
/VVM/	Validation and Verification Manual (Version 1.1, Annex 3; EB 51)
/VDS-PD-T/	VCS PD Template
VCS	Voluntary Carbon Standard 2007.1

Table 5-3: Websites used

Reference	Link	Organisation
/dna-i/	http://www.cdmindia.nic.in/	National CDM Authority (DNA of India)

Reference	Link	Organisation
/cd4cdm/	www.cd4cdm.org	UNEP Riso Centre
/cheema/	http://www.cheemaboilers.com/	Cheema Boilers Limited
/dth/	http://www.delhitesthouse.com/	Delhi Test House (Laboratory)
/ibl/	http://www.indboilers.com/	Industrial boilers Limited
/mfl/	http://www.milkfoodltd.com/	Milkfood Limited
/gzdt/	http://www.gov.cn/gzdt/2005-12/30/content_142048.htm	Guiding List on Energy Industry Restructure
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications
/natcom/	http://www.natcomindia.org/natcomreport.htm	India's National Communication to UNFCCC
/punsup/	http://punsup.gov.in/	Punjab State Civil Supplies Corporation Limited
/unfccc/	http://cdm.unfccc.int	UNFCCC

Table 5-4: List of interviewed persons

Reference	Mol ¹		Name	Organisation / Function
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Amar Baljeet Singh	Vice President, Milkfood Limited
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	R. Sapra	Finance President, Milkfood Limited
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Sudheer Awasthi	Finance, Director, Milkfood Limited
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	B.M. Katyal	G.M. Commercial, Milkfood Limited
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Sanjay Kothjala	G.M. Accounts, Milkfood Limited

Validation Report: 1.6 MW Bundled Rice Husk Based Cogeneration Plant
by M/s Milk food Limited (MFL) in Patiala (Punjab) & Moradabad (U.P)
Districts

TÜV NORD JI/CDM Certification Program

P-No.: 8107526922 – 11/67



Reference	Mol ¹		Name	Organisation / Function
/IM02/	T	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Brar	Engineer, Cheema Boilers Limited
/IM02/	V	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms	Ruchika Sharma	Consultant

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