VALIDATION REPORT

SCHREIBER DYNAMIX DAIRIES LTD.

WASTE WATER TREATMENT AND BIOGAS RECOVERY PROJECT

Report No: 8106003378- 09/413

Date: 2012-08-31

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Validation Report:	***Report No.***	***Rev. No.***	***Date of 1st issue:***	***Date of this rev.***
	8106003378- 09/413	1.0	2012-06-01	2012-08-31
Project:	***Title:***		***Initial PDD Version:***	***Final PDD Version***
	Waste water treatment and biogas recovery project		Version – 01 dtd-2009-03-20	Version – 12 dtd - 2012-08-30
Client:	Schreiber Dynamix Dairies Ltd.		***Client ref:***	Mr. Jitendra Laxman Jadhav (General Manager)
Project Participant(s):	***Host Party:***		***Other involved parties:***	
	India		NA	
Applied methodology/ies:	***Title:***		***No.:***	***Scope / TA:***
	1. "Methane Recovery in Wastewater Treatment" 2. "Thermal energy production with or without electricity"		1. AMS III. H , version 16 2. AMS I. C Version 19	**Scope:** AMS III. H - 13; AMS I. C – 01 **TA:** AMS III. H - 13.1; AMS I. C – 1.1 and 1.2
Validation team / Technical Review and Final Approval	***Validation Team:***		***Technical review:***	***Final approval:***
	Mr. Manojkumar Borekar (TL and TE), Dr. Atul Takarkhede (TM), Mr. Swapnil Thanekar (TM), Mr. Anudeep Thorat (TE)		Stefan Winter	Stefan Winter
Expected Emission reductions: [t CO_2e]	***Expected emission reductions over the first crediting period:***		***(Expected) project starting date:***	
	143240 t CO_{2e}		2012-07-01	
Confidential content:	☒ Yes		☐ No	
Summary of Validation Opinion:	☒ Positive validation opinion		☐ Negative validation opinion	

Schreiber Dynamix Dairies Ltd. has commissioned TÜV NORD JI/CDM Certification Program (CP) to validate the project: "Waste water treatment and biogas recovery project" with regard to the relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria include article 12 of the Kyoto Protocol/KP/, the modalities and procedures for CDM (Marrakech Accords)/MA/ and the relevant decisions by COP/MOP and CDM Executive Board.

In the course of the pre-validation 18 Corrective Action Requests (CARs) and 02 Clarification Requests (CLs) were raised.

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

In detail of the conclusions can be summarised as follows:

- The project is in line with all relevant host country criteria (India) and all relevant UNFCCC requirements for CDM. Project activity approval have been obtained from DNA of India vide the Letter (No. 4 /10/2009-CCC) of Approval (HCA) dated 2009-07-17 from DNA of India/HCA/.
- The project additionality is sufficiently justified in the PDD/PDD/.
- The monitoring plan/MP/ 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 143240 tCO_2e are most likely to be achieved within the fixed crediting period. The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.	
Document information:	*Filename:*	*No. of pages:*
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Abbreviations

BAU	Business as usual
CA	Certified Accountant
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CER	Certified Emission Reduction
CO_2e	Carbon dioxide equivalent
CP	Certification Program
CL	Clarification Request
DNA	Designated National Authority
DR	Document Review
DG	Diesel Generator
EB	CDM Executive Board
EIA	Environmental Impact Assessment
GHG	Greenhouse gas(es)
GWh	Giga Watt Hour
HCA	Host Country Approval
HSD	High Speed Diesel
IDA	Indian Dairy Association
I	Interview
IPCC	Intergovernmental Panel on Climate Change
KWh	Kilo Watt hour
MoEF	Ministry of Environment and Forest
MWh	Megawatt hour
NEWNE	Northern, Eastern, Western, North Eastern
ML	Mother Liquor
MPCB	Maharashtra Pollution Control Board
ODA	Official Development Assistance
PDD	Project Design Document
QC/QA	Quality control/Quality assurance
ROE	Return on Equity
SDDL	Schreiber Dynamix Dairies Ltd.
UASB	Up flow Anaerobic Sludge Blanket
UNFCCC	United Nations Framework Convention on Climate Change
WWTP	Wastewater Treatment Plant

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1 OBJECTIVE / SCOPE

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

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

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

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

The information included in the PDD[/PDD/] and the supporting documents were reviewed against the requirements as set out by the UNFCCC. The validation team has, based on the requirements in the Validation and Verification Manual[/VVM/], carried out a full assessment of all evidences to assess the compliance of the project with the key areas as outlined in section V.E. and V.F. of the VVM (version 01.2, EB 55).

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

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

2 GHG PROJECT DESCRIPTION

2.1 Project Characteristics

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

Table 2-1: Project Characteristics

Item	Data		
Project title	Waste water treatment and biogas recovery project		
Project size	☐ Large Scale ☒ Small Scale		
Project Scope *(according to UNFCCC sectoral scope numbers for CDM)*	☒	1	Energy Industries (renewable- /non-renewable sources)
	☐	2	Energy distribution
	☐	3	Energy demand
	☐	4	Manufacturing industries
	☐	5	Chemical industry
	☐	6	Construction
	☐	7	Transport
	☐	8	Mining/Mineral production
	☐	9	Metal production
	☐	10	Fugitive emissions from fuels (solid, oil and gas)
	☐	11	Fugitive emissions from production and consumption of halocarbons and hexafluoride
	☐	12	Solvents use
	☒	13	Waste handling and disposal
	☐	14	Afforestation and Reforestation
	☐	15	Agriculture
Applied Methodology	AMS III. H. :-"Methane Recovery in Wastewater Treatment" Version 16 AMS I. C. :-"Thermal energy production with or without electricity" Version 19		
Technical Area(s)	AMS III. H - 13.1; AMS I. C – 1.1 and 1.2		
Crediting period	☐ Renewable Crediting Period (7 y) ☒ Fixed Crediting Period (10 y)		
Start of crediting period	2012-07-01 or a date of registration of the small scale project activity whichever is later.		

2.2 Involved Parties and Project Participants

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

Table 2-2: Project Parties and project participants

Characteristic	Party	Project Participant
Host party	India	Schreiber Dynamix Dairies Ltd.
Other involved party/ies	-	No Annex-I Party is involved at the Validation stage.

2.3 Project Location

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

Table 2-3: Project Location

No.	Project Location
Host Country	India
Region:	Maharashtra
Project location address:	Plot no: E – 94, MIDC, Baramati taluk, Pune district
Latitude:	18° 11′ 24.16″ N
Longitude:	74° 37′ 06.04″ E

2.4 Technical Project Description

The project proponent is procuring about 800,000 -1,000,000 litres of milk/day from the surrounding districts for producing the dairy products. During Lactose recovery from whey, Mother Liquor (De-Lactose Permeate (DLP)) is generated which contains 95.62% organic matter and its COD (Chemical Oxygen Demand) value is in the range of 350,000 mg/L to 390,000 mg/L. This mother liquor is treated in two anaerobic digesters (1017 m^3 each) having designed capacity to treat 45 m^3/day of mother liquor. Captured biogas was then used to generate the steam using two number of dual fuel (biogas and FO) fired boilers having capacity of 13.2 TPH (F&A100).

There are two main streams of wastewater generation at SDDL.

1. Wastewater is generating from processing of milk, yogurt and other dairy products having COD of in the range of 4500 mg/L to 6000 mg/L.
2. Mother liquor generating from production of dairy products cheese and casein having COD of 350,000 mg/L to 390,000 mg/L.

Before implementation of the project activity (pre-project scenario) wastewater from processing of milk, yogurt and other dairy products was treated in the existing 2000 m^3 (1000m^3+500m^3+500m^3) Waste Water Treatment Plant (WWTP). The wastewater is treated with aerobic as well as anaerobic treatment using 3 no. of anaerobic digesters. The biogas generated from these 3 no of digesters was captured and flared in the atmosphere.

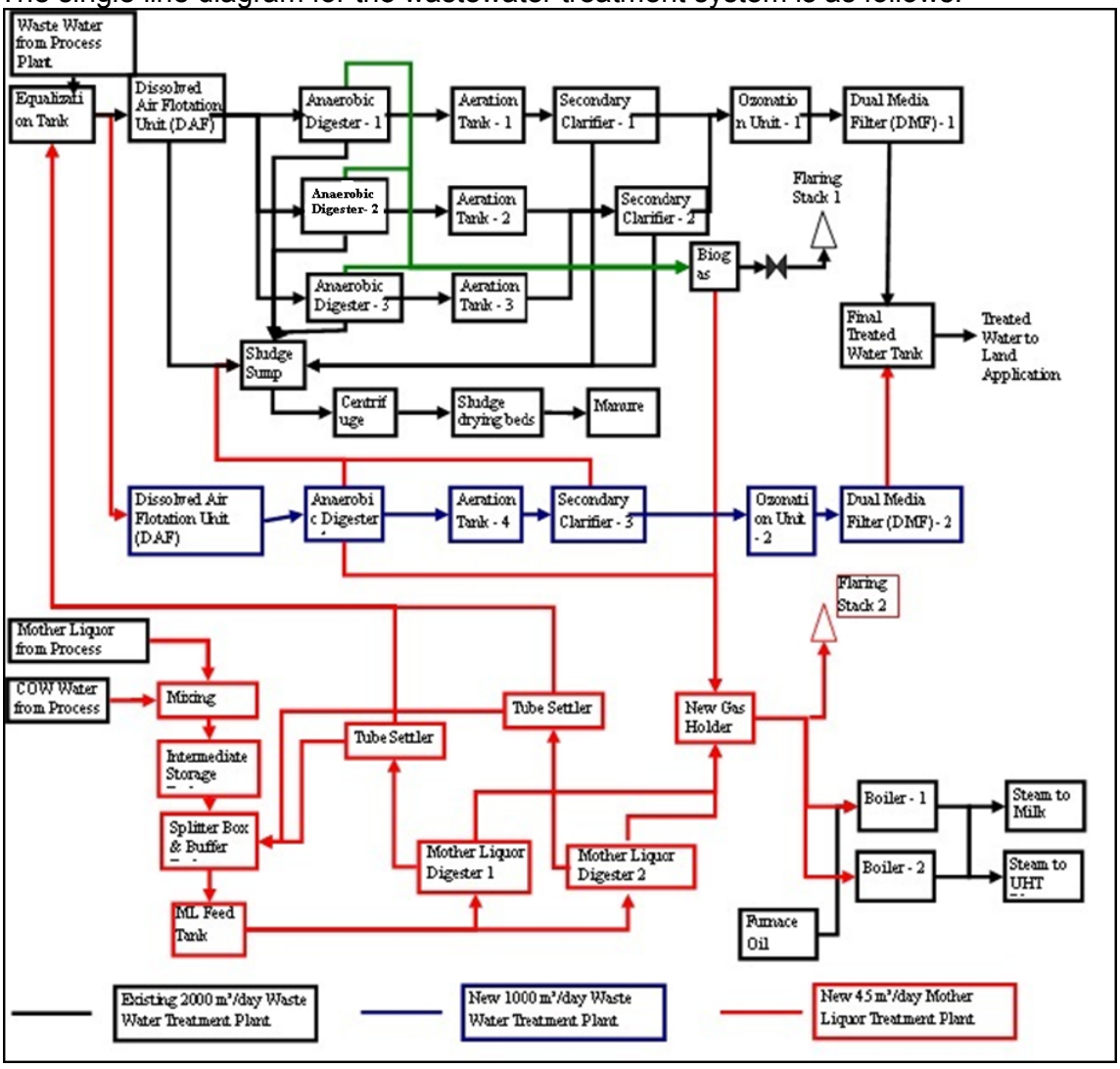
Further, mother liquor generated from production of dairy products, cheese and casein having the COD in the range of 350,000 mg/L to 390,000 mg/L was treated in the two anaerobic deep lagoons without methane recovery.

In the project activity, wastewater was continued to treated in the existing 2000 m^3 WWTP along with newly constructed 1000 m^3 WWTP having same design and operating parameter as of existing 2000 m^3 WWTP. Further, the mother liquor having 95.62% organic matter and COD in the range of 350,000 mg/L to 390,000 mg/L is treated in specially designed newly constructed anaerobic digesters (Mother Liquor Treatment Plant – MLTP) with methane recovery. This mother liquor is having very

high COD and thick in nature needs dilution. Hot cow water is added for dilution and to maintain the temperature requirement of Mother Liquor digesters. The cow water has negligible COD (less than 100 mg/L). MLTP digesters outlet has high organic load (approx 80,000 mg/L) and requires further treatment. This MLTP digesters outlet goes to equalization tank. This common equalization tank receives wastewater from milk processing unit having COD of 4500 mg/L to 6000 mg/L and MLTP digesters having COD of approx 80,000 mg/L. Wastewater in equalization tank is further treated in the existing 2000 m^3 as well as newly constructed 1000 m^3 WWTP. A new 1000 m^3 WWTP is constructed as the existing 2000 m^3 WWTP is not having a capacity to treat more than 2000 m^3 waste water. The newly constructed 1000 m^3 WWTP has same operational conditions as that of existing 2000 m^3 WWTP. Ozonation treatment is given to the outlets of these 2000 m^3 and 1000 m^3 WWTP.

The generated biogas from anaerobic treatment (2 digesters of MLTP and 4 digesters of WWTP) is captured and used in the retrofitted boiler as fuel along with FO.

The single line diagram for the wastewater treatment system is as follows:



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

Table 2-4: Technical data of the project activity

Parameter	Unit	Value
Design basis for 45m^3/day mother liquor:		
Mother Liquor		
Total flow	m^3/day	45
COD	mg/L	Range of 350,000 - 390,000
BOD	mg/L	220,000
TSS	(w/v) %	5
pH	-	3-5.5
Cow water		
Total flow	m^3/day	75
COD	mg/L	<100
BOD	mg/L	<10
pH	-	6.6 – 7.3
Tank designation		
Buffer Tank	-	24 m^3, above ground structure with suitable lining.
Digester Feed tank	-	3m diameter x 3m SWD + 0.3m free board, above ground structure with suitable paint lining.
Anaerobic Digester tank (2 Nos.)	-	12m diameter x 9m straight height, with covered top and sloping bottom. MS/RCC
Digester COD removal efficiency[1]	%	80
Gas holder outside tank	-	9.6m diameter x 4.75m height, to accommodate MS gas holder shell of 9m diameter
New WWTP		
Flow	M^3/day	1000
COD Inlet	Mg/L	5000-6000
COD outlet	Mg/L	≤ 150
2.4.1	2.4.2	2.4.3
Existing WWTP		
Flow	M^3/day	2000
COD Inlet	Mg/L	4000-6000
COD outlet	Mg/L	≤ 200
Technical specification of boilers: (MR13343, MR13450)		

[1] Inlet COD of 400,000 mg/L and outlet of 80,000 mg/L as per Thermax offer (Ref:- Wws:Tmn:DDIL:BiogasBoiler:TCOff-05dated 2008-03-06)

Parameter	Unit	Value
Appliance	-	Steam boiler
Type	-	3 pass, conventional, smoke tube type
Make	-	Thermax
Model	-	SM 140 B
Sr. No	-	MR13343, MR13450
Steam generation capacity	Kg/h	13200 (F&A 100°C)
Designed pressure	Kg/cm^2	23.5
Combustion air temperature	-	Ambient
Present thermal efficiency considered	%	89 @ NCV with economizer
Diesel Generators		
DG	2.4.4	2.4.5
Make	2.4.6	Detroit
Number of units	2.4.7	01
Capacity	kW	1455
Model Number	-	9163-7416
2.4.8	2.4.9	2.4.10
Make	2.4.11	Detroit
Number of units	2.4.12	03
Capacity	kW	765
Model Number	-	8163-7416

3 METHODOLOGY AND VALIDATION SEQUENCE

3.1 Validation Steps

The validation of the project consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the project design document (PDD)
- Desk review of the PDD and supporting documents
- Validation planning
- On-Site assessment
- Background investigation and follow-up interviews with personnel of the project developer and its contractors
- Draft validation reporting
- Resolution of corrective actions (if any)
- Final validation reporting
- Technical review
- Final approval of the validation

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

Table 3.1: Validation sequence

Topic	Time
Assignment of validation	2009-08-19
Submission of PDD for global stakeholder commenting process	2010-02-09
On-site visit	2010-04-08
Draft reporting finalised	2010-05-17
Final reporting finalised	2012-08-31
Technical review on final reporting finalised	2012-08-31

3.2 Contract review

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the validation can be provided,

- Impartiality issues are clear and in line with the CDM accreditation requirements

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

3.3 Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities, a validation team, consisting of one team leader and 3 additional team members, as well as the Technical Review personnel were appointed.

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

Table 3-2: Involved Personnel

	Name	Company	Function [1)]	Qualification Status [2)]	Scheme competence [3)]	Technical competence [4)]	Host country Competence	Team Leading Competence	On-site Visit
☒ Mr. ☐ Ms.	Manojkumar Borekar	TUV India Pvt. Ltd.	TL	SA, TE	☒	13.1 and 1.2	☒	☒	☒
☒ Mr. ☐ Ms.	Atul Takarkhede	TUV India Pvt. Ltd.	TM[A)]	A, TE	☒	1.2	☒	☐	☒
☒ Mr. ☐ Ms.	Swapnil Thanekar	TUV India Pvt. Ltd.	TM[A)]	LA	☒	1.2	☒	☒	☐
☒ Mr. ☐ Ms.	Anudeep Thorat	TUV India Pvt. Ltd.	OT	T, TE	☒	1.1	☒	☐	☐
☒ Mr. ☐ Ms.	Stefan Winter	TUV Nord Cert GmbH	TR[B)]/ FA	SA, TE	☒	13.1, 1.1 and 1.2	☐	☒	-

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

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

3) GHG auditor status (at least Assessor)

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

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

B) No team member

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

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

Statements of competence for the above mentioned team members are enclosed in annex 6 of this report.

3.4 Consideration of Public Stakeholder Comments

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

In case comments are received, they are taken into account during the validation process. The comments and the discussion of the same are documented in annex 5 of this report.

3.5 Validation Protocol

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

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

The validation protocol is described in Figure 1.

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

Figure 1: Validation protocol table

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

3.6 Review of Documents

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

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

3.7 Follow-up Interviews

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

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

Table 3-3: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
Project proponent representatives Schreiber Dynamix Dairies Ltd. (IM01)	- Chronological description of the project activity with documents of key steps of the implementation. - Current status of plant design - Technical details of the project realization, project

Interviewed Persons / Entities	Interview topics
	feasibility, designing, operational life time, monitoring of the project - Host Country Approval - Approval procedures and status - Monitoring and measurement equipment and system. - Financial aspects - Crediting period - Project activity starting date - CER allocation / ownership - Baseline study assumptions - Additionality - Sustainable development issues - Monitoring plan - Research report of COD - Analysis of local stakeholder consultation - Roles and responsibilities of the project participants w.r.t. project management, monitoring and reporting - National Legislation - Editorial issues of the PDD
Project Consultant representatives Thermax Sustainable Energy Solutions Ltd (IM02)	
Local Stakeholder Representatives (local people, equipment suppliers, educational research institute and employees from plant) (IM03)	

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

3.8 Project comparison

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

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

3.9 Resolution of Clarification and Corrective Action Requests

3.9.1 Definition

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

- mistakes have been made in assumptions, application of the methodology or the project documentation which will have a direct influence the project results,

- the requirements deemed relevant for validation of the project with certain characteristics have not been met or
- there is a risk that the project would not be registered by the UNFCCC or that emission reductions would not be able to be verified and certified.

A **Clarification Request (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.

3.9.2 Draft Validation

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

3.9.3 Final Validation

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

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

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

3.10 Technical review

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

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

3.11 Final approval

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

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

4 VALIDATION FINDINGS

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

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

Validation topic [1)]	No. of CAR	No. of CL	No. of FAR
General description of project activity (A) - Project specification - Technical project description - Participation - Contribution to sustainable development - PDD editorial aspects - Technology to be employed	2	-	-
Project Baseline, Additionality and Monitoring Plan (B) - Application of the Methodology - Project Boundary - Baseline identification - Calculation of GHG emission reductions Project emissions Baseline emissions Leakage - Additionality determination - Monitoring Methodology - Monitoring Plan - Project management planning	12	2	-
Duration of the Project / Crediting Period (C)	1	-	-
Environmental impacts (D)	1	-	-
Stakeholder Comments (E)	2	-	-
SUM	**18**	**2**	**-**

[1)] The letters in brackets refer to the validation protocol

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

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

General	Finding A1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The PP justified the debundling criteria according to paragraph 2, Appendix C of Simplified Modalities and Procedures for SSC project activities; however, justification for debundling criteria as per latest version of "Guidelines on assessment of de-bundling for SSC project activities" is missing.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	PDD has been revised to include the justification criteria as per "Guidelines on assessment of de-bundling for SSC project activities" (EB 47, Annex 32).		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Not OK. PP does not transparently demonstrate all criteria.		
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	PDD has been revised to incorporate the all criteria in line with EB 54, Annex 13, version 3.		
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 7 on dated 2011/11/21 In accordance with EB-54, Annex 13, "Guidelines on assessment of de-bundling for SSC project activities" (Version 3), PP has address below points under section A.4.5 of PDD. 1. With the same project participants : There is no registered SSC PA with same PP 2. In the same project category and technology/measure ; Not applicable 3. Registered within the previous 2 years ; Not applicable 4. Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity under the CDM at the closest point of registered CDM PA: Not applicable In addition, presentation of "determination of occurrence of debundling" has been done by logical flow diagram. Validation team studied all necessary inputs provided by PP and found deemed OK. Further, from UNFCCC website it is confirmed that there is neither registered project activity nor an application to register another small-scale CDM project activity by Schreiber Dynamix Dairies Ltd. Therefore it's confirmed that the SSC PA is not a debundled component of a larger project activity. **CAR has been closed.**		

General	Finding A1
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding A2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Corrections are requested for the editorial mistakes and unclear statements made in various sections A.2, A.4.2 of PDD.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Editorial mistakes and unclear statements have been corrected in the revised PDD.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 7 on dated 2011/11/21 Under section A.2, A.4.2 of PDD, editorial corrections has been made with clarity in statement. However it has been identified that the steam generation capacity, designed pressure and temperature of the steam boiler in A.4.2 are not consistent with technical specification or missing. **CAR open.**		
Corrective Action #2	As per technical specifications, steam output of a boiler F&A 100^0C is 13200 kg/hr and heat output is 7.12 *10^6 kCal/hr i. e. 7120000 kCal/hr. Thus for two boilers, total heat output will be (7120000*2) 14240000 kCal/hr. Assuming 1 kCal//hr = 4.186 kJ/hr; the heat output will be 59608640 kJ/hr i. e. 16557.96 kJ/s. Assuming 1 kJ/s = 1 kW, the heat output will be 16557.96 kW i. e. 16.56 MW thermal. Entire PDD updated accordingly.		
DOE Assessment #2	Reference : Revised PDD, Version 10 on dated 2012/05/11 Related information ius now provided. DOE has checked related technical specification and found the data to be consistent between source and PDD. Further entire PDD has been updated to steam capacity 13.2 TPH F&A100. As this remaining issue is solved this CAR is closed.		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	Finding B1		
Classification	☒ CAR	☐ CL	☐ FAR

General	Finding B1
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Title and reference of the applied methodology AMS III.H and AMS I. C is not consistent throughout the PDD. Correction requested.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Title and reference of the applied methodology AMS III.H and AMS I. C have been corrected in the revised PDD.
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 7 on dated 2011/11/21 OK. Title and reference of the applied methodology AMS III.H and AMS I. C is now consistent in the PDD. The DOE has verified the description given in PDD and compared the same against the latest available version of approved methodology for SSC projects available on UNFCCC website: http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html. **CAR has been closed.**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding B2		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The applicability conditions of the applied methodology AMS III.H version 13 needs to be revised for each paragraph (from paragraph 1 to 12) and their sub points. Moreover, demonstrate that the wastewater contains biogenic organic matter. The project activity is designed to co-fire the biogas simultaneously in 2 x 14 TPH capacity boilers. Both boilers needs to be consider for demonstration of capacity limits for SSC projects under paragraphs 3, 4 and 8 of applied methodology AMS I.C version 16. Detailed calculations should be presented on the rated capacity of both boilers. Furthermore justification provided under paragraph 7 of applicability conditions of AMS I.C version 16 needs to be revise as project activity involved retrofication of 2 x 14 TPH FO fired boilers to dual fuel (FO and biogas) fired boilers.		

General	Finding B2
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The applicability conditions of the applied methodology AMS III.H version 14 have been revised for each paragraph (from paragraph 1 to 12) and their sub points. Mother liquor mainly composes of Carbohydrates, Proteins and fat which are biogenic organic matter. The same has been incorporated in section B.2 of the revised PDD. Both the boilers have actually 13.2 TPH (F&A100). Each has been considered in demonstrating the capacity limit of the project activity. Detailed calculations on the rated capacity of the boilers have been incorporated in the Annex 3 of the revised PDD. The total installed capacities of the boilers have been revised as 16.56 MW_{th} which is less than 45 MW_{th}. Also as per paragraph 7 of applicability conditions of AMS I.C, section B.2 of the revised PDD has been revised as "The project activity involves retrofitting the existing facilities (FO Boilers) for co-firing Biogas and FO for steam generation".
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Not OK. Version 13 of methodology AMS III.H and version 16 AMS I.C has been expired. Corrections requested. OK. Composition of Mother liquor has been now provided. OK. Rated capacities of both boilers are now considered. OK. Justification for applicability condition 7 has been now revised.
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The version of the methodology has been changed since there was a revision in the model correction factor in calculating baseline and project emissions in version 16 of AMS.III.H. The revision of the model correction factor leads to reduction in baseline emissions (UF_{BL} from 0.94 to 0.89) and increase in project emissions (UF_{Py} from 1.06 to 1.12). Hence, as a conservative approach latest methodology version 16 of AMS.III.H has been applied for this project activity. In addition, Version 19 of AMS.I.C has been appropriately addressed.

General	Finding B2
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 10 on dated 2012/05/11 PP has now amended the changes in PDD as stipulated in methodology as per below version. AMS III.H version 16 AMS I.C Version 19 The DOE has verified the description given in PDD and compared the same against the latest available version of approved methodology for SSC projects available on UNFCCC website: http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html. The validation team confirms that under section A.4.2 the reference of the methodology is updated to version 19. The applicability conditions of the AMS I.C version 19 are appropriately provided under the section B.2 of the PDD. The validation team has checked the section B.2 of the PDD and confirms that the stipulations made by the PP against the applicability condition of methodology confirm that the applicability of project against applied methodology is appropriately met. The project boundry stated under section B.3 is inline with applied methodology AMS I.C version 19. Similarly the section B.4 of the PDD covers all the applicable stipulations of methodology including para 17, 22, 30 and 45 of AMS I.C version 19. The validation team checked the section B.6 and B.7 of the PDD and confirm that the emission reduction calculation and applied monitoring plan are inline with the applied methodology AMS I.C version 19. **CAR has been closed.**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding B3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The project boundary includes mother liquor treatment and biogas recovery system, existing wastewater treatment system and both dual fuel fired boilers. However, as per methodology AMS III.H version 13 “the project boundary is the physical, geographical site where the wastewater and sludge treatment takes place in baseline and project situation. It covers all facilities affected by the project activity including sites where the processing, transportation and application or disposal of waste products as well as biogas takes		

General	Finding B3
	place. Correction requested in this regard. Moreover, the project boundary needs to be revised in line with paragraph 14 of AMS III.H version 13. Furthermore as per methodology AMS I.C version 16 the boundary should also extend to the facility where the energy is consumed, in this regard the project boundary needs to be corrected. During the site visit it was also observed that, DG sets are used as a source of electricity for operation of wastewater treatment plant and boilers in case of grid failure. Same (DG sets) are missing in the project boundary. Corrections requested. Baseline and project activity components are not explicitly distinguished in "table for the source and type of GHG emissions associated with the project activity" in section B.3 of PDD. Corrections requested.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Project boundary has been revised as per paragraph 13 and 14 of AMS III.H. Version 14. As per AMS I.C. Version 16, the project boundary has been revised to include the facility where energy is consumed. Grid failure is very rare at Schreiber Dynamix dairies limited; however, during grid failure DG sets may be used for supplying power for MLTP / WWTP operations. Baseline and project activity components in the table for the source and the type of emissions associated with the project activity in section B.3 of the PDD have been revised.
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Not OK. Further, PP should clarify regarding flaring system is being ignored from project boundary. Not OK. PP should calrify regarding the facility where steam is consumed is being ignored from project boundary. OK, PP has included the DG set under project boundary. Project emission attributed to project activity is appropriately considered. Not OK. Justification for inclusion/exclusion of N_2O is not provided.
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Flaring system has been included in the project boundary and the monitoring plan for the same has been incorporated in the revised PDD. Facilities where steam is consumed has been included in the project boundary Justification for exclusion of N_2O has been incorporated in the revised PDD
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 10 on dated 2012/05/11 In-line with AMS III.H version 16, AMS I.C Version 19, the project boundary considering below issues has been appropriately addressed • Flaring system

General	Finding B3
	• Facilities where steam is consumed • Justification for exclusion of N_2O **CAR has been closed.**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding B4		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Emission factor for FO seems to be not corrected as per latest IPCC guidelines in the table of information of key variables used for baseline determination in section B.4 of PDD. Corrections required in all relevant sections in this regard.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Emission factor of FO has been corrected as per latest IPCC guidelines as 77.4 tCO_2/TJ.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 7 on dated 2011/11/21 OK. Emission factor for FO is now corrected as 77.4 tCO_2/TJ as per Volume 2, Chapter 2 Table 2.2 of IPCC Guidelines corrected as of November 2010. Besides clarification is requested why alternatives to the basleine are discussed whereas the baselines are predifend as per methodology. **CAR open**		
Corrective Action #1	Alternatives have been deleted.		
DOE Assessment #1	Reference : Revised PDD, Version 10 on dated 2012/05/11 Ok as related approach is deleted. Baselines for methane and CO2 has been identified correctly as per related methodologies. For further assessment on baseline scenario please refer to Table A-2 ion Annex 2 of this report. Further in section B.2 of the PDD the demonstration of additionality is subsequently revised. Demonstration of additionality is correctly shown as per Attachment A of Appendix B/CMP.1 Annex II by support of sub-step 2a and 2b of Tool for the demonstration and assessment of additionality version 6.0.0. **CAR has been closed.**		

General	Finding B4
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding B5		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	National policies and circumstances relevant to the baseline of the proposed project activity are missing in section B.5 of the PDD (Cp SSC-CDM-PDD filling guidelines). Correction requested.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	There are no national policies and circumstances which are relevant to the baseline are available. The same has been mentioned in the revised PDD under section B.5.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Not OK. National policies related to industrial wastewater treatment and fuel usage for energy purposes by different Government organizations like CPCB, MNRE etc. are not discussed transparently.		
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective*	There are no national policies and circumstances which are relevant to the baseline are available. The project baseline complies with Maharashtra Pollution Control Board norms. There are some promotional schemes available for renewable energy based projects such as "Accelerated programme on recovery of energy / power generation from industrial and commercial wastes and effluents for implementation in 2005-06" http://mnre.gov.in/energy-iwaste.htm But these schemes are not a mandate. The same has been incorporated in the revised PDD.		
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 7 on dated 2011/11/21 OK, assessment team has confirmed from MNRE[/mnre/], CPCB[/cpcb/] and MPCB[/mpcb/] websites that, there are no national policies and mandate regulations related to the project activity. **CAR has been closed.**		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	Finding B6

General	Finding B6		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	1. Section B.5 does not contain any information on the conformity of the project activity to Annex 22 of EB 49. 2. Section B.5 does not explain the benchmark selected its conformity to Guidance 12 and 13 of Annex 5, EB 62 and the appropriateness for the financial indicator selected. 3. Clarification is requested that sensitivity analysis is in line with Guidance 18 of Annex 58, EB 51. 4. Benchmark is breached with a 10% increase in biogas generation and with a 10% reduction in operating cost or investment cost. There is no statement as to why such a reduction is not possible. Instead the write up states, "Increase in 10% biogas generation is most unlikely situation to occur" and does not give any reasons therefore. The explanation does not state anything about investment cost. Since the cost estimation is based on quotations and invariably the suppliers offer substantial discounts, the project does not appear to be additional. 5. Some of the barriers listed under technological barriers do not appear to qualify as barriers. Cost implication of dual fire burner has already been taken into account in the investment analysis. Installation of technologically advanced UASB reactor cannot be a barrier preventing the implementation of the project activity. Lack of in-house technical expertise cannot be construed as barrier as there seems to be no difference between WWTP and biogas boilers located in this plant and other industry. 6. Clarification is requested w.r.t. the stated numbers 1, 2, 3 …. Does tis refer tofinancial years or calendar years? First year generation, saving and cost should be in conformity with expected date of Commissioning. 7. Clarification is requested w.r.t. whether the Capital cost have been accounted for in the projection on calendar year basis or financial year basis. 8. Possible COD reduction in anaerobic digester assumed at 80% is stated to be based on Thermax quotation. But the quotation does not explicitly provide this data Please clarify. 9. Cost of WWTP considered in the capital investment is very high for 1000 m^3 based on the quotation submitted for 2000 m^3 WWTP. 2000 m^3 WWTP is classified as an 'existing plant' and hence, its cost cannot form part of the capital investment.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. As per Annex 22 of EB 49, intimation to UNFCCC on the project commencement has been incorporated in the chronology of events under section B.5 of the PDD. 2. Explanation of selected benchmark and the appropriateness of the financial indicator have been incorporated in the section B.5 of the PDD. 3. 5% Variation has been removed from the sensitivity analysis		

General	Finding B6
	4. As per the revised investment analysis, the project IRR has not crossed the benchmark in any case. 5. Technological barrier arguments have been removed from the section B.5 of the PDD since the barriers have been justified with Investment analysis. 6. Year format have been changed to financial year format. First year generation, saving and cost is in conformity with expected date of COD 7. Year format have been changed to financial year format. 8. Possible COD reduction in anaerobic digester assumed at 80% has been calculated based on the COD inlet and COD outlet mentioned in the Thermax quotation. 9. Capital investment has not been considered for 2000 M^3 WWTP.
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	1. Section B.5. Provides chronology of events. However, since the project start date is post August 2, 2008, the conformity of the project to paragraph (2) of Annex 22, EB 49 should be explained. It is therefore suggested that the chronology of events table be modified as indicated in the PDD. Moreover, it is observed that UNFCCC was not informed within 6 months of the start date as required by Annex 22, EB 49. CAR is open 2. PDD has been modified. However, the explanation given for choosing project IRR is not acceptable. Revised PDD (version 03 dated 06/10/2010) also does not explain about the conformity of benchmark to guidance 13 of Annex 58, EB 51. PP/Consultant should use latest version of Guidance. CAR is open 3. 5% variation has been removed. CAR is closed 4. In the revised worksheet, benchmark is not breached. However, this is facilitated by a drastic reduction in "COD of waste water inlet to digesters' from 4379 given earlier to 2200 now. Though a similar reduction in 'COD of Mother Liquor' has also been done, since the biogas generation is as computed by Thermax in its quotation, it is accepted. However, reduction in (after the CARs have been raised) biogas generation from waste water – existing 2000 m^3 WWTP is not acceptable. CAR is open. 5. Since all the technological barriers have been removed, CAR has lost its relevance. CAR is closed 6. Though financial years have been used in IRR worksheet, years, 1, 2, 3 continues in Depreciation worksheet. In the construction worksheet, year has been split on calendar year basis. Moreover, it is observed that as per the details given in 'Construction' worksheet, the project should commence generation in September 2009. IN the above background, assuming 25% capacity utilisation in 2009-10 does not appear to be appropriate. 7. Still the breakup of capital cost is on calendar year basis.

General	Finding B6
	However, it does not affect additionality calculation as the capital cost have been split on financial year basis. CAR is closed 8. Explanation on COD reduction has been modified in worksheet. COD reduction is based on the Thermax quotation in which both inlet and outlet COD values are provided. Efficiency is calculated on these values. CAR is closed. 9. The cost is supported by quotation. However, this cost is based on offer letter. Manufacturers invariably offer a minimum of 10% discount. Expected discount should be factored in the cash outflow. CAR is open 10. In computing the power requirement of MLT plant, it is projected as if entire operating load of 52.84 KW would be used for all the 24 hours. The quotation states that out of 52.84 KW, ~34 KW would be used intermittently. This has not been accounted for. 11. The investment decision was taken in 2008-09. Check whether the tax rate was 33.66% in that year 12. It appears that the project has been entirely funded by equity. Confirmation is required to this effect.
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective*	1. Chronology section has been revised as per the comments given in the PDD. Since the project, start date is 22nd August 2008 which is after 2nd August 2008, the PP had intimated to the DNA within six months from the start date as per EB 41 Annex 46 which mentions intimation to either DNA or UNFCCC. Since paragraph (2) of Annex 22, EB 49 came only after the six months duration which mentions about the intimation to both UNFCCC and DNA, the PP had intimated accordingly to UNFCCC. 2. For this project, activity the project IRR and equity IRR are same since there is no debt involved in the project financing. Hence as a simplified approach project IRR has been chosen. Benchmark analysis has been considered as a suitable approach since the baseline scenario does not require investment as per paragraph 16 of Guidance on the assessment of investment analysis version 03. Since project IRR has been chosen as a suitable approach, as per paragraph 11 of Guidance on the assessment of investment analysis version 03, local commercial lending rate (Prime lending rate of RBI) has been considered as a suitable Benchmark. 4. During our first submission, DAF efficiency had not been accounted and the same has been accounted during this submission. Please refer process flow diagram of 1000 m^3 and 2000 m^3 WWTP. 6. Year format has been changed to financial year basis in both Depreciation and Construction worksheet. The capacity

General	Finding B6
	utilization has been considered as 25% in the first year since stabilizing the mother liquor digester operations requires minimum three months which includes developing cultures, gradual feeding of mother liquor based on other critical operating parameters. Hence, the full gas quantity will be available only from January 2010 onwards. 9. PP had taken decision during June 2008 (Please refer board resolution dated 30/06/2008) based on the quotation given from the supplier. Cost negotiation happened only after the board decision. Board was not aware of the discounts from the supplier during decision making. Discount on the capital investment cannot be included in the investment analysis since the same was not available during decision making. 10. For the equipments which is running intermittently the operating hours has been considered as per the manufacturers recommendation as follows, Digester Circulation pumps – 22 hours/day Caustic tank mixer – 20 hours/day Sludge disposal pump – 22 hours/day 11. Tax rate applicable during 2008 -09 was 33.99%, the same has been incorporated in the investment analysis. 12. This project activity had been entirely funded by equity. (Please refer Annual report of 2008-09 which shows that there is no loan procurement during the year 2008-09)
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	1. Explanation on the reasons for not informing UNFCCC within 6 months is missing in section B.5 of the PDD. CAR is open 2. The response justifies the use of benchmark analysis and not the financial indicator used. CAR is about the financial indicator and not the investment analysis. CAR is open 3. CAR was already closed 4. The response, “DAF efficiency had not been accounted and the same has been accounted during this submission” is not an acceptable explanation, as there was no compulsion on the part of the PP from DOE’s side not to account DAF efficiency. After the CARs/CLs have been raised, modifying it under the pretext that DAF efficiency was not accounted to ensure the project remains additional is incorrect and renders the validation exercise meaningless. 5. CAR was already closed 6. Worksheet has been modified and financial years have been used. CAR is closed 7. CAR was already closed 8. CAR was already closed

General	Finding B6
	9. DOE is not concerned with whether the discount was known at the time of taking decision or not and whether it should be factored in the cash outflow or not; but its main concern was the cost, which is very high. The cost works out to ~Rs.18,500/NM3 of biogas generated, which no registered project or projects under validation with DOE seem to have reckoned so far. DOE's intention was to see whether the project cost, after taking into consideration the discount, is anywhere near acceptability or not. *It is entirely up to PP/Consultant to decide whether the discount was known or not known at the time of decision making and whether it should be incorporated in the cash flow or not and there is no compulsion from DOE side on this account*. However, DOE would not be able to accept this cost and justify the same in its validation based on its local and sectoral expertise. 10. "Intermittently" does not seem to mean operating 22 and 20 hours out of 24 hours. This definition is not acceptable. Moreover, as stated earlier in the worksheet, the power rating given is not in conformity with the offer letter and the revised worksheet is absolutely not in conformity with the offer. The electricity consumption works out to ~ 540 MWh per annum, which based on the sectoral and local expertise of DOE, is very high. Therefore, neither the power consumption, nor the definition for 'intermittent' is acceptable. CAR is open. 11. Tax rate has been corrected. Tax rate has been crosschecked with government law as per http://law.incometaxindia.gov.in/DIT/Income-tax-acts.aspx and found to be correctly applied. Therefore CAR is closed 12. Since Annual Report has not been forwarded to DOE, comments are reserved. CAR is open
Corrective Action #3	1. Write up on the chronology of events stating the CDM intimation to UNFCCC after six months from the start date has been incorporated in the revised PDD after the table in section B.5. 2. The project activity is the replacement of existing wastewater treatment system (anaerobic lagoon) with Mother Liquor treatment system for methane recovery and utilization, so in order to assess the viability of the project activity, PP had 3 approaches available for investment analysis i.e. IRR, NPV and Unit Cost of Generation. Out of which, IRR has been chosen as it is the most widely used financial indicator by banks and financial institutions. 4. PP accepts mistake on its side for not taking in to account DAF efficiency. PP assures that the annual biogas generation will not exceed 2,607,096 Nm^3 in any year. Also PP has provided 14 year historical data where, maximum ML generation was 38 m^3/day and biogas generation is based on design capacity of 45 m^3/day of MLTP .

General	Finding B6
	9. The project cost is high due to various factors. Waste water i.e. mother liquor treatment at Schreiber Dynamix is first of its kind in India. No other dairy in India treats the mother liquor using an aerobic digestion in UASB. Mother Liquor has very high COD in the range of 370,000 – 390,000 mg/L with very less pH, within 3 to 4. To bring this high COD and low pH to acceptable limits of state pollution control board, PP has to give two stage treatments. This has lead to constructing a special type of digester, designed especially for the PP by Thermax. This mother liquor treatment plant can reduce the COD load up to 80,000 mg/L only. To further reduce this COD load, PP has to construct a new 1000 m^3 waste water treatment plant. Thus, the project cost has gone up. Therefore, the cost of biogas generation for the project is Rs. 17,511 per day. However, the project is first of its kind in nature in India. 10. Intermittent operation of digester re-circulation pump and sludge disposal pump for 22 hours per day means, every 5 hours 30 minutes of operation there will be a stoppage for 30 Mins. And for the intermittent operation of caustic tank mixer for 20 hours means, there will be a stoppage of 1 hour for every 5 hours of operation. Moreover on the power rating, Electrical operating load of Mother Liquor Treatment Plant (MLTP) (Continuous operation) of 30.02 KW has been derived based on the values available on Page no: 6 (i.e., 18.77 KW for continuous operation) and page no:17 (i.e. vacuum pump 15 HP (15*0.75) = 11.25 KW). The electricity consumption of the project activity is though found to be high; all these equipments are must run for the treatment. Hence, such a high connected load is present. 12. All annual reports have been forwarded to DoE. Chartered Accountant's certificate in this regards is submitted to DoE dated 09th July, 2010.
DOE Assessment #3	1. PDD has been revised and explains the reason for not intimating UNFCCC. CAR is closed 2. Revised PDD explains the appropriateness of the financial indicator used to the project type and decision making context has been explained. CAR is closed 3. CAR was already closed 4. Considering the fact that it was a genuine mistake made by the PP and that the records of waste water treatment plant for the years 2006-07 and 2007-08 supports this contention, the revised biogas generation is accepted. CAR is closed 5. CAR was already closed 6. CAR was already closed 7. CAR was already closed

General	Finding B6
	8. CAR was already closed 9. Considering the fact that the PP uses two step treatment method to reduce the COD - first with installation of specially designed UASB reactor for treatment of mother liquor, which reduces COD to 80,000 mg/L and further treatment of this effluent in newly constructed 1000 m^3 treatment plant to reduce the COD to meet state pollution control body standards i. e. less than 150 mg/L in order to ensure that the treated effluent is ozonation fit for reuse, the high cost is accepted. CAR is closed 10. Since the hours of operation of each equipment is supported by the technology supplier, Thermax, the hours of operation is accepted. CAR is closed 11. CAR was already closed 12. The project is entirely funded by equity. **CAR has been closed.**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding B7		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	1. The plant is envisaged to be installed and it is not an existing plant. In the above background, please clarify how the O&M expenses can be based on the Accounts Statement and Annual report, other than for power and FO cost. 2. No of operating days has been taken at 330. Please clarify whether the Dairy operates only for 330 days in a year. 3. Depreciation seems to have been provided at 10%. Clarify the basis for considering this rate. Moreover, the income tax has been computed after providing for depreciation on straight Line basis. Please clarify whether this is in conformity with IT Act. 4. 'Standard constant' is cited as the basis for coefficient of Bio gas production per kg of COD reduction. Please clarify whether there are no basis for this input parameter 5. In 'Savings Calculations' worksheet, biogas from a WWTP of 1000 m^3 has been accounted for and the basis is cited as 'Biogas quantity based calculations as per existing waste water treatment plant'. Please clarify whether the 1000 m^3 WWTP is 'existing' or 'proposed'.		

General	Finding B7
	6. Total biogas generation given vide cell C22 of 'Savings Calculations' does not appear to be correct. 7. Net calorific value given in cell C25 differs from the MITCON report 8. Power consumption for WWTP plant is stated to be 1,508,610 kWh per annum. As per the quotation given by Thermax the power, consumption should be 1,173,522 kWh. Clarify the reasons for the high power consumption as compared to quotation. 9. Do not use micros in the worksheet (macros are reported to have been used in sensitivity analysis worksheet). Use simple links instead 10. Clarify how the project proponent went ahead with the implementation of the project even before receiving a positive validation, when the CDM benefits are considered imperative to render the project financially attractive. 11. Following documents / documentary evidences should be submitted: a) Board resolution in which the CDM benefits were seriously consi**d**ered b) Letter from Indian Dairy Association stating this project is first of its kind in India c) Copies of the Purchase Order placed for WWTP and Biogas Boiler plant d) Life of the plant e) Steam consumption of the company in 2005-06 to 2008-09 f) Annual Report – 2008-09
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Operating cost of Mother Liquor Treatment plant has been considered based on the offer provided by Thermax. Operating cost of new 1000 m^3 WWTP has been considered based on the operating cost of existing 2000 m^3 WWTP since both the plants are of similar nature except for the capacity difference. 2. No of operating days have been revised to 365 days. 3. Depreciation rate has been revised as per IT act 4. The standard constant has been revised as per the IPCC default factor of 0.25 Kg CH_4/ Kg COD, Methane content of 67% and density of biogas as 1.089 Kg/Nm^3. The revised value is 0.4 Nm^3/ Kg of COD. 5. 1000 m^3 WWTP is not an existing plant; it has been considered that the COD removal efficiency and COD inlet of the existing 2000 m^3 and the new 1000 m^3 WWTP is same. Hence, the biogas quantity has been arrived based on COD removal efficiency of the existing plant.

General	Finding B7
	6. Total biogas generation given in the 'Savings Calculations' have been corrected 7. Net calorific value has been revised as per MITCON report dated 19/06/2008. 8. Power consumption for the 1000 m^3 WWTP has been revised based on the Thermax offer dated 07/02/2005. 9. Macros have been removed from the sensitivity analysis. 10. Please refer the Chronology of events mentioned under section B.5 of the revised PDD. 11. The following documents / documentary evidences have been submitted, a) Board resolution in which the CDM benefits were seriously considered b) Letter from Indian Dairy Association stating this project is first of its kind in India c) Copies of the Purchase Order placed for WWTP and Biogas Boiler plant d) Life of the plant e) Steam consumption of the company in 2005-06 to 2008-09 f) Annual Report – 2008-09
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	1. Explanation on operating cost of WWTP is accepted. However, since the full Annual Report[/BAL/] has not been furnished, the correctness of figures cannot be checked. To that extent, CL is open. 2. Number of working days has been revised to 365. CL is closed 3. Depreciation has been revised as per IT Act. CL is closed 4. Computation has been explained in worksheet. CL is closed 5. Explanation on the biogas generation is accepted. CL is closed 6. Mistake has been corrected. However, as it would render the project non-additional, biogas generation from existing WWTP has been brought down, which does not appear to be correct. Since the CAR has already been raised on this issue, this CL is closed 7. NCV of biogas has been corrected. CL is closed 8. Power consumption of 1000 m^3 WWTP has been corrected. CL is closed 9. Macros have been removed from the sensitivity analysis. CL is closed 10. Chronology of events does not provide an answer to this CL. It only gives chronology of events and nothing more. CL is open 11. Comments on the documents submitted are as follows: a) CL has been closed.

General	Finding B7
	b) Letter from the Indian Dairy Association has been submitted. c) Copies of Offer have been submitted. PO has not been submitted d) Life of the plant has been submitted e) Steam consumption and FO consumption of the company for the year 2008 and 2009 have been submitted f) Only a few pages of Annual Report have been submitted. Full Annual Report has not been submitted
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective*	1. Full annual report has been furnished 10. During the decision making, based on the confirmation given by the CDM consultant on the project registration the board had taken the decision to implement the project activity. 11. C. Copy of PO had been submitted
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	1. Since Annual report has not been furnished, the figures could not be checked. 2. CL was already closed 3. CL was already closed 4. CL was already closed 5. CL was already closed 6. CL was already closed 7. CL was already closed 8. CL was already closed 9. CL was already closed 10. It is not known on what basis CDM consultant has given the confirmation and whether the PP can go by his confirmation. DOE is unable to accept this response as it does not feel that CDM Consultant has the necessary authority to give such confirmation. CL is open 11. Comments on the response are as follows: a) CL was already closed b) CL was already closed c) PO has not been forwarded. d) CL was already closed e) CL was already closed f) AR report has not been furnished
Corrective Action #3 *This section shall be filled by the PP. It shall address the corrective*	1. Operating costs for MLTP and 1000 m^3 WWTP are now given separately. A letter dated 30th Aug. 2010 from technology supplier, Thermax Ltd. for Chemical and consumables cost as well as repair and maintenance cost is now submitted to DoE.

General	Finding B7
	10. At the conceptual stage, the Board was informed that the project is not financially attractive but is eligible to claim CDM benefits as it conforms to UNFCCC guidelines. CDM consultant gave an assurance that this project is eligible for accruing CDM benefits based on the assessment. The board took a decision to execute this project as a CDM project, since this available CDM benefit will mitigate the financial risk involved in the project. 11. PO and Annual reports are forwarded to DoE.
DOE Assessment #3 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 7 on dated 2011/11/21 1. Since the operating costs , chemical and consumable costs for MLTP and 1000 m^3 WWTP as given by the technology supplier, Thermax Ltd. has been submitted, CL is closed 2. CL was already closed 3. CL was already closed 4. CL was already closed 5. CL was already closed 6. CL was already closed 7. CL was already closed 8. CL was already closed 9. CL was already closed 10. Since the project conforms to Annex 22, EB 49, the CL is closed PO and Annual reports have been received. CL is closed **CL has been closed.**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding B8		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The technological barriers have a direct impact on the finance model of the project activity. Clarify compliance of the technological barriers w.r.t.as per paragraph 115 of VVM manual. Further PP is requested to clarify the barrier due to prevailing practice, in particular, if there are significant differences between		

General	Finding B8
	wastewater treatment system and biogas recovery and use in dairy industries and other manufacturing (process) industries as the technology for biogas recovery and its thermal/electrical use is domestic, used in other industrial sectors and in other regions in the country. Explanation is sought that why the sector is more appropriate? Moreover, as the technology is widely observed and commonly carried out in defined region and sector, PP is requested to provide the essential distinctions between the project activity and other similar activities as well as other industrial sectors. (Please refer 118 paragraph of VVM).
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Technological barrier arguments have been removed from the additionality section since all the barriers have been addressed using investment analysis. Sector wise approach is more appropriate since the waste water characteristics vary from sector to sector. UASB reactor used in this project activity has been specially designed to suit the characteristics of the mother liquor. There are no dairy industries in India utilizing mother liquor in UASB reactor for biogas generation. Please refer letter from president of Indian Dairy Association dated 08/10/2009 stating methane recovery from mother liquor treatment is first of its kind in India.
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Technological barrier arguments have been removed from the additionality section hence CAR is closed. Clear demonstration on, if there is significant difference in wastewater treatment plant and utility of dairy industry and other sector industries is missing. Refer above paragraph on assessment for sector-wise approach chosen.
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective*	During the manufacture of cheese and casein, a liquid is produced as a by-product called as whey. During the processing of whey to lactose, a waste water stream i.e. mother liquor is generated. Mother liquor is different from waste water from dairy industry or any industry in similar sector based on following points, - High COD: range of 350,000 mg/L to 390,000 mg/L - High organic matter: about 95% - Low pH: ranges between 3 – 5.5 No other wastewater from dairy or any other sector has such high COD, organic matter and low pH. Moreover, till date, any project of similar kind from this sector has not been found web hosted on UNFCCC website. However the related section has been removed.
DOE Assessment #2 *The assessment shall encom-*	Reference : Revised PDD, Version 10 on dated 2012/05/11

General	Finding B8
pass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.	As related section w.r.t. first-of-it-kind has been removed this issue is closed. **CAR has been closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding B9		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Clarification Requests (CLs) on: 1. Relation between production and water balance based on process and historical data. 2. Basis for the values of "COD of mother liquor" and "NCV of biogas." 3. Why one year historical data was used although more than three years historical data is available with PP for various parameters including percent COD removal by digesters. 4. Why mother liquor recovery plant operating days considered only 348 whereas manufacturing plant is running for 365 days. Provide supportive data. 5. Extra production during leap years needs to be considered in investment analysis. 6. Clarification requested on multiple biogas NCV values; 5133 Kcal/Nm^3, 5215 Kcal/Nm^3, 5555 Kcal/Nm^3 and 5385 Kcal/Nm^3. Clarification is requested w.r.t. conservative consideration for biogas NCV value in respect to IRR calculations and emission reductions. 7. More supportive required on NCV of FO to substantiate NCV value. 8. Clarification requested on load factor of wastewater treatment plant. 9. Evidences for cost of Repairs, Maintenance, Chemicals and Consumables for wastewater treatment plant. 10. Basis and evidences for other overhead cost. 11. Basis and logic of calculation of Insurance cost. 12. Basis and evidences for Cost of Chemicals as 20 Rs. Litres. 13. Basis evidences and details for Cost of Manpower.		

General	Finding B9
	14. Evidences for cost of Repairs, Maintenance, Chemicals and Consumables for mother liquor treatment plant. 15. Auxiliary consumption at 2000 m^3, 1000 m^3 and mother liquor plant.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	1. Relation between production and water balance based on process and historical data have been provided in a separate excel worksheet now. 2. Basis of values for COD of mother liquor and NCV of biogas is based on the MITCON laboratory report dated 19/06/2008. 3. Three year historical data has been used for all parameters except percent COD removal by digesters. For COD removal, data from June 06 to March 08 is used. 4. As a conservative approach, operating days have been revised as 365. 5. As a conservative approach, operating days have been revised as 365 days and hence this will take care of the extra production during leap years. 6. NCV value provided by MITCON laboratory report dated 07/02/2008 has been used for all the calculations. 7. NCV of FO is now considered from PCRA data. 8. PP has calculated load factor of wastewater treatment plant based on historical data available with PP from August, 06. 9. Letter from technology supplier i.e. Thermax Ltd. Is provided for the evidence of cost of Repairs, Maintenance, Chemicals and Consumables for wastewater treatment plant. 10. Overhead cost has been removed from the IRR calculation. 11. Additional insurance cost is based on, annual premium of INR 5,561,206 paid in year 2007-08 on capital investment of INR 2,602,886,557 and business interruption cost INR 650,500,000. 12. Letter from technology supplier i.e. Thermax Ltd. Is provided for the evidence of cost of chemicals. 13. Finance manager certificate for manpower cost is provided for the support of manpower cost. 14. Letter from technology supplier i.e. Thermax Ltd. Is provided for the evidence of cost of Repairs, Maintenance, Chemicals and Consumables for mother liquor treatment plant. 15. Auxiliary consumption at 2000 m^3, 1000 m^3 and mother liquor plant have been considered from Thermax offers dated, 7th Feb 05 and 6th March 08 respectively.
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure,*	Reference : Revised PDD, Version 7 on dated 2011/11/21 1. Validation team has studied the relation between production and water balance based on process and historical data and

General	Finding B9
additional corrective action and DOE assessments (#2, #3, etc.) shall be added.	found OK. 2. MITCON lab report (07 Feb 2008) has been submitted and COD value is in conformity 3. For baseline determination 3 years data has been applied except COD removal of MLTP; June 2006 to March 2008 is applied for waste water treatment plant efficiency, since 2000m^3 waste water treatment plant was commissioned in Aug 2006. Nevertheless, COD value for input mother liquor has been confirmed with laboratory test report and same is applied for calculation. 4. 365 days per year has been considered for calculation. 5. Working days has been taken at 365, which is acceptable. 6. As per MITCON laboratory report (19 June 2008), NCV of biogas has been applied for calculations. 7. Petroleum Conservation Research Association PCRA data is applied for NCV of FO. 8. COD removal efficiency has been evaluated from historical data (August 2006 to March 2008). Validation team has done the assessment of calculation and found them to be correct. 9. Cost of repairs, maintenance, chemicals / consumables (for waste water and mother liquor treatment) have been confirmed by letter from technology supplier and found to be correct. 10. Since there was no supportive for overhead cost and therefore same has been removed from the IRR calculation. 11. Basic and logic of insurance cost is appropriately addressed. 12. See the response of point no 9. 13. Finance Manager's certificate on manpower cost has been provided, which is acceptable 14. See the response of point no 9. 15. Auxiliary consumption has been confirmed from equipment supplier's offer dated 7 Feb. 2005 and 6th March 2008 **CL has been closed.**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding B10		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding	Methodological choices provided in section B.6.1 for calculations of		

General	Finding B10
Describe the finding in unambiguous style; address the context (e.g. section)	baseline and project emissions lack the information and justification on the baselines and project emissions which are included/excluded as per methodology AMS III.H. Reference of the tools for the calculations of project emissions due to onsite fossil fuel and electricity consumption are provided. However, equations and methodological choices are not provided for the calculations of project emissions due to onsite fossil fuel and electricity consumption. Furthermore, provide methodological choices for calculations of project emissions due to diesel used in DG sets for electricity generation for operation of wastewater treatment plant and boiler in case of grid failure. Corrections are requested in this regard.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Baseline and project emissions which are included/excluded as per methodology AMS III.H version 14 has been clearly described in the revised PDD. Equations as per the tools for the calculations of project emissions due to onsite fossil fuel and electricity consumption have been mentioned in the methodological choices under section B.6.1 of the revised PDD. Grid failure is very rare at Schreiber Dynamix dairies limited; however, during grid failure DG sets may be used for supplying power for MLTP / WWTP operations.
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	OK. Not OK. Methodological choices for net quantity of heat supplied by the project activity are not provided. Not OK. Provide three years historical data for running hours of DG and quantity of fuel consumed.
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Methodological choices for net quantity of heat supplied has been incorporated in the revised PDD Three years historical data for running hours of DG set and quantity of fuel consumed has been provided. SDDL will operate only critical section of the plant and critical equipments in WWTP and MLTP on DG sets during the grid failure.
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 10 on dated 2012/05/11 In accordance with AMS.III.H ver. 16 and AMS.I.C ver. 19, the methodological choices have been appropriately addressed. Validation team has reviewed 3 years historical data for DG set (running hours and HSD consumption). Now project emission due to DG set running is appropriately considered for emission reduction calculation and found OK. **CAR has been closed.**
Conclusion	☐ To be checked during the first periodic verification

General	Finding B10
Tick the appropriate checkbox	☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding B11		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Biogas collected from the existing 3 UASB digesters is now used in the dual fuel fired boilers. This has been correctly reflected in emission reduction calculations as per AMS I.C. However, in the context of AMS III.H. emission reductions the quantity of biogas originating from baseline biogas recovery systems has to be deducted (para 17 of AMS III.H. version 16).		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	In relation to para 17 of AMS III.H version 16, the biogas generated from existing 2000 m^3/day WWTP in the pre-project scenario was being flared and same is excluded from baseline emission calculations (Refer section B.4 of the PDD). MDy will now be calculated based on the revised value of $BG_{burnt,y}$ methane content of biogas, density of biogas and flaring efficiency of 100%. In the revised PDD, the parameter is now separately mentioned in section B.6.1, B.6.3 and B.7.1 and will be calculated as follows : $BG_{burnt,y}$= Qbiogas,MLTP1 + Qbiogas,MLTP2 Where, $BG_{burnt,y}$ = Biogas combusted in year y Qbiogas,MLTP1 = Quantity of biogas generated by Mother liquor digester 1 in year y (measured by GFM 2, refer annex 4 of PDD) Qbiogas,MLTP2 = Quantity of biogas generated by Mother liquor digester 2 in year y (measured by GFM 3, refer annex 4 of PDD) The waste water inflow of 1000 m^3/day WWTP is through common equalization tank, hence PP has excluded biogas generated from this WWTP along with biogas from existing 2000 m^3/day WWTP for baseline emission calculations, for conservativeness. PP has now updated section B.4, B.6.1, B.6.2, B.6.3, B.7.1 and Annex 4 of the revised PDD along with emission reductions spreadsheet.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Inline with the para 17 of the applied methodology AMS III.H. biogas generated from existing 2000 m^3/day WWTP and new 1000 m^3/day WWTP has been excluded from the baseline emission calculations under AMS III.H. For the reason of conservativeness, also the newly added 1000 m^3/day WWTP has been excluded as there is common equalization tank for these both WWTPs and hence separate allocation of share of biogas generated from each WWTP is not possible. Corresponding sections B.6.1., B.6.2., B.7.1. of the PDD and emission reduction calculation sheet has		

General	Finding B11
	been revised appropriately. CAR has been closed.
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding B12		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Section B.6.2 of PDD shall include a compilation of the data and parameters not monitored but determined upfront to be available for validation. Corrections are requested in this regard. Efficiency of baseline boilers needs to be determined by adopting one of option provided in paragraph 18 of methodology AMS I.C. also provide the supportive for the same.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Section B.6.2 of the PDD has been revised to incorporate the parameters available at the time of validation and not monitored. Efficiency of the baseline boiler has been determined based on the manufacturer's specification.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Not OK. Steam temperature should be monitored. Not OK. PP needs to elaborate and substantiate the option chosen as per applied methodology AMS I.C para 18.		
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Steam temperature has been removed from section B.6.2 of the revised PDD. But the same has been incorporated section B.7.1 of the revised PDD. The efficiency of the baseline boiler has been determined as per the option 26 (b) of AMS I.C. The same has been incorporated in the revised PDD.		
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 10 on dated 2012/05/11 PP has made the provision to monitor the Steam temperature and same is incorporated in section B.7.1. of PDD. In accordance with option 30 (b) of AMS I.C. Version 19, the highest boiler efficiency amongst the available offer with PP has been considered for calculation and found OK. **Hence this CAR has been closed.**		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken		

General	Finding B12
	☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding B13		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Section B.6.3 of PDD needs to be revised for the ex-ante calculations for each baseline and project emission component as per methodological choices and equations provided in applied methodologies AMS III.H and AMS I.C.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Section B.6.3 of PDD has been revised for the ex-ante calculations for each baseline and project emission component as per methodological choices and equations provided in applied methodologies AMS III.H and AMS I.C.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference: Revised PDD, Version 10 on dated 2012/05/11 Section B.6.3 of PDD has been appropriately revised. **CAR has been closed.**		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	Finding B14		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Measurement methods and procedures including accepted industry standards or national or international standards which will be applied, which measurement equipment is used, how the measurement is undertaken, source of data to be used, which calibration procedures are applied, what is the accuracy of the measurement method, who is the responsible person / entity that should undertake the measurements and what is the measurement intervals are not addressed categorically in section B.7.1 of PDD (Cp SSC-CDMPDD filling guidelines). In this context Para 12 of general guidance on "Indicative Simplified Baseline and Monitoring Methodologies for Selected Small-Scale CDM Project Activity Categories" (version 12.1) is also need to be followed. Furthermore, disposal of final sludge generated needs to be monitored as per paragraph 39 of applied methodology AMS III. H. Also during site visit, it is observed that there is no provision for monitoring of the electricity consumption at mother liquor treatment plant and boilers. PP needs to provide dedicated monitoring system		

General	Finding B14
	for the monitoring of auxiliary electricity consumption at mother liquor treatment plant and both dual fuel fired boilers.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Section B.7.1 has been revised as per the requirement in the revised PDD. Disposal of final sludge has been incorporated in the monitoring plan as per paragraph 39 of applied methodology AMS III.H.
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Not OK. PP needs to clearly describe the responsibilities of measurement of monitoring for each parameter. Not OK. Only quantity of sludge has been incorporated in the monitoring plan; however, PP fails to provide monitoring plan for its disposal. Not OK. Reply on the provision for monitoring of the electricity consumption at mother liquor treatment plant and boilers are awaited.
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Roles and responsibilities of monitoring of each parameter have been incorporated in the revised PDD. Final sludge disposal has been incorporated in the monitoring plan of the revised PDD. Energy meters will be installed at the boiler house and at the Mother Liquor treatment plant / new and old WWTP.
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 7 on dated 2011/11/21 OK. Under annex 4 of PDD, the roles and responsibilities of monitoring for each parameter has been appropriately mentioned. OK. Under section B.7.1 of PDD, quantity of sludge disposal has been incorporated in the monitoring plan OK. As described in annex 4 of PDD, energy meters will be installed at the boiler house and at the Mother Liquor treatment plant / new and old WWTP. This measure needs to be checked during verification and certification. However the following issues have been identified: 1. It has been identified that not all parameter monitoring methods are as per AMS-III.H. 2. Further parameter w_{CH4} is missing. 3. Clarify whether w_{CH4} is identical with $fv_{CH4,RG,h}$. Both should be monitored separately or ensure that requirements of related tool and methodology are fulfilled. Finally As per Annex 4 first flow chart prior to flare stack 1 and 2 methane content monitoring point is indicated as GFM-6 and GFM-7 however the same could not be found in subsequent table. 4. It has been identified that measurement method/monitoring frequency is inconsistent between section B.7.1 and Annex 4 of PDD.

General	**Finding B14**
	5. Clarification is requested whether T and P of biogas is measured at the same time when methane content is measured as required by related methodology AMS-III.H. **CAR open.**
	1. All parameters have been updated and measurement methods are now inline with AMS-III.H. 2. Parameter $w_{CH4,y}$ is now incorporated in section B.7.1 of revised PDD. 3. Thus separate monitoring for both the parameters i. e. $w_{CH4,y}$ and $fv_{CH4,RG,h}$ will be carried out. $w_{CH4,y}$ will be measured at boiler inlets where biogas flow measurements will be carried out through GFM 4 and GFM 5. $fv_{CH4,RG,h}$ will be measured prior to each of the two flares, stack 1 and stack 2. The table in Annex 4 is now updated and both the monitoring points i. e. GFM 6 and GFM 7 are now mentioned againest monitoring parameter. 4. Table in Annex has been updated to be consistent with B.7.1. 5. PP has revised the monitoring plan for temperature and pressure of biogas to ensure that it shall be measured at the same time when methane content in biogas is measured, which is in line with the methodology.
	Reference: Revised PDD, Version 10 on dated 2012/05/11 1. Ok. DOE checked PDD and found that all monitoring methods are now inline with related methodologies. 2. Ok. PDD has been checked and w_{CH4} is now provided. 3. Ok. The parameters w_{CH4} and $fv_{RG,h}$ are now addressed as separate parameters in line with the requirement of methodology and tool resp. The table is now updated appropriately. The GFM 6 and GFM 7 are now apparent in the table under Annex-4 of PDD. PDD revised and both parameters will be monitored at the same time when methane content in biogas ($w_{CH4,y}$) is measured. 4. Ok. PDD has been checked information in B.7.1 is now consistent with table in Annex 4. 5. Ok. PDD is checked and B.7.1 states for pressure and temparture of biogas that both is measured at the same time when methane content is measured. **CAR has been closed.**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken

General	**Finding B14**
	☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

Duration of the Project / Crediting Period	**CAR C1**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	The PDD describes the start date of crediting period as "01/07/2010 or a date not earlier than the date of registration of the small scale project activity.", however this needs to be revised for ".....whichever is later".		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The crediting period start date has been revised as 01/07/2012 and the sentence has been revised as per the comment.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 10 on dated 2012/05/11 OK. Sentence is now corrected and the crediting period start date has been revised as 01/07/2012. **CAR has been closed.**		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

Duration of the Project / Crediting Period	**CAR D1**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Demonstration on how the project activity is compiling with the statutory requirements below is missing in the PDD: • Section 25 of the Water (Prevention and Control of pollution) act 1974 • Section 21 of the Air (Prevention and Control) act 1981 • Rule 5 of the Hazardous wastes (Management, Handling and transboundary movement) • Boiler act, 1923		

Duration of the Project / Crediting Period	CAR D1
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Please refer, • Maharashtra Pollution Control Board consent to operate dated 11/12/2006 • Please refer Boiler inspectorate certificates for Boiler SM140 B/2 dated 26/06/2007 and Boiler SM140 B/1 dated 01/08/2007
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Not OK. Description on the same is missing in the PDD.
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	With reference to the MPCB consent and Boiler inspectorate certificate, the project activity compliance to statutory requirements has been described in the PDD.
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 7 on dated 2011/11/21 MPCB and Boiler Inspectorate issued their consents under the compliance of: • Section 25 of the Water (Prevention and Control of pollution) act 1974 • Section 21 of the Air (Prevention and Control) act 1981 • Rule 5 of the Hazardous wastes (Management, Handling and transboundary movement) • Boiler act, 1923 Same is now also described under section D.2 of PDD. **CAR has been closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	Finding E1		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Section E.1 of PDD lacks the clear and transparent description on how local stakeholders have been identified, mode of invitation, facilities and time provided for comment submission and how due account of the comments received during local stakeholder consultation process has been taken. Refer “Cp SSC-CDM-PDD filling guidelines”.		

Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Clear and transparent description on how local stakeholders identified, mode of invitation, facilities and time provided for comment submission and how due account of the comments received during local stakeholder consultation process has been mentioned under section E.1 of the revised PDD.
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Not OK. Mode of invitation, facilities and time provided for comment submission is now clear in the PDD. However, PP has not transparently described how the local stakeholders were identified.
Corrective Action #2 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Identification of local stakeholders has been transparently described in the section E.1 of revised PDD.
DOE Assessment #2 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 7 on dated 2011/11/21 Under section E.1 of PDD, PP has now transparently described how local stakeholder's have been identified. PP has identified directly affected local people, SDDDL employees, contractors and equipment supplies as well as indirectly associated Biotechnology scientist etc. as local stakeholders. This is in line with "Cp SSC-CDM-PDD filling guidelines". **CAR has been closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	**Finding E2**		
Classification	☒ CAR	☐ CL	☐ FAR

Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	During global stakeholders process fallowing comment was received from Climate Change Forum, climate.change1997@gmail.com, which needs to be addressed. "As per the PDD, this project comprises of 2 parts. A) Methane avoidance B) Fuel Switch. Such methane recovery projects in Maharashtra are non-additional and are part of the baseline scenario. DOE is requested to check the CREP guidelines and the impact of such guidelines in waste water treatment and biogas utilization. (http://www.cpcb.nic.in/oldwebsite/Projects%20&%20Action%20Plans/CREP_Recommendations.html) As the PP has already implemented ISO 9001:2000, hence DOE is also requested to cross check quality control management system regarding waste water treatment. I strongly believe that the Consent to Operate (at time of CDM conceptualization and prior to investment decision) also prove the mandatory requirement for installation of digesters to treat the waste water and biogas use.
	Kindly review whether the case is an E+ or E- policy. You may also consider going through the recent EB clarification on a similar waste water treatment project can also be reviewed prior to decision making - please refer F-CDM-SSCwg ver. 01 SSC_325 as in SSC WG 22. I don't want to disclose my identity. I am requesting to the DOE to send me the answers in my email id (climate.change1997@gmail.com)"

Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	• Please refer letter from president of Indian Dairy Association dated 08/10/2009 stating methane recovery from mother liquor treatment is first of its kind in India. • CREP is a guideline and not a mandate for industries. Moreover, CREP has prepared an action plan only for Tannery, Rubber and Electroplating industries. • Project proponent is bound only by Maharashtra Pollution Control Board norms. • Project proponent has upgraded to ISO 22000:2005 from ISO 9001:2000 on 02/05/2007. • As per the Maharashtra Pollution, control Board consent to operate No: BO/WPAE/EIC-PN-1391-06/Pune-990, dated 11/12/2006 project proponent complies with the norms at the time of CDM conceptualization and prior to investment decision making. • Also please refer Maharashtra Pollution control Board consent to operate No: BO/PCI-III/EIC-PN-4471-09/-52, dated 06/03/2010, there is no mention of mandatory requirement of treatment system for mother liquor. • E+ / E- policy is not applicable for this project activity since there are no national policies applicable for mother liquor treatment.

DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Reference : Revised PDD, Version 7 on dated 2011/11/21 • PP has provided letter from Indian Dairy Association dated 08/10/2009 stating that methane recovery from mother liquor treatment is first of its kind in India in Dairy sector. From the letter it is evident that it's the only dairy in India which is treating mother liquor using anaerobic digesters and capturing methane. • DOE checked the CREP guidelines under action plan, which are only for Tannery, Rubber and Electroplating industries with the purpose to go beyond the compliance of regulatory norms for prevention and control of pollution through various measures including waste minimization, in-plant process control and adoption of clean technologies. Moreover, PP is bound to obtain the clearances from Maharashtra Pollution Control Board only. • Project proponent has upgraded to ISO 22000:2005 from ISO 9001:2000 on 02/05/2007 and certificate of the same has been submitted to DOE. QMS system applied to project activity has been reviewed by assessment team and found OK. • PP submitted the Maharashtra Pollution control Board consent to operate (Ref No: BO/WPAE/EIC-PN-1391-06/Pune-990, dated 11/12/2006) which shows that project proponent is in compliance with the norms at the time of CDM conceptualization and prior to investment decision making and there is no clause mandating installations of bio digester and methane use. Also DOE has referred Maharashtra Pollution control Board consent to operate No: BO/PCI-III/EIC-PN-4471-09/-52, dated 06/03/2010, there is no mentioned mandatory requirement of treatment system for mother liquor. • E+ / E- policy is not applicable for this project activity since there are no national policies for mandatory treatment of mother liquor treatment. **Hence this CAR has been closed.**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

5 VALIDATION ASSESSMENT SUMMARY

5.1 General Description of the Project Activity

5.1.1 Participation

LOA

Letter of Approval (HCA) No. 4/10/2009-CCC, dated 2009-07-17 issued by Indian DNA National CDM Authority under Ministry of Environment and Forests confirmed the voluntary participation of Schreiber Dynamix Dairies Ltd. as Project Participant in the CDM project activity. Nevertheless, in the Host Country Approval it is stated that project proponent has to comply with the following conditions:

- Schreiber Dynamix Dairies Ltd. shall not sell the CERs to any agency/ company/ organization which purchase the CERs using ODA Funds.
- Schreiber Dynamix Dairies Ltd. shall inform the national CDM Authority regarding all transaction details of CERs including the name and address of the party to which CERs were sold within 30 days of transfer of the CERs
- Schreiber Dynamix Dairies Ltd. shall furnish expeditiously any information, during the lifetime of the project as requested by the National CDM Authority.
- Schreiber Dynamix Dairies Ltd. shall obtain all statutory clearances and other approvals as required from the competent authorities for setting up of the project
- All transaction shall be subject to supervision of the Executive Board of the CDM, under the authority and guidance of the COP/MOP
- This approval is not transferable. The authority reserves the right to revoke the Host Country Approval if the conditions stipulated in this approval are not complied with to the satisfaction of the National CDM Authority.

Furthermore, the DOE has verified the project title as mentioned in the HCA with the web hosted PDD and found the same are matching with each other.

An Annex-I party will be identified by the project participant in due time, as per the post registration involvement by Annex I party provisions (no. 57) made in 18th EB meeting.

Project Participants

The DOE checked and confirms that Schreiber Dynamix Dairies Ltd. is the PP for the project activity/HCA/, /PO/, /SC/ and has been consistently reported in the PDD.

5.1.2 Contribution to Sustainable Development

Letter of Approval (HCA) No. 4/10/2009-CCC, dated 2009-07-17 issued by Indian DNA National CDM Authority under Ministry of Environment and Forests confirms that the CDM project activity contributes to sustainable development in India.

5.1.3 PDD editorial Aspects

The PDD is applying the latest PDD template (Version 03[2]) and the latest version of the guideline (Version 05[3]). However, please refer to CAR A2, where PP has corrected the PDD and made clarity in the statement under section A.2 and A.4.2.

5.1.4 Technology to be employed

During the site visit on date 2009/06/12, as described in Section 2.4 above, DOE checked and confirmed that the project activity is using Thermax Ltd. made anaerobic digester for treatment of industrial waste water (mother Liquor) generated from the process in dairy industry and has installed dual fuel fired burners for co-firing generated biogas through anaerobic treatment with furnace oil in the existing boilers for steam generation. The technology employed by the project activity for treatment of Mother Liquor is used for the first time for waste water from dairy sector/ADD/ in India. As Thermax Ltd. has indigenously developed the anaerobic digester and even though dual fired burners are imported, technology transfer to host country is not involved.

The technology used is environmentally safe and sound/OL/, /TD/, /PO/. Also, according to Host Government (India), Environmental Impact Assessment (EIA) is not required for waste water treatment and biogas recovery project as, harnessing biogas through waste water and its subsequent use for energy generation is considered environmentally safe and sound.

5.1.5 Small Scale Projects

TÜV Nord confirms that the project is within the threshold limit of SSC type. This has been verified by checking documents/PO/, /SC/, /PDD/ and after successful closure of CAR B2.

The DOE checked all the applicability conditions as stipulated under the methodology and concludes that the PP correctly applied methodologies with latest versions i.e. AMS I.C. Version 19 and AMS III.H. Version 16 after successful closure of CAR B1, B3, B 10, B12 and B13.

TÜV Nord has checked and confirms that the PP has appropriately applied following tools for the calculation of emission reduction from the project;

i. “Tool to calculate the emission factor for an electricity system” version 02.2.1, EB 63 Annex 19.
ii. “Tool to determine project emissions from flaring gases containing methane” version 01 EB28 Annex 13
iii. “Tool to calculate baseline, project and/or leakage emissions from electricity consumption” version 01 EB39 Annex 07

[2] http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/PDD_form02_v03.doc
[3] http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid02_v05.pdf

iv. "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion" version 02 EB 41 Annex 11

PP has substantiated that the project is not a de-bundled component of large scale project through application of "Guidelines on assessment of debundling for SSC project activities" version 03 EB 54, Annex-13 after satisfactory closure of CAR A1.

Furthermore, the PP has applied the UNFCCC simplified modalities seek to establish additionality of the project activity as per Attachment A to Appendix B, (Version 07: 28 November 2005) for additionality determination in conjunction with Sub-step 2a and Sub-step 2b of Additionality Tool (Version 6.0.0, EB65 Annex 21).

Thus, TÜV Nord confirms that the PP has applied appropriate methodologies (AMS I.C Version 19 and AMS III.H. version 16) and all methodological tools available and valid at the time of submission of the project activity to UNFCCC after satisfactory closure of CAR A1, B1, B2, B3, B10 and B13.

5.2 Project Baseline, Additionality and Monitoring Plan

5.2.1 Application of the Methodology

The project activity accordingly applies the approved small scale methodology AMS III. H. version 16 and AMS.I.C. Version 19. The methodologies also make reference of: 1. Tool to determine project emissions from flaring gases containing methane Version: 01 (EB28 Annex13), 2. Tool to calculate baseline, project and/or leakage emissions from electricity consumption Version: 01 (EB39 Annex07), 3. Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion Version : 02 (EB41 Annex11), 4. Guidelines on assessment of debundling for SSC Project Activities, Version: 03 (EB54 Annex 13).

AMS III.H. Version 16:

The project activity comprises measures that recover biogas from biogenic organic matter in wastewater (Mother Liquor composing of Carbohydrates, proteins and fat). The biogas recovery is done by installation of Up flow Anaerobic Sludge Blanket (UASB) digesters and combusted in dual fuel fired boilers. The project activity involves substitution of existing lagoons for the treatment of mother liquor by a multistage anaerobic/aerobic wastewater treatment system. As part of this system the existing anaerobic/aerobic treatment plant formerly only treating the other wastewater streams is used. Biogas is extracted in all anaerobic stages (new and existing digesters) of the wastewater treatment system.

Thus the project activity is deemed to be in accordance with para 1 (f) of AMS III.H i.e. "*Introduction of a sequential stage of wastewater treatment with biogas recovery*

and combustion, with or without sludge treatment, to an anaerobic wastewater treatment system without biogas recovery (e.g. introduction of treatment in an anaerobic reactor with biogas recovery as a sequential treatment step for the wastewater that is presently being treated in an anaerobic lagoon without methane recovery)Introduction of a subsequent stage of wastewater treatment with biogas recovery and combustion, with or without sludge treatment, to an anaerobic wastewater treatment system without biogas recovery (e.g. introduction of treatment in an anaerobic reactor with biogas recovery as a sequential treatment step for the wastewater that is presently being tereated in an anaerobic lagoon without methane recovery)."

Validation team has checked the average monthly ambient temperature and found above 15°C[/wheatherreport/]. As per operational practice, the minimum interval between two consecutive sludge removal events is 30 days. The biogas generated from project activity is directly utilized (without upgrading, distribution, transportation and further gas extraction) for thermal energy application i.e. steam generation at site. There is no injection of biogas into a natural gas distribution grid. Biogas generation and its utilization are done by PP on single site. Application of biogas is covered under paragraph 3 (a) of AMS III.H. and hence the project activity can use a corresponding methodology under Type I and the methodology AMS I.C. is used. The project activity is not a green field project and it does not involve any change of equipment resulting in a capacity addition of the wastewater treatment system compared to the designed capacity of the baseline treatment system. The latitude/longitude mentioned in PDD describing the unique location of wastewater treatment plant. Furthermore, the source generating the wastewater is described in section A.2 of PDD. The project activity will result in emission reduction of 9.530 ktCO_2 annually which is less than 60 kt CO_2 equivalent annually.

AMS.I.C. Version 19:

The project activity does not involve any co-generation or biomass based cogen facility. The total installed rated capacity of the two boilers is 26.4 TPH (13.2 TPH X 2 nos) that is equivalent to 16.56 MW_{th} and is within the limits of 45 MW_{th}. The detailed calculation given under annex 3 of PDD has been checked by assessment team. The project activity comprises retrofitting the existing facilities (FO Boilers) for co-firing Biogas and FO for steam generation. The energy generated by fuel combustion in the boiler converts water into steam which is consumed for captive purpose.

All the applicability conditions required by the methodology are met and clearly demonstrated in the PDD.

Please refer successfully closed CAR A1, B2, B 10 for further details.

5.2.2 Project Boundary

CAR B3 was raised as project boundary was not correctly and transparently defined by the PP in accordance with methodologies. After closure of CAR B3, PP revised PDD in line with AMS I.C. Version 19 and AMS III. H. version 16. The project

boundary comprises the physical, geographical site where wastewater treatment, biogas generation and utilization take place in baseline and project situation. The project boundary now includes Mother Liquor treatment plant (MLTP), existing and new waste water treatment plant (WWTP), gas flaring system, new dual firing burners for biogas utilization in boilers for thermal energy generation, disposal of sludge generated from MLTP and WWTPs, source of electricity in case of failure of regional electricity grid i. e. captive power source – diesel based generators. TÜV Nord has assessed and found that PP has correctly addressed the project boundary under section B.3 of the PDD (refer closure of CAR B3). For detailed assessment, please refer to validation protocol under Annex-A1 of the report.

5.2.3 Baseline Identification

The project activity is mother liquor treatment in anaerobic digesters which otherwise would have been treated in anaerobic deep lagoons without any biogas recovery. Biogas thus generated will be used as a fuel in boilers which will replace equivalent amount of Furnace oil. Since, the project involves methane recovery from waste water which further will be used in boilers for thermal energy generation; PP has selected two approved small scale baseline methodologies. These are, “Methane Recovery in Wastewater Treatment” (AMS-III.H: Version 16) and “Thermal energy production with or without electricity” (AMS-I.C: Version 19).

The selected baseline methodologies are correctly applied by PP to this type of project involving thermal energy generation through methane recovery from waste water. The baseline of the project activity is identified as per paragraph 1 (f) *“Introduction of a subsequent stage of wastewater treatment with biogas recovery and combustion, with or without sludge treatment, to an anaerobic wastewater treatment system without biogas recovery (e.g. introduction of treatment in an anaerobic reactor with biogas recovery as a sequential treatment step for the wastewater that is presently being tereated in an anaerobic lagoon without methane recovery).”* According to the approved simplified baseline methodology AMS-III.H version 16, the baseline scenario for methane is the continuation of the existing anaerobic wastewater treatment system, without methane recovery and combustion.
As per paragraph 16 of AMS I.C. version 19, “*For renewable energy technologies that displace technologies using fossil fuels, the simplified baseline is the fuel consumption of the technologies that would have been used in the absence of the project activity times an emission factor for the fossil fuel displaced*”. Accoriding to the approved simplified baseline methodology AMS-I.C version 19, the baseline scenario for CO_2 is the substitution of fossil fuel that would have been used in the absence of the project activity, times an emission factor by renewable energy source biogas.

For the project activity, baseline emission reductions have been estimated using Para 17, 18, 20 and 26 of AMS III.H. (Version 16) and Para 22 and 35 of AMS I.C. (Version 19). Further, since biogas generated from three existing anerobic digesters (installed on 2000 m^3/day WWTP) were captured and flared in the pre-project

scenario, same (2000 m^3/day WWTP and new 1000 m^3/day WWTP[4]) is excluded from baseline emission calculations as per para 17 of AMS III.H.

During the course of validation, TÜV Nord has raised Corrective action requests under CAR B4, B8, B11, B12 and B13. For detailed assessment, please refer to validation protocol under Annex-A1 of the report.

5.2.4 Calculation of GHG Emission Reductions

The calculations are done in line with the applied methodologies (Please refer CAR B10 and B13 for more details on the applied methodologies). The data is correctly monitored in the PDD after closure of the raised CAR (please refer CAR B5). Emission reductions achieved from wastewater is calculated as per the provisions in applied methodology AMS III.H. (Version 16) using Para 17 and 18 for baseline and Para 29 for project emissions. The wastewater treatment systems which are affected and unaffected are identified and systems which were equipped with biogas recovery in preproject scenario (baseline) was excluded from baseline emission calculations. Emission reductions achieved due to substitution of FO by biogas are calculated as per the provisions of applied methodology AMS I.C. (Version 19). Baseline emissions due to use of biogas for steam generation are calculated using Para 42. Project emissions due to FO are calculated using Para 45 which further refers to "Tool to calculate project or leakage CO_2 emissions from fossil fuel consumption".

PP has provided 14 years historical data of mother liquor generation and 20 months for WWTP (from commissioning of WWTP i.e. June 2006-March 2008) for calculations of baseline emissions which is appropriate and in line with the methodology requirement. Further, 3 years historical data for FO consumption and steam generation used for calculation of emission reductions achieved due to thermal energy generation which is in line with the methodology requirement. The Grid Emission Factor is calculated ex-antae in a transparent and conservative manner using "Tool to calculate the emission factor for an electricity system, Version: 02.2.1 (EB63 Annex 19)." According to the CO_2 Baseline Database[5] (Version – 5.0, November 2009) published by CEA. The resultant figure of 0.84 tCO_2/MWh is deemed adequate, transparent as well as conservative. DOE has reproduced the grid emission factor and is therefore confirmed.

PP had not considered emission factor for furnace oil correctly which is now corrected after closure of CAR B4. The monitored parameters can be cross checked with each other hence they act as plausible parameters with respect to each other. Since all the values are monitored, estimated emission reductions are deemed to be plausible and conservative.

[4] For the reason of conservativeness, also the newly added 1000 m^3/day WWTP has been excluded as there is common equalization tank for these both WWTPs and hence separate allocation of share of biogas generated from each WWTP is not possible.

[5] http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm

During the course of validation, TÜV Nord has raised a corrective action request under CAR B13 and B14. For detailed assessment, please refer to validation protocol under Annex-A1 of the report

5.2.5 Additionality Determination

Consideration of CDM in decision making (if project start before validation)

The Board of Directors of Schreiber Dynamix Dairy Ltd. decided to invest in the biogas generation and fuel switch project in their meeting held on 30th June 2008 and decided to develop the project as CDM project as "*…. CDM revenue will support us in mitigating the risks associated with biogas,…… add revenues under CDM so as to mitigate the risks and high cost associated with this project and also to pay back period reduction for the combined project of methane avoidance and fossil fuel displacement*". Validation Team checked the resolution and observed that the investment decision was taken by a body competent to take the decision and that the CDM benefits were the decisive factor in the investment decision.

The project developer has stated the start date of the project activity is August 22, 2008 and has submitted copies of the purchase orders, for the supply of Biogas plant – Mother liquor treatment and boiler fuel conversion system (No. LPJ0135 Dated 22/08/2008) and for waste water expansion plant 2000 to 3000 m^3/day (No. LPJ0136 Dated 22/08/2008), released to M/s Thermax Ltd., as evidences. Project developer has submitted copies of all purchase orders released and a scrutiny of the orders reveals that the project developer has not undertaken any construction or any real action on the implementation of the project activity prior to this date. Since the *real action of the project activity* had begun on August 22, 2008, as per Glossary of CDM terms (Version 05), this date has been treated as the start date of the project activity. Since the real action of the project activity had begun after 02 August 2008, the project activity falls under the category of *new project activity* as per paragraph 100 of VVM.

The PDD was web-hosted for public comments on February 9, 2010, i.e., after the start date of the project activity. Since the start date of the project activity was after 2nd August 2008 and the PDD was web-hosted after the start date, as per paragraph 2 of Annex 13, EB 62, project participant is required to inform the Host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status and such notification must be made within six months of the project activity start date. Project developer had informed DNA on 12th January 2009 about the commencement of the project activity and their intention to seek CDM status, which is in conformity with Annex 46 of EB 41 (less than 6 months) which was applicable at that time[6]. Copies of correspondence with DNA

[6] The start date of project activity is 22/08/2008. At that time, the guidelines issued vide Annex 46; EB 41 was in vogue, which required the PP to inform "a Host Party DNA and/or the UNFCCC secretariat in writing of the commencement of the project activity...". Annex 61, EB 48, which required the PP intimate DNA and the UNFCCC, was adopted by the EB only on 17/07/2009, i.e., after the PP intimated the DNA. It may be noted that the intimation sent to UNFCCC specifically mentions that the DNA was informed on 12th January 2009. CAR B.6 (1) was raised in this regard, consequent to which PDD was modified bringing out this fact explicitly.

have been submitted to validation team. Consequent upon the adoption of Annex 61 by EB in the 48th Meeting (on 17/07/2009), project developer informed UNFCCC in writing of the commencement of the project activity and of their intention to seek CDM status on 17/08/2009[7]. Validation team checked the UNFCCC website[8] (as required vide paragraphs 99 to 103 and 104 of VVM) and satisfied itself that the project developer had informed UNFCCC within the stipulated 6 months period.

Since the project fulfils the condition stipulated, vide paragraphs (2) of Annex 13 of EB 62, (and paragraphs 99 to 103 and 104 of VVM), Validation Team concludes that *there was a prior consideration of CDM and CDM was seriously considered in the decision to implement the project activity.*

Application of methodology / methodological tools

The project is small scale in size. Therefore, in accordance with § 28 of the simplified modalities and procedures for small-scale CDM project activities, the additionality of the project activity has been demonstrated using *Attachment A to Appendix B* and Sub-step 2a and Sub-step 2b of EB 65 Annex 21 as well as Guidance given vide Annex 5, EB 62. As all requirements specified vide §28 of the simplified modalities and procedures are complied with by the project activity, this approach has been assessed to be appropriate for the additionality assessment for this project activity.

Project developer had chosen investment barrier and to demonstrate the investment barrier had selected benchmark analysis and IRR as financial indicator. Having regard to the fact that the project is fully funded by equity, involves investment with cash inflows accruing over the operating life of the project and that the IRR is a financial indicator used by banks and investors alike to ascertain the investment worthiness of such projects, Validation Team considers equity IRR as an appropriate financial indicator for the project type and decision making context. Since in this instant case, the choice of the developer is restricted “to invest or not to invest”, the benchmark approach is most suited as per Guidance 16 of Annex 5, EB 62.

In the above background Validation Team concludes that the additionality justification given by the project developer is in accordance with the requirements derived from the approved CDM methodology and the methodological tools referred therein and also conforms to guidance given by EB vide paragraph 109 and 110 of VVM (01.2).

Investment analysis

PDD demonstrates that the project would not be economically or financially feasible, without the revenue from the sale of Certified Emission Reductions (CERs). In order

[7] Though the project developer sent intimation on 17/08/2009, UNFCCC intimated the project developer that they were unable to open the Prior Consideration Form attached to the main and requested resubmission vide their email dated 23/09/2009. Project developer sent to rectified version on This was done on 25/09/2009 and the acknowledgement from UNFCCC was received on 30/10/2009

[8] http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html (Waste water treatment and biogas recovery project, 25 September 2009)

to assess the claim of the project developer that the project scenario is not economically feasible without benefits from CER sales, Validation Team adopted a six-pronged strategy, viz.,

a) determining the suitability of the investment analysis, benchmark applied and the suitability thereof to the type of financial indicator presented;
b) conducting an assessment of parameters and assumptions used in calculating the financial indicator and determining the accuracy and suitability of parameters;
c) cross-checking the parameters against third-party or publicly available sources;
d) reviewing annual financial reports related to the project participant;
e) assessing the correctness of computations carried out and documented; and
f) 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.

a) Suitability of investment analysis, financial indicator and benchmark: Project developer had demonstrated that the financial returns of the proposed CDM project activity would be insufficient to justify the required investment [Paragraph 109(c) of VVM (01.2)]. For demonstrating the financial unattractiveness of the project activity, project developer had chosen investment barrier and to demonstrate the investment barrier had selected benchmark analysis. Since in this instant case, the choice of the project developer is restricted to "invest or not to invest", the benchmark approach is most suited as per the latest version of Guidance 16 of Annex 5, EB 62.

In the above background, Validation Team concludes that the additionality justification given by the project developer is in accordance with the requirements derived from the approved CDM methodology and the methodological tools referred therein as well as the guidance given by EB vide paragraphs 108-110 of VVM (01.2).

The project developer has chosen IRR to demonstrate the additionality of the project. Having regard to the facts that the project is funded fully by equity, involves investment with benefits flowing over the operating life of the project, IRR is a financial indicator used by banks and investors alike to ascertain the investment worthiness of such projects and that the guidance 12 of Annex 5, EB 62 permit the use of project/equity IRR as one of the financial indicators to demonstrate additionality, Validation Team considers equity IRR as an appropriate financial indicator for the project type and decision making context.

As per guidance 12 of Annex 5, EB 62, where the equity IRR is used as the financial indicator to demonstrate additionality, **"***Required/expected returns on equity are appropriate benchmarks for equity IRR. Benchmarks supplied by relevant national authorities are also appropriate if the DOE can validate that they are applicable to the project activity and the type of IRR calculation presented*"[9]. Since the guidance only

[9] Annex 45 of EB 41, Guidance on the Assessment of Investment analysis, p.3, item 11

states required/expected returns on equity as appropriate benchmarks for an equity IRR and does not prohibit the use of commercial lending rate being used as the required/expected rate of return on equity, validation team considered the applied benchmark as appropriate.

The project developer has chosen the Prime Lending Rate (PLR), which is the commercial lending rate, as the benchmark. At the time of decision making the PLR (evidenced by publications by the Reserve Bank of India) ranged between 12.25% and 12.75%[10]. PLR represents the commercial lending rate of banks. Therefore, the PLR as benchmark conforms to guidance 12 of Annex 5, EB 62. Moreover, since the PLR is publicly available and can be validated by DOE, it also conforms to guidance 13 of Annex 5, EB 62. PP has chosen 12.25% as benchmark. This is also conservative as project developer has submitted Standard Operating Procedures/SOP/ (SOP) for Approval limits Appropriation Requests approved by Board of Directors which requires 25% ROI return on investment[11]. The company selects project yielding only higher returns is also evidenced by the fact that the return earned by the company on equity during 2007-08 was 66%[12]

Therefore, the Validation Team concludes that the benchmark selected by the project developer is suitable for the financial indicator selected. Since the financial indicator breaches the benchmark with CDM benefits, Validation Team considers that it reasonable to assume that the investment would not have taken place and the CDM benefits were decisive factor in taking the investment decision. Therefore, the selected benchmark is appropriate and conforms to paragraph 112 (a) and (c[13]) of VVM (01.2).

b) Parameters and assumptions used: The important parameters which determine the financial indicator of the project are project cost, financing pattern, and profitability estimates.

Project cost: The project concept involves recovery of 2607096Nm^3 of methane from the treatment of 45 m^3/day of mother liquor and 3000 m^3/day of waste water and using the biogas for thermal energy generation to partially meet the requirements of the company.

[10] http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/85254.pdf. The PLR is sourced from the Weekly Statistical Supplement dated June 27, 2008, issued by the Reserve Bank of India, which was available to the PP at the time of decision making (i.e., June 30, 2008). This rate pertains to June 13, 2008. The PLR for the week ended July 4, 2008 (within which June 30th falls) can be sourced from July 18, 2008 issue (which was not available to the PP at the time of decision making), which reveals a rate of 12.75%-13.25%. see http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/85744.pdf. This PLR is higher than the benchmark chosen by the project developer. The conservativeness of the benchmark is thus evident.

[11] SOP for Approval Lomits for Appropriation Request (AR), Contracts and Leases, Schreiber Foods, Inc. Approved by Sr. Vice President- Finance and President and CEO.

[12] Annual Report of the company for the year 2007-08. Since the project is methane recovery from waste water and generation of thermal energy from biogas, the project can use internal benchmark. Therefore, the benchmark considered is conservative.

[13] Paragraph 112 (b) does not apply to the project as no risk premium has been applied in determining the benchmark

Accordingly, the project cost includes only two items, viz., Mother Liquor Treatment Plant including gas transformer and boiler burner conversion and Waste Water Treatment Plant. The cost includes, engineering consultancy, related civil works, electrical feeder cables, installation, erection, commissioning and trial run cost. The cost calculation takes into account the tax and tax credits the plants are entitled to as per the extant laws. The cost is based on the quotation of Thermax dated 06/03/2008 and hence was available to the project developer at the time of decision making (on 30/06/2008). The total cost of the plant works out to Rs.129.12 mn.

Since no projects from the dairy industry has gone in for this technology, Validation Team checked the reasonableness of the project cost with 2 other projects already registered with same sectoral scope (though not from the same industry). It was observed that the project cost was taken at Rs.67.19 mn by GMR Energy (Reg. No. 0505)[14] with spent wash generation of 400 m3/day and Rs.37.13 mn by Sri Chamundeshwari Sugars Ltd. (Reg. No. 1088)[15] with spent wash generation of 450 m^3/day. Validation team sought explanation for the high cost and the project developer informed that the Project activity uses two step treatment methods to reduce the COD. In the first stage, the COD of ML is reduced from 390,000 mg/L to 80,000 mg/L by installing specially designed UASB reactor. Further treatment of this effluent in newly constructed 1000 m^3 treatment plant reduces COD to meet state pollution control body standards i. e. less than 150 mg/L. Treated effluent from secondary treatment system is further treated in ozonation unit so that it can be reused. This two step approach and PP's commitment for environment protection has resulted in higher project cost. Validation team observed that while the other two projects generate spent wash with COD range of 130,000 to 150,000 mg/l whereas, COD of the project activity is 390,000 mg/l. Validation Team also requisitioned the purchase orders released subsequently and a statement on investment made duly certified by the Chartered Accountant. It was observed that the project developer has made an investment of Rs.126.6 mn. as against 129.1 mn. Envisaged – a difference of ~2%. As the sensitivity analysis given in the later part of the report would reveal that the project remains additional even with a reduction in the project cost by 10% (IRR works out to 8.60% as against the benchmark of 12.25 %). The cost is related to the COD reduction as, the very high COD in the case of the mother liquor requires diluton, which results in higher capacity treatment facility and eventually higher cost due to civil work. MLTP is designed for reduction of COD approx 390,000 mg/L to 80,000 mg/L in first stage and to 10 mg/L in second stage. Thermax Ltd. has done research and development of treatment of mother liquor with very high COD. The cost is based on the quotation submitted by Thermax and verified through CA certificate. The actual investment does not render the project non additional, Validation Team considers the cost as reasonable and acceptable.

Financing Pattern: The project activity is fully funded by equity. Project developer has submitted a certificate from the Chartered Accountant to this effect. Validation team has accepted the financing pattern based on the Chartered Accountant's certificate.

[14] http://cdm.unfccc.int/Projects/DB/SGS-UKL1152270393.27/view
[15] http://cdm.unfccc.int/Projects/DB/DNV-CUK1176804855.99/view

Profitability Estimates: Project developer has assumed 365 working days in a year, which is appropriate having regard to the fact that the project is in dairy industry and milk is the main raw material. The main revenue for the project activity is savings in the cost of furnace oil, which is sought to be replaced by biogas; costs include manpower cost, power cost, cost of chemicals and consumables, repairs and maintenance and insurance.

Savings in the cost of furnace oil is related to the biogas generated by the project activity. The savings is a function of the NCV of furnace oil and biogas. While NCV of furnace oil has been sourced from "Energy Conservation in Utilities"[16], NCV of biogas is based on the laboratory test report dated 19/06/2008. Validation checked the biogas NCV reports by MITCON dated 27/01/2010, 23/04/2010, 23/08/2010, 27/12/2010, 26/03/2011 and 01/06/2011 and found that NCV values not crossed 5036 kcal/m^3. Hence, validation team accepted NCV report dated 19/06/2008 available with the PP at time of decision making. Cost of furnace oil has been sourced from the Annual Report of the company for the year ending March 2008, as the decision was taken in June 2008. Validation team verified the NCV of furnace oil laboratory test report and the Annual Report of the company and found the values assumed correct and appropriate.

Biogas generation is based on mother liquor and waste water generated, COD of mother liquor and waste water inlet, COD reduction efficiency of mother liquor digesters and waste water anaerobic digesters and coefficient of Biogas generation per kg of COD reduction. Mother liquor and wastewater generation are based on the factory records and Thermax technical proposal dated 06/03/2008; COD of mother liquor and wastewater inlet are based on laboratory test report dated 07/02/2008 and historic data from June 2006 to March 2008 respectively; COD reduction efficiency of mother liquor digesters is based on Thermax technical proposal dated 06/03/2008 and that of wastewater anaerobic digesters on the plant operations data since June 2006 to march 2008. Coefficient of biogas generation per kg of COD reduction is based on methane content of biogas (based on laboratory test report dated 19/06/2008), density of biogas (Thermax technical proposal dated 06/03/2008) and IPCC Default value of Methane (CH_4) Generation per Kg of COD reduced.

Project developer has submitted the technical proposal, plant performance records, laboratory test reports, IPCC values to validation team, which have been verified and the values are found to be correct. Since all these factors are project specific and are based on either factory records and technical offer or laboratory test reports, Validation Team accepted the same as correct and appropriate.

As stated earlier, the costs include manpower cost, power cost, cost of chemicals and consumables, repairs and maintenance and insurance. Manpower cost is based arrived at based on the application of the prevailing wage/salary structure to the manpower requirement for the project activity. While the manpower requirement is based on the technical proposal of Thermax, wage/salary level has been certified by the CFO of the company. Power cost is based on the connected load and operating

[16] Please see http://www.pcra.org/English/latest/book/02-Chapter%20-%202.pdf (p.45)

hours given by Thermax (in its technical proposal dated 06/03/2008) and the prevailing electricity cost (sourced from the Annual Report for the year 2007-08). Cost of chemicals and consumables and repairs and maintenance cost are based on Thermax letter[17]. Insurance premium is based on the policy taken earlier by the company for other project (in 2007) and the rate works out to 0.17% of the cost, which is in line with the insurance premium rates.

Operating cost works out to about 11% of total investment cost. Since there are no other projects from this sector and with such a high COD content, comparison is difficult. Nevertheless, Validation team considered the other waste water projects like GMR Energy (No.0505) and Chamundeshwari Sugars (No.1088) and could not identify any discernible relationship between operating cost and project cost. The O&M cost of these other projects ranges between 7.15% and 12.85% of investment cost. In this instant case, O&M cost works out to ~11% of the investment cost. Out of this power cost alone works out to ~7% and the balance 4% represents manpower cost, chemicals and consumables cost and repairs and maintenance cost, which based on the sectoral and local expertise of the validation team is found to be reasonable and acceptable. Relatively higher power cost is attributed to the need to operate the plant for 24 hours to ensure the bacteria are maintained constantly and consistently as biogas generation from mother liquor is through anaerobic treatment. Moreover, Booster pump has to be operated without break to maintain the required pressure in the line (of 800 meter length) while transporting the biogas from biogas plant to boiler. Finally, it is not possible to use gravitational flow in all the places requiring the operation of mother liquor and waste water pumps continuously. These issues were verified during the site inspection and the claims are found to be correct. Having regard to the topography of the plant location and unique characteristics of the COD of waste water necessitating two step treatment to reduce the COD (first, with installation of specially designed UASB reactor for treatment of mother liquor to reduce COD from 390,000 mg/L. to 80,000 mg/L and further treatment of this effluent in newly constructed 1000 m^3 treatment plant to reduce COD to meet state pollution control body standards, i. e., less than 150 mg/L), validation team concludes that the cost is reasonable. Validation team obtained all the documents, checked it and found the values considered correct.

Tax liability has been calculated as per the Income Tax Act and Rules and the rulings given. In computing the income tax liability, the project developer has taken into account the accelerated depreciation (80% on mother liquor plant and 100% on waste water treatment plant), which the project is entitled to under Income Tax Rules (Appendix I). The tax rate assumed corresponds to the tax rate prevailing at the time of taking decision (conformity to guidance 6 of Annex 58, EB 51)

[17] Project developer had reckoned these expenses in the financial indicator calculation based on the indiations given by Thermax, which is the machinery supplier and also the CDM Consultant in this instant case. Thermax has given a separate letter on 30/08/2010 giving the details of chemicals and cost and repairs and maintenrance cost, as a supporting document. Hence, though the documentary evidence is post dated to decision making date, this information was available to the project developer from Thermax at the time of decision making.

Since the input parameters have been sourced either from the quotations, plant records acts and regulations, they were valid at the time of decision making and are reliable, credible and appropriate for the project activity. Thus, the Validation conforms to the guidance given vide paragraph 111,112 and 114 of VVM (01.2).

c) Cross checking parameters: The cost of the plant, furnace oil cost, manpower, power and chemical costs, depreciation and tax rate have been cross checked with quotations, Annual Report and Income Tax Act. The documents supporting the financial calculations are therefore authentic, credible and appropriate. Project cost and operating cost have been cross checked with other projects and found to be reasonable. CARs and CLs were raised on non-conformities and they were set right. With the corrections having been incorporated, the input costs considered appear to be in order. Validation, therefore, conforms to guidance given vide conforms to guidance given vide paragraphs 111 of VVM (01.2)

d) Financial reports of project participant: Validation team requisitioned the Annual Reports of the project developer. Annual Report forms the basis for furnace oil cost and power cost. The manpower cost provided for the project cost has also been checked with the Annual Report. Validation team observed that the developer is a profit-making firm and accordingly, the project developer has taken into consideration the tax shield enjoyed on account of accelerated depreciation as *notional cash inflow* at the present tax rate while computing IRR.

e) Assessment of correctness of computation: The assessment involved checking the data input taken from quotation/documents, adoption of correct accounting principle and arithmetical accuracy. Validation Team checked the quotation/ documents and ensured that right input has been taken in the project cost and projections. The accounting principles adopted with respect to block of assets for depreciation calculation and tax computation were found to be in order. The arithmetical accuracy was also found to be correct.

The project IRR has been computed for a period of 20 full years, which is in conformity with the Annex 5, EB 62. As required by Annex 5, EB 62 the expected realisation on the sale of assets at the end of the operating life has been taken as *salvage value* in the terminal year. In computing the IRR, the project developer has taken into account profit after tax, tax shield and salvage value (in the terminal year)[18]. The principle adopted conforms to the accepted accounting and financial management principles.

Based on the above, the equity IRR works out to 8.60 %[19] in contrast to the benchmark of 12.25%. In the above background, the Validation Team is convinced that the project is additional and not a business-as-usual scenario.

[18] Since book depreciation has not been provided in the calculation, the question of including book depreciation does not arise. Since project is entirely funded by equity, the question of interest on term loan does not arise.

[19] In the web hosted PDD the IRR was given as 11.1%. During the validation, a mistake committed by the project developer in considering the COD of waste water inlet was observed. Project developer had not factored in DAF effiicency in the calculation of COD of waste water inlet and also data from June –july 2006 was not considered. When this was factored in the COD of waste water inlet had come down from 4379 mg/L to 1818

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 (± 10%). The project developer has identified project cost, operating cost and biogas generation as critical assumptions. There are no other variables which account for 20% of the project cost or revenue. Since change of any variable will only impact the generation of biogas generation, validation team concludes that subjecting biogas generation to variation takes care of all other factors aiding biogas generation calculation. The results of sensitivity analysis are given in the following table:

Sensitive factors	-10%	Baseline	+10%
Project cost	9.94%	8.60%	7.45%
Operating cost	9.84%	8.60%	7.29%
Biogas generation	5.98%	8.60%	10.98%
NCV of Biogas	5.98%	8.60%	10.98%
FO Price	5.98%	8.60%	10.98%

It could be seen from the results given above, the project remains additional irrespective of whether the project cost comes down by 10% or operating cost comes down by 10%. In response to the CAR raised on the change in COD of waste water inlet, project developer had categorically stated that the biogas generation would not go beyond 2,607,096 Nm^3. 14 year historical data where reviewed and DOE found that the maximum ML generation was 38 m^3/day and biogas generation is based on design capacity of 45 m^3/day of MLTP. As the financial calculation is based on design capacity 10% increase over and above the generation arrived in the financial indicator calculation is not possible.

Validation Team carried out its own and independent assessment, which reveals that the project would be additional by considering above sensitivity analysis.

PP has submitted that such a reduction in project cost or operating cost and increase in biogas generation is highly unrealistic and unlikely to happen for the following reasons:

Project cost: Project developer has already released the purchase orders and the actual cost works out to 126.6 mn. A certificate from the Chartered Accountant has also been submitted to that effect. Since purchase orders have already been placed, the payment has already been made and the actual cost is only about 2% less than the envisaged cost the question of reduction in the cost is hypothetical.

mg/L, threreby bringing down the quantum of biogas generation and consequent reductoin in the net savings. Though during the validation mistakes were also identified in the project cost and O&M cost resulting in the reduction of project cost from Rs.135.68 mn. to Rs.129.12 mn. and O&M cost from Rs.25.80 mn. to 15.10 mn., due to factoring in DAF efficiency in the waste water inlet (which was a genuine mistake on the part of the PP) a reduction in the net savings could not be avoided. This has resulted in the IRR coming down from 11.1% to 8.60 %.

Operating cost: These costs represent manpower cost, power cost, cost of chemicals and consumables and repairs and maintenance. With the country experiencing inflation at ~4.5%[20] on an average, these costs would only go up and can never come down in the years to come. In the above background, a reduction in the operating cost is impossible.

Biogas generation: Biogas generation taken into account is based on the design capacity of the MLTP and WWTP and laboratory test report of waste water and mother liquor. Therefore, there is no scope for any increase in the biogas generation. In response to the CAR B6 raised on the change in COD of waste water inlet, project developer had categorically stated that the biogas generation would not go beyond 2,607,096[21] Nm^3. 14 year historical data where reviewed and DOE found that the maximum ML generation was 38 m^3/day and biogas generation is based on design capacity of 45 m^3/day of MLTP. As the financial calculation is based on design capacity even a 5% increase over and above the generation arrived in the financial indicator calculation is not possible. In the above background, project developer has observed that Biogas generation increase is highly hypothetical and unrealistic.

Validation Team is in agreement with PP's submission

Having regard to the assessment of conformity of additionality demonstration and benchmark selection to the latest version of the guidance issued by EB on the assessment of investment analysis, appropriateness of parameters used and correctness of financial calculations, Validation Team concludes that the project scenario is not economically feasible without benefits from CER sales.

Barrier analysis

Project developer does not consider barrier analysis. Hence, this is not applicable.

Common practice analysis

Project developer does not consider barrier analysis. Hence, this is not applicable.

Summary:

In the above background, Validation Team concludes that the project is not a business-as-usual scenario and is additional. The CDM benefits would enable the project to become financially attractive in as much as the project IRR with CDM benefits (11.91%) alleviates the financial barrier and hence CDM benefits would enable the project developer to overcome the barrier.

Nevertheless, CAR B6, CAR B.7 and CAR B.8 were raised and successfully closed (ref Annex: Validation Protocol).

[20] Wholesale price index during 2005-06 was 195.6 and 2009-10 was 242.9 yielding a CAGR of 4.4%

[21] Considering the facts that the machinery supplier has designed the plant based on the evaluation of characteristics and flow of mother liquor, the question of biogas generation going up even by 1% over the estimated level is ruled out. Since the quantum of mother liquor is determined by the installed capacity of the plant and the biogas generation is construed by design (maximum) parameters of the plant, increase of biogas generation is very unlikely.

5.2.6 Monitoring Methodology

The monitoring methodology is in compliance with the applied methodology AMS III. H, version 16, AMS I. C Version 19 after closure of CAR B12. For detailed assessment please refer to validation protocol under Annex-A1 of the report.

5.2.7 Monitoring Plan

The monitoring plan is in line with the methodology and covers all the parameters which are necessary for monitoring the waste water generation, net biogas generation and subsequent utilization in boilers. The monitoring plan considers all the parameters which are monitored by the SDDL.

During the course of validation, TÜV Nord has raised a corrective action request under CAR B14. For detailed assessment, please refer to validation protocol under Annex-A1 of the report.

5.2.8 Project Management Planning

During the site visit Validation team took interviews of technical staff (General Manager (Projects), project In charge, shift engineer), reviewed the technical qualification and experience of operating staff, reviewed the existing monitoring logs maintained by the shift personnel and deems the same as sufficient for monitoring all the parameters as mentioned in the PDD. Furthermore, TÜV Nord also assessed the management structure as provided in the PDD along with the various checks involved at various stages and deems the project management planning appropriate for the purpose of the projects monitoring.

5.2.9 Crediting Period

The PP has chosen a fixed crediting period for the project activity. The draft PDD mentions the crediting period start date as 01/07/2012 or the registration date whichever is later. For detailed assessment, please refer to validation protocol under Annex-A1 of the report. Please refer to CAR C1.

5.2.10 Environmental Impacts

EIA is not applicable for the project activity and in line with the host country requirements/EIA/ as per EIA Notification[22] (SO 1533; September 2006) by MOEF, India. The PDD contains the project documentation and analysis of environmental impacts. For detailed assessment, please refer to validation protocol under Annex-A1 of the report.

[22] http://envfor.nic.in/legis/eia/so1533.pdf

5.2.11 Comments by Local Stakeholders

Under section E of the PDD, the PP has identified all relevant local stakeholders. Furthermore, the identified stakeholders were invited to comment on the project. This was evidenced from the minutes of meeting of stakeholders. The PDD also sufficiently provides summary of stakeholder comments. The PDD also mentions the responses of PP the comments of stakeholder.

During the course of validation, assessment team has raised a CAR E1 related to identification of stakeholders, mode of invitation and due account of comments received. For detailed assessment, please refer to validation protocol under Annex-A1 of the report.

Please refer to CAR E1.

6 VALIDATION OPINION

Schreiber Dynamix Dairies Ltd. has commissioned TÜV NORD JI/CDM Certification Program (CP) to validate the project: "Waste water treatment and biogas recovery project" with regard to the relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria include article 12 of the Kyoto Protocol[/KP/], the modalities and procedures for CDM (Marrakech Accords)[/MA/] and the relevant decisions by COP/MOP and CDM Executive Board.

In the course of the pre-validation 18 Corrective Action Requests (CARs) and 02 Clarification Requests (CLs) were raised.

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

In detail of the conclusions can be summarised as follows:

- The project is in line with all relevant host country criteria (India) and all relevant UNFCCC requirements for CDM. Project activity approval have been obtained from DNA of India vide the Letter (No. 4 /10/2009-CCC) of Approval (HCA) dated 2009-07-17 from DNA of India[/HCA/].
- The project additionality is sufficiently justified in the PDD[/PDD/].
- The monitoring plan[/MP/] 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 143,240 tCO_2e are most likely to be achieved within the fixed crediting period.

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

Pune, 2012-08-31

Manojkumar Borekar
TÜV NORD JI/CDM CP
Validation Team Leader

Essen, 2012-08-31

Stefan Winter
TÜV NORD JI/CDM CP
Final Approval

7 REFERENCES

Table 7-1: Documents provided by the project participant

Reference	Document
/ADD/	1. Assumptions for IRR calculations 2. Biogas test report by MITCON Laboratory dated 07/02/2008 (Ref: EME/LAB/SDDL/2007-08/422A) 3. Chartered Accountant's certificate for actual expenses incurred by Schreiber Dynamix Dairies Ltd. for civil work, erection and commissioning of 1000 m^3 waste water treatment plant and 45 m^3 Mother Liquor Treatment Plant dated 15/11/2010. (confidential document) 4. Certificate for Mother Liquor neutralization requirement by Thermax Ltd. dated 07/03/2008 5. Certificate for manpower strength and expenses by Schreiber Dynamix Dairies Ltd. dated 20/06/2008 6. Calculations for COD inlet value for waste water treatment plant (confidential document) 7. Comparative thermal efficiency datasheet for Energy pack boilers 8. Condition assessment of Boiler SM 140B (registry no. MR-13450) by Thermax Ltd. dated 22/05/2009 (Ref: RN 2009/BD/08) 9. Cost of power and furnace oil from page 06 of Annual report for the year 2007-08 of Schreiber Dynamix Dairies Ltd. 10. Diffused Air Floatation (DAF) unit's effect on organic load removal certificate by Vidya Pratishthan's school of Biotechnology dated 20/02/2010 (confidential document) 11. Diffused Air Floatation (DAF) unit's effect on organic load removal report by Vidya Pratishthan's school of Biotechnology dated 20/02/2010 (confidential document) 12. Depreciation considered on plant and machineries as per page 20 of Annual report for the year 2007-08 of Schreiber Dynamix Dairies Ltd. for 13. Income Tax Rules 14. Details of connected load as per letter given by Thermax Ltd. dated 02/07/2010 15. Equity certificate by Chartered Accountant dated 09/07/2010 16. First of Its Kind (FOIK) letter from Indian dairy Association dated 08/10/2009 (Ref: IDA:Pre:028) 17. Instruction Manual for Shellmax Boiler, Make: Thermax, Technical Specifications, Page No. 5 18. Insurance cover note by Tata AIG General Insurance Company

Reference	Document
	dated 24/07/2007 (Ref: Endorsement no. 0668111135/01 and policy no. 0668111135) for the period of 01/04/2007 to 31/03/2008 19. Life expectancy certificate by Thermax Ltd. for Mother Liquor Treatment Plant dated 06/04/2010 20. Mother liquor and waste water generation data from April 1995 to March 2011 (confidential document) 21. Mother liquor analysis report from MITCON Laboratory dated 07/02/2008 (Ref: EME/LAB/SDDL/2007-08/429A) 22. Plant installed production capacities as per annual report 2007-08 of Schreiber Dynamix Dairies Ltd. 23. Reserve Bank of India (RBI) bulletin, June, 2008 for Bank Prime Lending Rate (PLR) 24. Remaining life assessment of Boiler SM 140B (registry no. MR-13343) by Thermax Ltd. dated 27/08/2009 (Ref: RN 2009/BD/07) 25. Repair and maintenance cost and chemicals, consumables and for 1000 m^3 waste water treatment plant and 45 m^3 Mother Liquor Treatment Plant Letter by Thermax Ltd. dated 30/08/2010 26. Salvage Value certificate by Thermax Ltd. dated 02/07/2010 27. Technology transfer – new burner 28. Water balance data for the Mother Liquor and waste water generation from the project. (confidential document) 29. WWTP monthly plant records (Aug 06 – Mar-08) 30. http://www.pcra.org/English/latest/book/02-Chapter%20-%202.pdf 31. http://www.ncdex.com/Knowledge/PDFs/Oil%20Furnace.pdf
/BAL/	Annual Reports of Schreiber Dynamix Dairies Ltd. For the year 2005-06, 2006-07, 2007-08, 2008-09 and 2009-10.
/CC/	1. Commissioning certificate for dual fuel burners on SM-140B/1 and 2 boilers dated 01/11/2010 (Ref: Project/Biogas-Boiler/09-10/001 2. Commissioning certificate for 2000 m^3 Waste Water Treatment Plant dated 16/08/2006 (Ref: Job code no. SU09/12131(JNPO82)/PO1)
/CON/	Contract with DoE
/CT/	1. Certificate of proficiency by Government of Maharashtra under Maharashtra Boiler Rules – 1962 to Mr. Ramvilas Mantri dated

Reference	Document
	01/12/1997 (Ref: Certificate No. 188 of 1997) 2. Certificate of competency by Government of Maharashtra under Maharashtra Boiler Rules – 1962 to Mr. Anant Patil dated 20/10/1995 (Ref: Certificate No. 5207 of 1995) 3. Certificate of competency by Government of Maharashtra under Maharashtra Boiler Rules – 1962 to Mr. Hanumant Pisal dated 13/10/1992 (Ref: Certificate No. 4615 0f 1992) 4. Certificate of competency by Government of Maharashtra under Maharashtra Boiler Rules – 1962 to Mr. Harishchandra Jadhav dated 20/02/1997 (Ref: Certificate No. 5455 of 1997) 5. Certificate of competency by Government of Maharashtra under Maharashtra Boiler Rules – 1962 to Mr. Jagannath Chikane dated 20/10/1994 (Ref: Certificate No. 4987 0f 1994) 6. Certificate of competency by Government of Maharashtra under Maharashtra Boiler Rules – 1962 to Mr. Ramchandra Nikalje dated 19/10/2000 (Ref: Certificate No. 6272 of 2000) 7. Certificate of competency by Government of Maharashtra under Maharashtra Boiler Rules – 1962 to Mr. Sanjay Jha dated 25/06/1999 (Ref: Certificate No. 5978 of 1999) 8. Certificate of competency by Government of Maharashtra under Maharashtra Boiler Rules – 1962 to Mr. Shahaji Shitole dated 12/10/1992 (Ref: Certificate No. 4586 of 1992) 9. Training schedule and certificates by Thermax for operation and maintenance of MLTP dated 2009-01-11
/HCA/	1. Host Country Approval from National CDM Authority for the CDM validation project “Waste water treatment and biogas recovery project” vide the Letter of Approval (HCA) No.4/10/2009-CCC dated 17 July 2009. 2. Invitation letter by National CDM Authority, India dated 19/06/2009
/IDA/	Letter from Indian Dairy Association regarding first of its kind dated 2009-10-08 ref no. IDA:Pre:028
/ISO/	1. HACCP certificate dated 02/05/2007 2. Health, safety and environment policy dated 18/09/2008 3. ISO 140001-2004 dated 14/04/2009 4. ISO 18001-2007 dated 07/04/2009 5. ISO 22000 dated 02/05/2007 6. ISO 22000 dated 02/05/2010
/LOG/	1. Daily logbook for Boilers – SM 140/B 1 and 2

Reference	Document
	2. Daily logbook for Mother Liquor Treatment Plant
/LSC/	• Local Stakeholder Consultation Invitation letter from Schreiber Dynamix Dairies Ltd. to various stakeholders related to the project activity dated 04/12/2008 • Attendance Sheet dated 12/12/2008 • Photographs of the stakeholder consultation meeting • Filled up questionnaire from stakeholders who attended the meeting • Minutes of Meeting from the local stakeholder consultation meeting arranged at the project site on 12/12/2008
/MAP/	PID of Mother Liquor Treatment Plant and Waste Water Treatment Plant
/MD/	Board resolution for CDM: Extract from minutes of proceedings of the meeting of Board of Directors of Schreiber Dynamix Dairies Ltd. held on 30/06/2008 at the Trust office of the firm in Mumbai, Maharashtra, India.
/MOC/	Modalities of Communication dated 11/01/2011
/ORG/	Organization chart with roles and responsibilities for CDM activities
/NOF/	1. Intimation to UNFCCC secretariat with the help of Prior Consideration of CDM Form (F-CDM-Prior consideration in line with Annex 62 of EB 48) dated 17/08/2009 and again on 25/09/2009 2. Intimation to DNA with the help of Prior Consideration of CDM Form (F-CDM-Prior consideration in line with Annex 46 of EB 41) dated 12/01/2009
/OL/	1. Techno-commercial offer letter from Thermax Ltd. for Wastewater treatment plant (WWTP) – Up gradation and Augmentation with 2000 m^3/day WWTP with immediate effect dated 07/02/20008 (Ref: Wws:DDIL:ETP:2000:TCOff-03). 2. Techno-commercial offer letter from Thermax Ltd. for biogas generation 45 m^3/day and conversion of existing boiler for combo firing FO/Biogas and 1000 m^3/day new Wastewater treatment plant (WWTP) dated 06/03/2008 (Ref: Wws:Tmn:DDIL:BiogasBoiler:TCOff-05)
/ORG/	Organizational chart and responsibilities

Reference	Document
/PDD/	1. Draft PDD (webhosted) version 01 dated 20/03/2009 2. Final PDD version 12 dated 30/08/2012
/PO/	1. Purchase order to Thermax Ltd. for Waste Water plant expansion form 2000 m^3/day to 3000 m^3/day dated 22/08/2008 (Ref: Purchase order no.:LPJ0136) 2. Purchase order to Thermax Ltd. for Biogas plant 45 m^3/day mother Liquor Treatment Plant and boiler fuel conversion system dated 22/08/2008 (Ref: Purchase order no.:LPJ0135) 3. Work order for Erection and commissioning of Waste Water Treatment Plant Expansion project to Thermax Ltd. dated 25/08/2008 (Ref: Work order no. LEN0316) 4. Work order for civil work for biogas generation and utilization to Thermax Ltd. dated 25/08/2008 (Ref: Work order no. LEN0317) 5. Work order for Erection and commissioning of biogas generation and utilization plant to Thermax Ltd. dated 25/08/2008 (Ref: Work order no. LEN0318) 6. Work order for civil work for Waste Water Treatment Plant Expansion to Thermax Ltd. dated 25/08/2008 (Ref: Work order no. LEN0319)
/SC/	1. Certificate of Incorporation consequent upon Change of Name by Ministry of Company Affairs, Government of India dated 03/11/2006 (Ref: Corporate Identity Number:U99999MH1992PLC066700) 2. Comment of Member secretary of Maharashtra Pollution Control Board dated 02/11/2006 3. Consent to establish from Maharashtra Pollution Control Board dated 24/06/2009 (Ref: Consent No.MPCB/PCI-III/EIC-PN-2889-09/44) 4. IBR certificate for Boiler no. MR – 13450 dated 17/06/2006 (Ref. No.13) 5. IBR certificate for Boiler no. MR – 13343 dated 15/07/2006 (Ref. No. 19) 6. IBR certificate for Boiler no. MR – 13450 dated 22/06/2007 (Ref. No. 26) 7. IBR certificate for Boiler no. MR – 13343 dated 30/07/2007 (Ref. No. 38) 8. IBR certificate for Boiler no. MR – 13450 dated 07/07/2008 9. IBR certificate for Boiler no. MR – 13343 dated 05/08/2008 (Ref. No. 48) 10. Consent to establish by State Pollution Control Board dated 24/06/2009 (Ref: Consent no. MPCB/PCI-III/EIC-PN-2889-

Reference	Document
	09/47) 11. Consent to operate by State Pollution Control Board dated 06/03/2010 (Ref: Consent no. Bo/PCI-III/EIC-PN-4471-09/52) 12. Consent to operate by State Pollution Control Board dated 11/12/2006 (Ref: Consent no. Bo/WPAE/EIC-PN-1391-06/Pune-990)
/SD/	1. Purchase order to Thermax Ltd. for Mother liquor treatment and biogas equipment supply dated 22/08/2008 (Ref: Purchase order no.:LPJ0135) 2. Purchase order to Thermax Ltd. for Waste Water plant expansion form 2000 m3/day to 3000 m3/day dated 22/08/2008 (Ref: Purchase order no.:LPJ0136)
/SOP/	SOP for Approval Limits for Appropriation Request (AR), Contracts and Leases, Schreiber Foods, Inc. Approved by Sr. Vice President-Finance and President and CEO.
/TD/	Technical specifications of equipments for Mother liquor treatment plant and waste water treatment plant
/TRA/	1. Training certificate for internal training by Schreiber Dynamix Dairies Ltd. dated 05/02/2010 2. Training certificates for training by Thermax Ltd. dated 20/08/2009, 31/08/2009, 16/10/2009, 30/10/2009 and 01/11/2009
/XLS/	1. Draft IRR Calculation file, version 01 dated 2010-01-12 2. Final IRR Calculation file, version 06, dated 2011-07-12 3. Draft CER calculation excel file, version 01 4. Final CER calculation file, version 06, dated 2011-07-12 5. Excel sheet for Additional data (XLS-06) 6. DG data Excel sheet

Table 7-2: Background investigation and assessment documents

Reference	Document
/AMS I.C./	Thermal energy production with or without electricity, Version 19
/AMS III.H./	Methane Recovery in Wastewater Treatment, version 16

Reference	Document
/ATT/	Attachment A to Appendix B of the SMP
/CBD/	CO_2 Baseline Database for Indian Power Sector -User Guide, version 5 dated November 2009 published by CEA.
/CPM/	TÜV Nord JI / CDM CP Manual (incl. CP procedures and forms)
/EIA/	EIA notification issued by Ministry of Environment and Forests (Government of India) dated 14/09/2006
/GCSCP/	UNFCCC: Guidelines for completing the simplified project design document (CDM-SSC-PDD) and the form for submissions on methodologies for small-scale CDM project activities (F-CDM-SSC-Subm)
/IT/	Income-Tax Act, 1961, Government of India
/IPCC-RM/	2006 IPCC Guidelines for National Greenhouse Gas Inventories
/KP/	Kyoto Protocol (1997)
/MA/	Decision 17/CP.7 (Marrakesh – Accords)
/SMP/	Simplified modalities and procedures for small–scale clean development mechanism project activities (Annex II to Decision 21/CP.18)
/TOOL/	Tool to calculate the emission factor for an electricity system, version 02.2.1
	Tool for the demonstration and assessment of additionality, version-6.0.0, EB-65 Annex 21

Reference	Document
	Tool to determine project emissions from flaring gases containing methane, version 01 EB 28
	Tool to calculate baseline, project and/or leakage emissions from electricity consumption, version 01 EB 39
	Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion, version 02 EB 41
	Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories – Attachment A to Appendix B
	Non-binding best practice examples to demonstrate additionality for SSC project activities – Annex 34, EB 35
	Guidelines on the demonstration and assessment of prior consideration of the CDM – Annex 13, EB 62 and EB 41 Annex 46
	Guidelines on assessment of debundling for SSC Project Activities, version 03 EB54
/VVM/	CDM Validation and Verification Manual, version 01.2, Annex 1, EB 55

Table 7-3: Websites used

Reference	Link	Organisation
/dna/	http://cdmindia.in/	National Clean Development Mechanism (CDM) Authority (DNA of India)
/cea/	www.cea.nic.in	Central Electricity Authority
/GHG/	http://www.ghgprotocol.org/templates/GHG5/layout.asp?MenuID=849	World Business Council for Sustainable Development
/ipcc/	http://www.ipcc.ch/	IPCC publications
/ieta/	http://www.ieta.org/	Website of International Emission trading Association (IETA)
/moef/	http://envfor.nic.in/	Ministry of Environment and Forests.
/mpcb/	http://mpcb.gov.in/	Maharashtra Pollution Control Board
/mnre/	http://mnes.nic.in/	Website of Ministry of New and Renewable Energy
/MEDA/	http://www.mahaurja.com/Download/Sitewise_WindInstallationInfo.xls	Maharashtra Energy Development Agency
/unfccc/	http://cdm.unfccc.int	UNFCCC website
/wheatherreport/	http://www.weatherreports.com/India/Baramati/averages.html	WeatherReports.com
/ida/	www.indairyasso.org	Indian Dairy Association
/IT-DEPT/	http://www.incometaxindia.gov.in	Department of Income Tax, Government of India

Table 7-4: List of interviewed persons

Reference	MoI[1]		Name	Organisation / Function
/IM01/	V	☒ Mr ☐ Ms	Jitendra Jadhav	General Manager (Projects), Schreiber Dynamix Dairies Ltd.
/IM01/	V	☒ Mr ☐ Ms	Shivaji Dhumal	Sr. Manager (Projects), Schreiber Dynamix Dairies Ltd.
/IM01/	V	☒ Mr ☐ Ms	Sachin Bhosale	Manager - Environment Schreiber Dynamix Dairies Ltd.
/IM02/	V	☒ Mr ☐ Ms	Kiran Thakar	Manager (M & V services) Thermax Sustainable Energy Solutions Ltd.
/IM02/	V	☒ Mr ☐ Ms	Ajit Sharma	Manager (Finance) Thermax Sustainable Energy Solutions Ltd.
/IM02/	V	☒ Mr ☐ Ms	Bhushan Pachpande	Assistant Manager (M & V services) Thermax Sustainable Energy Solutions Ltd.
/IM02/	V	☒ Mr ☐ Ms	Deepak Pundlik	Executive (M & V services) Thermax Sustainable Energy Solutions Ltd.
/IM03/	V	☒ Mr ☐ Ms	C.P. Nimbalkar	Local Stakeholder, Piaggio Vehicles Ltd.
/IM03/	V	☐ Mr ☒ Ms	Sushma Chaphalkar	Local Stakeholder, Vice President Biotechnology college
/IM03/	V	☒ Mr ☐ Ms	Karim Amed	Local Stakeholder, Sahiba Fabricators
/IM03/	V	☒ Mr ☐ Ms	Anil Choudhar	Local Stakeholder, Sarpach Grampanchayat Rui

[1)] Means of Interview: (**T**elephone, **E**-Mail, **V**isit)

ANNEX

A1: Validation Protocol

A2: Assessment of Baseline Identification

A3: Assessment of Financial Parameters

A4: Assessment of Barrier analysis

A5: Outcome of the GSCP

A6: Appointment certificates of the team members

ANNEX 1: VALIDATION PROTOCOL

Table A-1: Requirements Checklist

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
A. General Description of Project Activity				
A.1. Approval *The written approval of the parties involved is a mandatory requirement*				
A.1.1. Has the project provided written approvals of all parties involved? (EB 55 Annex 1, § 44) *Indicate whether a letter of approval has been received, with a clear reference to the supporting documentation.* *Indicate whether this letter was provided to the DOE by the project participants or directly by the DNA*	*Description:* The following party is involved in the project activity: India (Host Party) and the project participant: Schreiber Dynamix Dairies Ltd. *Justification of evidences:* Schreiber Dynamix Dairies Ltd. has received the host country approval (4/10/2009-CCC, dated 2009-07-17) from DNA of India to ascertain the project activity meets with the host country's sustainable development criteria. *Conclusion:* The project activity complies with the requirement.	/HCA/ /dna/	OK	OK
A.1.2. Are the approvals issued from orgainsations listed as DNAs on the UNFCCC CDM website? (EB 55 Annex 1, §§ 44, 47, 48, 49 (b), 49 (c), 53)	*Description:* Yes, India is a Party to the Kyoto Protocol and has ratified the Protocol on 26 August 2002. *Justification of evidences:* Yes, approval (HCA) is issued from organizations listed as DNAs (India) (data is available publically at	/unfccc/ /dna/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
Indicate the means of validation employed to assess the authenticity, i.e. in case of doubt whether LoA has been verified with the DNA. Further describe which entity submitted the LoA for validation.	the following link http://cdm.unfccc.int/DNA/index.html). The HCA issued by the Indian DNA (4/10/2009-CCC, dated 2009-07-17) is submitted directly by the PP to the DOE along with the letter of invitation issued by MoEF to the PP for attending the DNA meeting. Hence, the DOE confirms that the approvals issued from Indian DNA fulfils stipulations laid under *EB 55 Annex 1 §§ 44, 47, 48, 49 (b), 49 (c), 53.* *Conclusion:* The project activity complies with the requirement.			
A.1.3. Do the written approvals confirm that the corresponding party is a Party to the Kyoto Protocol? (EB 55 Annex 1, § 45(a))	*Description:* Yes, the HCA provides written confirmation that the India is a Party to the Kyoto Protocol. *Justification of evidences:* HCA is submitted to the DOE which confirms that India has ratified the Kyoto Protocol in August 2002. Hence, it meets the stipulation laid under (EB 55 Annex 1 §45, (a)). *Conclusion:* The project activity complies with the requirement.	/HCA/	OK	OK
A.1.4. Do the written approvals confirm that the participation is voluntary? (EB 55 Annex 1, § 45(b))	*Description:* Yes, the HCA confirms that the participation of PP is voluntary. *Justification of evidences:* PP has submitted HCA to the DOE, which confirms (HCA, page no. 02, bullet no.2) that the participation of the PP under the proposed CDM project activity is voluntary participation. Hence it meets the stipulation made under EB 55 Annex 1 §45, (b) and found to be ok. *Conclusion:* The project activity complies with the requirement.	/HCA/ /IM01/	OK	OK
A.1.5. Does the written approval from the host country confirm7 that the project contributes to the sustainable development in the country?	*Description:* Yes, the HCA confirms through written approval that the project contributes to the sustainable development in the country *Justification of evidences:* HCA is submitted to the DOE and DOE	/HCA/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
(EB 55 Annex 1, § 45(c))	on verification of the same confirms that the project activity meets the stipulation made under EB 55 Annex 1 §45, (c) and found to be ok. *Conclusion:* The project activity complies with the requirement.			
A.1.6. Do the written approvals refer to the precise project title in the PDD submitted for registration or an additional specification of the project activity, e.g. PDD version number? (EB 55 Annex 1, §§ 45(d), 50)	*Description:* Yes, the HCA has the same project title as mentioned in the PDD submitted for registration. *Justification of evidences:* HCA is submitted to the DOE and DOE on verification of the HCA and PDD confirms that the project activity meets the stipulation made under EB 55 Annex 1 §§45 (d), 50 and found to be ok. *Conclusion:* The project activity complies with the requirement.	/HCA/	OK	OK
A.1.7. Are the written approvals unconditional with regard to A.1.3 to A.1.6? (EB 55 Annex 1, § 46)	*Description:* The written approvals unconditional with regard to A.1.3 to A.1.6 *Justification of evidences:* HCA is submitted to the DOE. The DOE on verification of the HCA confirms that the project activity meets the stipulation made under EB 55 Annex 1 §46 and found to be ok *Conclusion:* The project activity complies with the requirement.	/HCA/	OK	OK
A.1.8. Is the information regarding the project participants listed in section A3 and in Annex 1 of the PDD internally consistent to each other? (EB 55 Annex 1, § 51)	*Description:* Schreiber Dynamix Dairies Ltd. is the only project participant listed in the PDD (ref section A.1.3 and Annex-1). *Justification of evidences:* The information regarding the project participants has been verified through the PDD, statutory compliance report and the Host Country Approval issued by MoEF, India (DNA). *Conclusion:* The project activity complies with the requirement.	/PDD/ /HCA/ /SC/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
A.1.9. Are all project participants listed in the PDD approved at least by one Party involved? (EB 55 Annex 1, § 51) *Indicate whether the participation of the project participant(s) has been approved by a Party to the Kyoto Protocol.* *Describe the means of validation employed to draw this conclusion.*	*Description:* Schreiber Dynamix Dairies Ltd. is the only project participant listed in the PDD (ref section A.1.3 and Annex-1). Furthermore, Schreiber Dynamix Dairies Ltd. has already obtained the HCA from the Indian DNA. Neither the PDD not the HCA mentions participation of any other project participants. *Justification of evidences:* The DOE has checked and confirms that Schreiber Dynamix Dairies Ltd. is the only project participant as appropriately listed in the PDD (ref section A.1.3 and Annex-1). Furthermore, the PP has already submitted the HCA obtained from the Indian DNA. The DOE also confirms that neither the PDD nor HCA mentions participation of any other project participants except Schreiber Dynamix Dairies Ltd. (ref: the submitted HCA and PDD). The DOE therefore confirms that project activity meets the stipulation made under EB 55 Annex 1, § 51 and found to be ok. *Conclusion:* The project activity complies with the requirement.	/HCA/ /PDD/	OK	OK
A.1.10. Are any other project participants approved but not listed in the PDD? (EB 55 Annex 1, § 52)	*Description:* Not applicable, please refer comments made under A.1.9. *Justification of evidences:* The DOE has checked the same with the help of the submitted HCA and PDD. The DOE therefore confirms that project activity meets the stipulation made under EB 55 Annex 1, § 52 and found to be ok. *Conclusion:* The project activity complies with the requirement.	/HCA/ /PDD/	OK	OK
A.1.11. Does the DoE have a direct contractual relationship with the PP? (EB 55 Annex 1, § 51; EB 50 Annex 48, §§ 7–9) *Check whether the PPs listed in the published PDD are still*	*Description:* Yes, the DOE has direct contractual relationship with the PP. *Justification of evidences:* The PP has placed the contract to the DOE on date 2009/09/29 which is in line with the requirements of	/CON/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
listed in the PDD going to be submitted to request for registration.	EB 55 Annex 1, §51 and EB 50, Annex 48, §§ 7-9. *Conclusion:* The project activity complies with the requirement.			
A.2. Contribution to Sustainable Development *The project's contribution to sustainable development is assessed.*				
A.2.1. Has the host country confirmed that the project assists it in achieving sustainable development? (EB 55 Annex 1, §§ 125–127) *Contains a statement confirming whether the letter of approval by the DNA of the host party confirmed the contribution of the project to the sustainable development of the Host Party.*	*Description:* Yes, the HCA confirms through written approval that the project contributes to the sustainable development in the country. *Justification of evidences:* HCA is submitted to the DOE and DOE on verification of the same confirms that the project activity meets the stipulation made under EB 55 Annex 1 §§ 125 – 127 and found to be OK. *Conclusion:* The project activity complies with the requirement.	/HCA/ /dna/	OK	OK
A.2.2. Will the project create other environmental or social benefits than GHG emission reductions? (EB 55 Annex 1, §§ 125–127) *Describe the other positive aspects not related to GHG emission reduction on the environment.*	*Description:* The project will lead to technological and economic benefits in addition to environmental, social benefits and GHG emission reductions. The above indicators are described by the host party for the sustainable development. *Justification of evidences:* The sustainability criteria were checked from the PDD as well as the MOEF-India website (DNA) and the same was approved by the Host Country Approval. *Conclusion:* The project activity complies with the requirement.	/PDD/ /dna/ /HCA/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
A.3. PDD editorial aspects *The PDD used as a basis for validation shall be prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website.*				
A.3.1. Has the latest version of the PDD form been applied? (EB 55 Annex 1, § 55)	*Description:* Yes, the PDD is applying the latest PDD template (Version 03). *Justification of evidences:* PDD has been checked against the PDD template available on UNFCCC website. http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/PDD_form02_v03.doc and confirms that latest template for PDD is applied by the PP. *Conclusion:* The DOE confirms that the project activity meets the stipulation made under EB 55 Annex 1, § 55 and found to be ok.	/PDD/ /unfccc/	OK	OK
A.3.2. Has the PDD been duly filled in accordance with the latest guidance(s)? (EB 55 Annex 1, §§ 56–57)	*Description:* Yes, latest version of the guideline (Version 05) has been appropriately adopted by the PP. *Justification of evidences:* The DOE has verified same against the latest available version of guideline for CDM SSC PDD available on UNFCCC website http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid02_v05.pdf and that the project activity meets the stipulation made under EB 55 Annex 1, §§ 56, 57. *Conclusion:* PDD has been duly filled in accordance with the latest guidance	/PDD/ /unfccc/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
A.4. Technology to be employed *Validation of project technology focuses on the project engineering, choice of technology and competence/ maintenance needs. The DOE should ensure that environmentally safe and sound technology and know-how is used.*				
A.4.1. Does the PDD contain a clear, accurate and complete project description? (EB 55 Annex 1, §§ 58–59, 64) *The PDD shall contain a clear description of the project activity which provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation.* *Pl. consider esp. chapters A.2, A.4.2 and A.4.3 (in case of LSC PDD) for assessment.* *Describe the process undertaken to validate the accuracy and completeness of the project description.* *Contain the DOE's opinion on the accuracy and completeness of the project description.*	*Description:* Editorial mistakes and unclear statements found in the PDD. The project activity involves the treatment of mother liquor and capture biogas which is utilized for steam generation using dual fuel fired boilers. The project proponent is procuring about 800,000 -1,000,000 litres of milk/day from the surrounding districts for producing the dairy products. The processing of the milk for producing casein and lactose generates around 45 m^3/day of De-Lactose Permeate (DLP) commonly known as mother liquor. This mother liquor is treated in anaerobic digester having designed capacity to treat 45 m^3/day of mother liquor. Captured biogas was then used to generate the steam using two number of dual fuel (biogas and FO) fired boilers having capacity of 14 TPH. Nevertheless, CAR A2 has been raised for editorial mistakes and unclear statement. *Justification of evidences:* The project description and ownership was verified from the Certificate of Incorporation by Ministry of Company Affairs, Government of India; Consent to Establish by MPCB and Commissioning Certificates and found to be in line with the project description in the PDD. However CAR A2 and CAR B2 need to be address.	/PDD/ /CC/ /SC/	~~CAR A2~~ ~~CAR B2~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	"Corrections are requested for the editorial mistakes and unclear statements made in various sections A.2, A.4.2 of PDD" besides clarification w.r.t. inconsistencies on technical equipment parameters. *Conclusion:* CAR A2 has been raised in this context.			
A.4.2. Is this description in accordance with the real situation or (in case of Greenfield projects) is it most likely that the project will be implemented acc to the project description?	*Description:* The project is already implemented and corresponds to the description provided in the PDD. *Justification of evidences:* The DOE has confirmed the implementation of the project activity is in line with the PDD during the site visit, conducted interviews with PP and supplier besides against project design documents. *Conclusion:* The project activity complies with the requirement.	/PDD/ /IM01,02/ /MAP/	OK	OK
A.4.3. In case the project involves alteration of the existing installation or process, is a clear description available regarding the differences between the project and the pre-project situation? (EB 55 Annex 1, §§ 63–64) *Describe the steps taken to validate this issue.*	*Description:* The project is already implemented and corresponds to the description provided in the PDD. PP has installed two new anaerobic digester for treatment of mother liquor. Further, additional stream of 1000 m^3 of WWTP added to existing 2000 m^3 WWTP to treat additional quantity of wastewater. *Justification of evidences:* The DOE has confirmed the implementation of the project activity and change in pre-project scenario is in line with the PDD during the site visit and conducted interviews besides project design documents. *Conclusion:* The project activity complies with the requirement.	/PDD/ /IM01,02/ /MAP/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
A.4.4. Does the project design engineering reflect current good practices? *Consider the equipment specifications, literature (e.g. EU BREF papers) and professional experiences. Describe the process undertaken to assess the engineering.*	*Description:* The project design engineering reflects current good practices which were evidenced from the technical description of the anaerobic digesters and dual fuel fired boilers. In addition, Indian dairy association has recognized the project activity as first of its kind. Nevertheless CL B7 has been raised in this context. *Justification of evidences:* The DOE confirms the same with the help of the submitted technical description of the 45 m^3/day capacity anaerobic digester and two retrofitted dual fuel fired boilers. However PP needs to submit the letter of reorganization by Indian dairy association for project activity as first of its kind. *Conclusion:* please refer CL B7.	/PDD/ /ADD/ /OL/ /TD/	~~CL B7~~	OK
A.4.5. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country? *Describe the process undertaken to assess the state of the art technology.*	*Description:* The project design engineering project uses state of the art technology which was evidenced from the technical description of the anaerobic digesters and dual fuel fired boilers. The UASB technology used here is one of the latest advanced technology in India. In addition, Indian dairy association has recognized the project activity as first of its kind Nevertheless CL B7 has been raised in this context. *Justification of evidences:* The DOE confirms the same with the help of the submitted technical description of the 45 m^3/day capacity anaerobic digester and two retrofitted dual fuel fired boilers. However PP needs to submit the letter of reorganization by Indian dairy association for project activity as first of its kind. *Conclusion:* please refer CL B7.	/PDD/ /ADD/ /OL/ /TD/	~~CL B7~~	OK
A.4.6. Does the project make provisions for meeting training and maintenance needs?	*Description:* The project team is well trained in operation, maintenance, trouble shooting, and analysis of operating parameters and other safety procedures of the UASB technology	/PDD/ /CT/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
Describe the process undertaken to assess the maintenance and training needs.	and boilers. *Justification of evidences:* The training procedures as observed on site and the competency and training certificates of the personnel involved in O & M were seen. *Conclusion:* The project activity complies with the requirement.	/IM01,02/		
A.5. Small scale project activity *It is assessed whether the project qualifies as small-scale CDM project activity*				
A.5.1. Does the project qualify as a small scale CDM project activity as defined in decision 4 / CMP.1 annex II? (EB 55 Annex 1, §§ 135–136 (a))	*Description:* Yes, The project activity will result in emission reduction of 14397 tCO_2/year (including emission reductions claimed under methodologies AMS III.H and AMS I.C.), which is less than 60 kilo tonnes of carbon dioxide equivalent annually. Further, aggregate installed capacity of the fossil fuel fired boilers is 2 x 14 TPH that is equivalent to 17.56 MWth and is within the limits of 45 MW_{th}. However, for estimation of installed capacity of dual fuel fired boilers only one 14 TPH boiler was considered and the debundling criteria have not been addressed in the PDD. PP also needs to justify debundling criteria as per "Guidelines on assessment of de-bundling for SSC project activities" (EB 47, Annex 32). *Justification of evidences:* Extract of CAR A1 and CAR B2. Project prerequisite as a small scale CDM project activity as defined in decision 4 / CMP.1 annex II needs to be confirmed. *Conclusion:* However, please refer to CAR A1, CAR A2 and CAR B2.	/PDD/ /PO/ /XLS/	~~CAR A1~~ ~~CAR A2~~ ~~CAR B2~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
A.5.2. Does the project apply one of the approved small scale categories and any methodology and tool referred therein? (EB 55 Annex 1, § 136 (b)) *Check, if applicable the expiry dates of the applied methodology. Further, take into consideration the general guidance to the methodologies[23], which provide guidance on equipment capacity, equipment performance, sampling and other monitoring related issues.*	*Description:* The project applies the approved small scale methodologies by UNFCCC i.e. AMS III. H. "Methane Recovery in Wastewater Treatment" (Version: 13) and AMS I. C. "Thermal energy production with or without electricity" (Version: 16). However, below finding has been raised. The applicability conditions of the applied methodology AMS III.H version 13 needs to be revised for each paragraph (from paragraph 1 to 12) and their sub points. Moreover, demonstrate that the wastewater contains biogenic organic matter. The project activity is designed to co-fire the biogas simultaneously in 2 x 14 TPH capacity boilers. Both boilers needs to be consider for demonstration of capacity limits for SSC projects under paragraphs 3, 4 and 8 of applied methodology AMS I.C version 16. Detailed calculations should be presented on the rated capacity of both boilers. Furthermore justification provided under paragraph 7 of applicability conditions of AMS I.C version 16 needs to be revised as project activity involved retrofication of 2 x 14 TPH FO fired boilers to dual fuel (FO and biogas) fired boilers. *Justification of evidences:* By means of methodologies, UNFCCC webpage, supporting documents, onsite visit and conducted interviews *Conclusion:* CAR A2 has been raised due to clarification w.r.t. to	/AMS I. C./ /AMS III. H./ /unfccc/ /PO/ /IM01/	~~CAR A2~~ ~~CAR B2~~	OK

[23] http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	capacity of boiler and CAR B2 has been raised due to expiring of methodology versions and update to valid version of methodology.			
A.5.3. Is the small scale project activity not a debundled component of a larger project activity? (EB 55 Annex 1, § 136 (c)) *Describe the steps taken to validate this issue. PI refer to the Compendium of guidance on debundling (EB 54, Annex 13).*	*Description:* The PP justified the debundling criteria according to paragraph 2, Appendix C of Simplified Modalities and Procedures for SSC project activities; however, PP also needs to justify debundling criteria as per "Guidelines on assessment of de-bundling for SSC project activities" (EB 47, Annex 32). *Justification of evidences:* Justification of the debundling criteria according to paragraph 2, Appendix C of Simplified Modalities and Procedures for SSC project activities needs to be confirmed. *Conclusion:* Please refer to the CAR A1.	/PDD/ /unfccc/	~~CAR A1~~	OK
A.5.4. Is an assessment of the environmental impacts of the proposed SSC CDM project activity required by the host Party? (EB 55 Annex 1, § 136 (d))	*Description:* No, assessment of the environmental impacts for such small wastewater treatment, biogas recovery and its use in boilers (the proposed SSC CDM project activity) is required by the host party i.e. India. *Justification of evidences:* The wastewater treatment and steam generation project activities do not fall under the purview of Environmental Impact Assessment notification (dated 14th September, 2006) released by the Ministry of Environment and Forests (MoEF), Government of India (GOI). *Conclusion:* The project activity complies with the requirement.	/PDD/ /moef/	OK	OK
B. Project Baseline, Additionality and Monitoring Plan				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.1. Application of the Methodology				
B.1.1. Does the project apply an approved and applicable CDM methodology and a valid version thereof? (EB 55 Annex 1, § 65) *Describe the steps taken to validate this issue.*	*Description:* The PP has applied methodologies AMS III.H version 13 & AMS I.C version 16. *Justification of evidences:* By means of PDD and related methodologies besides unfccc webpage. *Conclusion:* CAR B1 and B2 have been raised due to expiring of methodology versions and update to valid version of methodology.	/PDD/ /AMS III. H./ /AMS I. C./ /unfccc/	~~CAR B2~~ ~~CAR B1~~	OK
B.1.2. Is the applied CDM methodology identical with the version available on the UNFCCC website? (EB 55 Annex 1, §§ 65, 70) *Describe the steps taken to validate this issue.*	*Description:* The PP has applied methodologies AMS III.H version 13 and AMS I.C version 16. *Justification of evidences:* By means of PDD and related methodologies besides unfccc webpage. *Conclusion:* CAR B1 and B2 have been raised due to expiring of methodology versions and update to valid version of methodology.	/PDD/ /unfccc/ /AMS III. H./ /AMS I. C./ 8	~~CAR B2~~ ~~CAR B1~~	OK
B.1.3. Are all applicability criteria in the methodology, the applied tools or any other methodology component referred to therein fulfilled? (EB 55 Annex 1, §§ 66(a)–(b), 68, 71, 76) *Describe for <u>each</u> applicability criterion listed in the selected approved methodology the steps taken to assess the*	*Description:* No. The baseline and monitoring methodologies applicable to the project activity are "AMS III. H. "Methane Recovery in Wastewater Treatment" and AMS I. C. "Thermal energy production with or without electricity". The project activity involves the installation of anaerobic digester for treatment of mother liquor and use captured biogas in dual fuel fired boilers. Justification to all applicability criteria's defined in the	/PDD/ /AMS III. H./ /AMS I. C./	~~CAR B2~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
information contained in the PDD.	methodologies for the project activity. *Justification of evidences:* PDD, applied methodologies and tools, technical specifications and onsite interviews. *Conclusion:* CAR B2 has been raised due to expiring of methodology versions and update to valid version of methodology..	/TOOL/ /TD//PO/ IM01/ /IM02/		
B.1.4. In case one or more applicability criteria have not been met, has the validation team requested clarification to, revision of or deviation from the methodology in accordance with the latest guidelines? (EB 55 Annex 1, §§ 72–75)	*Description:* Not applicable. Please refer to section B.1.3 of this table. *Justification of evidences:* Please refer to section B.1.3 of this table. *Conclusion:* CAR B2 has been raised due to expiring of methodology versions and update to valid version of methodology..	/PDD/ /AMS III. H./ /AMS I. C./	~~CAR B2~~	OK
B.1.5. Is the project in accordance with every other stipulation or requirement mentioned in all sections of the methodology and in guidance's for approved methodologies provided by the CDM EB? (EB 55 Annex 1, § 69, 71) *Describe the steps taken to check whether the proposed project activity meets all the other possible stipulations and /or limitations mentioned in all sections of the approved methodology selected.*	*Description:* refer section B.1.3 of this table *Justification of evidences:* The PDD was checked for the requirements described in various sections of the baseline and monitoring methodologies "AMS III. H. "Methane Recovery in Wastewater Treatment" and AMS I. C. "Thermal energy production with or without electricity" *Conclusion:* CAR B2 has been raised due to expiring of methodology versions and update to valid version of methodology.	/PDD/ /AMS III. H./ /AMS I. C./	~~CAR B2~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.2. Project Boundaries *Project Boundaries are the limits and borders defining the GHG emission reduction project*				
B.2.1. Are the project's spatial boundaries (geographical) clearly defined? (EB 55 Annex 1, §§ 67(a), 78–80) *Provide information on how the validation of the geographical boundary has been performed either based on reviewed documented evidence or by describing what was observed/viewed during a site visit.*	*Description:* The project's spatial boundaries (geographical) are defined under section B.3 of PDD. The project boundary includes mother liquor treatment and biogas recovery system, existing wastewater treatment system and both dual fuel fired boilers. However, as per methodology AMS III.H version 13 "the project boundary is the physical, geographical site where the wastewater and sludge treatment takes place in baseline and project situation. It covers all facilities affected by the project activity including sites where the processing, transportation and application or disposal of waste products as well as biogas takes place. Correction requested in this regard. Moreover, the project boundary needs to be revise in line with paragraph 14 of AMS III.H version 13. Furthermore as per methodology AMS I.C version 16 the boundary should also extend to the facility where the energy is consumed, in this regard the project boundary needs to be corrected. Also DG sets needs to be included in the project boundary as source of electricity for operation of wastewater treatment plant and boilers will be DG sets in case of grid failure. Baseline and project activity components are not clear in table for the source and type of emissions associated with the project activity in section B.3 of PDD. *Justification of evidences:* The project boundary description provided in the PDD was checked against the baseline and monitoring methodologies "AMS III. H. "Methane Recovery in	/PDD/ /AMS III. H./ /AMS I. C./ /PO/ /CC/ /IM01/	~~CAR B3~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Wastewater Treatment" and AMS I. C. "Thermal energy production with or without electricity" and compared with the submitted documentary evidences i.e. purchase orders, and commissioning certificate. The description provided in the PDD was verified and resulted in CAR. *Conclusion:* Please refer to the CAR B3.			
B.2.2. Are all sources and GHGs included in the project boundary as required in the applied methodology? (EB 55 Annex 1, §§ 67(a), 78–80) *Provide information on how the validation of the GHGs and sources has been performed either based on reviewed documented evidence or by describing what was observed/viewed during a site visit.*	*Description:* CH_4 and CO_2 are the source of GHGs included in the project boundary in line with Emissions due to untreated mother liquor stream and Emissions due to combustion of furnace oil in the boiler otherwise would have utilized in the boiler. *Justification of evidences:* Since the project, activity is avoiding the CH_4 emissions occurring in mother liquor treatment in anaerobic lagoons in baseline scenario and CO_2 emissions avoided due to displacement of fossil fuel due to captured biogas. Same has been verified from the PO, commissioning certificates and site visit. However PP needs to provide justification for inclusion/exclusion of N_2O *Conclusion:* Please refer to the CAR B3.	/PDD/ /AMS III. H./ /AMS I. C./ /PO/ /CC/ /IM01/	~~CAR B3~~	OK
B.2.3. In case the methodology allows to choose whether a source and/or gas is to be included, is the choice sufficiently explained and justified? (EB 55 Annex 1, §§ 67(a), 78–80) *Confirm if the justification provided by the PPs is reasonable, based on assessment of supporting documented evidence provided by the PPs or by onsite observations.*	*Description:* Not applicable, please refer to section B.2.2 of this table. *Justification of evidences:* Please refer to section B.2.2 of this table. *Conclusion:* However, Please refer to the CAR B3.	/PDD/ /AMS III. H./ /AMS I. C./ /PO/ /CC/	~~CAR B3~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.3. Baseline Identification *The choice of the baseline scenario will be validated with focus on whether the baseline is a likely scenario, and whether the methodology to define the baseline scenario has been followed in a complete and transparent manner.*				
B.3.1. What possible baseline scenarios have been considered? (EB 55 Annex 1, §§ 67(b), 83) *Fill in all alternatives in table A-2.*	*Description:* Pre-project activities i.e. treatment of mother liquor using anaerobic lagoons without methane recovery and steam generation using FO based boilers are considered as alternatives for the project activity in line with applied methodologies. *Justification of evidences:* According to the regulation for small scale project activities the additionality must be substantiated with identification of barriers as per the guidance given in Attachment A to Appendix B of the simplified modalities and procedures. Therefore, the identification of alternatives is not necessary. However, further, continuation of pre-project activities is identified as most plausible alternative to the project activity *Conclusion:* The project activity complies with the requirement. However CAR B4 has been raised.	/PDD/ /AMS III. H./ /AMS I. C./	~~CAR B4~~	OK
B.3.2. Is the list of alternatives complete? (EB 55 Annex 1, §§ 67(b), 83) *Describe how it was validated that all alternatives are plausible and no plausible alternative is excluded from the consideration*	☒ All plausible alternative scenarios listed in the approved methodology have been considered. In the course of document review and site visit, it has been validated that no other alternatives which supply comparable outputs and / or services are to be taken into consideration. Thus no plausible scenario has been omitted. ☐ The following alternative scenarios/options have been	/PDD/ /AMS III. H./ /AMS I. C./	~~CAR B4~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
	omitted. Corresponding CAR(s)/CL(s) has /have been issued Please refer to section B.3.1 of this table and point B.3.1 before. However CAR B4 has been raised.			
B.3.3. What has been identified as the baseline scenario? (EB 55 Annex 1, §§ 81–82, 86) *Describe the chosen BL scenario, taking into consideration the technology that would be employed and / or the activities that would take place in the absence of the proposed CDM project activity.*	*Description:* The identified baseline scenario is the pre-project activities i.e. treatment of mother liquor using anaerobic lagoons without methane recovery and steam generation using FO (fossil fuel) based boilers. *Justification of evidences:* The project activity involves the treatment of mother liquor and capture biogas which utilized for steam generation using dual fuel fired boilers. The project proponent is procuring about 800,000 -1,000,000 litres of milk/day from the surrounding districts for producing the dairy products. The processing of the milk for producing casein and lactose generates around 45 m^3/day of De-Lactose Permeate (DLP) commonly known as mother liquor. This mother liquor was treated in anaerobic lagoons. Captured biogas was flared to atmosphere. All alternatives comply with all applicable legal and regulatory requirements. *Conclusion:* The project activity complies with the requirement. However CAR B4 and CAR B11 has been raised.	/PDD/ /AMS III. H./ /AMS I. C./	~~CAR B4~~ and ~~CAR B11~~	OK
B.3.4. Has the baseline scenario been determined according to the methodology? (EB 55 Annex 1, §§ 82, 87(e)) *Describe how it is validated that the identification of the most plausible baseline scenario is carried out in accordance with*	For details of the assessment regarding the evaluation of the baseline scenario pl. refer to table A-2. ☒ The determination has been carried out as per the procedure contained in the applied methodology. ☐ The following CARs / CLs have been identified with	/PDD/ /AMS III. H./ /AMS I. C./	~~CAR B4~~ and ~~CAR B11~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
the applied methodology and applied methodological tools. Please refer to table A-2.	respect to the selection of the baseline scenario: Please refer section B.3.3 of this table for the requisite information. However CAR B4 and CAR B11 has been raised.			
B.3.5. Has any plausible alternative scenario been excluded? (EB 55 Annex 1, § 83) *Describe how it is validated that no plausible alternative scenario has been excluded.*	For details of the assessment regarding the evaluation of the baseline scenario, please refer to table A-2. ☒ No plausible baseline scenario has been excluded. ☐ The following plausible baseline scenarios have been excluded though no adequate justification has been provided for elimination. The following CARs / CLs have been issued: Please refer section B.3.3 of this table for the requisite information. However CAR B4 has been raised.	/PDD/ /AMS III. H./ /AMS I. C./	~~CAR B4~~	OK
B.3.6. Is the identified baseline scenario reasonable and has the baseline scenario been determined using conservative assumptions where possible, including relevant references and sources? (EB 55 Annex 1, §§ 84–86(a)–(c)) *Describe whether the choice of the identified baseline scenario is reasonable by validating the key assumptions, calculations and rationales used in the PDD. Describe whether these are listed, relevant and conservatively interpreted in the PDD.*	☐ The baseline scenario is reasonable and has been determined using conservative assumptions where possible. Please refer to comments in table A-2 and sections B.3.2 to B.3.5 above. ☒ The following CARs / CLs have been issued because assumptions used in the baseline determination have been assessed to be not conservative *Description:* Key assumptions used for baseline determination are quantity of wastewater (mother liquor), COD of wastewater (mother liquor), NEWNE grid emission factor, net calorific value of FO and emission factor for FO. Emission factor for FO needs to be corrected as per latest IPCC guidelines in the table of information of key variables used for baseline determination in section B.4 of PDD. Also corrections required in all relevant sections in this regard.	/PDD/ /PDD/ /AMS III. H./ /AMS I. C./ /CEA/ /ipcc/	~~CAR B4~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Justification of evidences: Emission factor for FO is not in line with IPCC 2006 guidelines *Conclusion:* Please refer to the CAR B4.			
B.3.7. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations? (EB 55 Annex 1, §§ 85, 87(d)) *Describe whether the PP has shown that all relevant policies and circumstances have been identified and correctly considered in the PDD in accordance with the guidance by the Board. Pl. consider the guidance EB 22 annex 3 (regarding E+ and E- policies).*	*Description:* National policies and circumstances relevant to the baseline of the proposed project activity shall be summarized in section B.5 of the PDD (Cp SSC-CDM-PDD filling guidelines). *Justification of evidences:* DOE verified the section B.5 of the PDD and found that description on relevant national and/or sectoral policies, macro-economic trends and political aspirations is missing. Conclusion: Please refer to the CAR B5.	/PDD/	~~CAR B5~~	OK
B.3.8. Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced? (EB 55 Annex 1, § 87(a)–(c)) *Describe whether the documents and sources referred to in the PDD are correctly quoted and clearly referenced.*	*Description:* Please refer to sections B.3.3 and B.3.6 of this table. *Justification of evidences:* Please refer to sections B.3.3 and B.3.6 of this table. *Conclusion:* Please refer to sections B.3.3 and B.3.6 of this table.	/PDD/ /AMS III. H./ /AMS I. C./	~~CAR B4~~	OK
B.3.9. Does the PDD contain a *verifiable* description of the identified baseline scenario, including a description of the technology that would be	*Description:* Please refer to sections B.3.3 and B.3.6 of this table. *Justification of evidences:* Please refer to sections B.3.3 and B.3.6 of this table.	/PDD/ /AMS III. H./	~~CAR B4~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
employed and/or the activities that would take place in the absence of the proposed CDM project activity? (EB 55 Annex 1, § 86)	*Conclusion:* Please refer to sections B.3.3 and B.3.6 of this table.	/AMS I. C./		
B.4. Additionality Determination *The assessment of additionality will be validated with focus on whether the project itself is not a likely baseline scenario.*				
B.4.1. Methodology				
B.4.1.1. Does the PDD describe how the project is additional and does the additionality justification follow the requirements of the applied methodology and/or methodological tools? (EB 55 Annex 1, §§ 67(d), 94–95) *Describe how it is validated that additionality justification is carried out in accordance with the applied methodology and/or applied methodological tools. Further focus your assessment on the reliability and credibility of data, rationales and assumptions, justifications and documentations provided by the PP.*	*Description:* Yes, the PDD describes additionality of the project and additionality justifications have followed the requirements of the Appendix B of the simplified modalities and procedures for small-scale CDM project activities (Attachment A to Appendix B). Nevertheless PP needs to justify the benchmark selected, its conformity to Guidance 12 and 13 of Annex 5, EB 62 and the appropriateness for the financial indicator selected *Justification of evidences:* • Attachment A to Appendix B • Annex 34, EB 35 • Annex 51, EB 58 • Revised PDD. *Conclusion:* Please refer CAR B6	/PDD/	~~CAR B6~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.2. Consideration of CDM before project start				
B.4.2.1. Is the project starting date reported in accordance with the CDM glossary of terms? (EB 55 Annex 1, § 99, 104(a)) *Assess why the chosen starting date can be considered as the earliest date at which either the implementation or construction or real action of a project has begun or will begin.* *Check that no other activities related to the project that happened before the identified start date can be considered as start date. In this context please also take into consideration infrastructural expenses if they are relevant (in terms of costs and importance for the project implementation) in the specific context of the project activity.*	*Description:* The Purchase orders issued by SDDL to Thermax. Mother Liquor Treatment and Boiler Fuel conversion system and waste water expansion system is considered as the start date of the project activity. However evidences needs to be submitted to Assessment team. *Justification of evidences:* Purchase Orders issued by SDDL to M/s Thermax Ltd needs to be submitted to Assessment team. *Conclusion:* Please refer CL B7.	/PDD/ /PO/ /unfccc/ /SD/	~~CL B7~~	OK
B.4.2.2. In case the project start date is on or after 2nd August 2008 has the PP informed the DNA and UNFCCC about the intension to seek CDM status? (EB 55 Annex 1, §§ 99–101) *Describe whether such a notification has been provided by the project participants within six months of the project activity start date; if NOT it shall be determined that the CDM was not seriously considered.*	*Description:* Project start date is after August 2, 2008 and the project developer has informed DNA within 6 months after the start date as per Annex 46, EB 41, which was in vogue at the time of intimation to DNA. UNFCCC was informed immediately after the adoption of Annex 61 in EB 48. However PP needs to demonstrated the conformity of the project activity to Annex 13 of EB 62. *Justification of evidences:* • Letter addressed to DNA • Correspondence exchanged with UNFCCC	/PDD/ /unfccc/ /SD/ /NOF/	~~CAR B6~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
	• Annex 22, EB 49 and Annex 13, EB 62 • Annex 61, EB 48 • Annex 46, EB 41 *Conclusion:* In conformity with the directions then in vogue, project developer had informed DNA about the start date of the project and the intention to seek CDM registration. However, when EB adopted Annex 61 in its 48th Meeting, project developer informed UNFCCC wherein the intimation made to DNA (within 6 months of the start date) has been mentioned. Nevertheless PP should demonstrate the above chronology with the help of robust supportive. Please refer CAR B6.			
B.4.2.3. In case the project start date is before commencing of validation and 2nd August 2008, was the incentive from the CDM seriously considered and are details given in the PDD? (EB 55 Annex 1, §§ 100, 102) *Describe whether the evidence to support such consideration is adequately and transparently described in the PDD.*	Not applicable	/PDD/ /MD/ /IM01/	OK	OK
B.4.2.4. How and when was the decision to proceed with the project taken? *Describe the steps taken to validate the starting date.*	*Description:* The decision to proceed with the project was taken by the Board of Director of M/s Schreiber Dynamix Dairy Ltd. on 30.06.2008. The Board seriously considered CDM benefits. However Following documents / documentary evidences should be submitted:	/PDD/ /MD/ /SD/ /IM01/	~~CL B7~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
	• Board resolution in which the CDM benefits were seriously considered • Copies of the Purchase Order placed for WWTP and Biogas Boiler plant *Justification of evidences:* • Board resolution in which the CDM benefits were seriously considered • Copies of the Purchase Order placed for WWTP and Biogas Boiler plant • PDD *Conclusion:* Please refer CL B7.	/PO/		
B.4.2.5. Is the project start date consistent with the available evidences? (EB 55 Annex 1, § 102) *Describe the evidence assessed regarding the prior consideration of the CDM (if necessary). Describe whether the evidence to support such consideration is adequately and transparently described in the PDD.*	*Description:* The project start date needs to be consistent with the available evidences. Therefore following documents / documentary evidences should be submitted: • Copies of the Purchase Order placed for WWTP and Biogas Boiler plant *Justification of evidences:* • Copies of the Purchase Order placed for WWTP and Biogas Boiler plant • PDD *Conclusion:*Please refer CL B7.	/PDD/ /PO/	~~CL B7~~	OK
B.4.2.6. Was the decision to proceed with the project taken by a person which has the	*Description:* Yes, the decision to proceed with the project was taken by the	/PDD/ /MD/	~~CL B7~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
authority to do so? (EB 55 Annex 1, § 102(a) *Describe the steps taken to validate this issue.*	Board of Directors of M/s Schreiber Dynamix Dairy Ltd. however the evidence of decision to proceed with the project from appropriate authority needs to submit to assessment team. *Justification of evidences:* • The extract of the minutes of Board resolution • PDD *Conclusion:* Please refer CL B7.			
B.4.2.7. How was the CDM involved in the decision making process? (EB 55 Annex 1, § 102) *Describe why CDM was a decisive factor in the decision making process.*	*Description:* The decision to proceed with the project was taken by the Board of Director of M/s Schreiber Dynamix Dairy Ltd. after taking into consideration CDM benefits. However Board resolution in which the CDM benefits were seriously considered needs to submit. *8.1.1* *Justification of evidences:* • The extract of the minutes of Board resolution *Conclusion:* Please refer CL B7.	/PDD/ /MD/ /IM01/	~~CL B7~~	OK
B.4.2.8. Do the evidences provided doubtlessly prove that continuous and real actions were taken in order to secure the CDM status? (EB 55 Annex 1, § 102; EB 62 Annex 13 § 7)	Not applicable as it is a 'new project activity' as per Annex 13, EB 62.	/PDD/ /MD/ /IM01/	OK	OK
B.4.2.9. Is the gap of documented evidences to secure the CDM status less than 3 years	Not applicable as it is a 'new project activity' as per Annex 13, EB 62.	/PDD/ /MD//	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
and are the evidences relevant for substantiating the action taken, credible, reliable and complete? (EB 62 Annex 13 § 8)		/ADD/ /PO/ /IM01/		
B.4.2.10. Did implementation of the project ceased after its commencement and did implementation recommence after consideration of the CDM? (EB 62 Annex 5, § 7) *Describe the reasons for ceasing the project and explain why the incentive from CDM was necessary to recommence the implementation.*	Not applicable as it is a 'new project activity' as per Annex 13, EB 62	-	OK	OK
B.4.2.11. Can the CDM involvement in the decision assessed as serious? (EB 55 Annex 1, § 104(b)–(c)) *Describe whether or not the project would have been undertaken without the incentive of the CDM.*	*Description:* The decision to proceed with the project was taken by the Board of Director of M/s Schreiber Dynamix Dairy Ltd. on 30.06.2008. The Board seriously considered CDM benefits. However Following documents / documentary evidences should be submitted: • Board resolution in which the CDM benefits were seriously considered • Copies of the Purchase Order placed for WWTP and Biogas Boiler plant *Justification of evidences:* • Board resolution in which the CDM benefits were seriously considered • Copies of the Purchase Order placed for WWTP and	/PDD/ /MD/ /ADD/ /PO/ /IM01/ /XLS/	~~CL B7~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Biogas Boiler plant • PDD • worksheet *Conclusion:*Please refer CL B7.			
B.4.3. Identification of alternatives Step 1 (in case of SSC projects pl. skip steps 1 and 2 if appropriate)				
B.4.3.1. Does the list of alternatives contain the status-quo situation, the project not undertaken as a CDM project as well as all other viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity? (EB 55 Annex 1, §§ 105–107) *Describe the steps taken to validate this issue on the basis of your local and sectoral knowledge.*	*Description:* Yes, the discussed alternatives contain the status-quo situation, the project not undertaken as a CDM project as well as all other viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity. *Justification of evidences:* PDD and conducted interview. *Conclusion:* The discussed alternatives and project activity complies with the requirement.	/PDD/ /IM01/	OK	OK
B.4.3.2. Have all realistic alternatives been identified to the project? (EB 55 Annex 1, §§ 105–107) *Describe whether the list of alternatives is credible and complete. Describe how it is validated that the alternatives are realistic.*	*Description*: Yes all discussed realistic alternatives have been identified to the project. *Justification of evidences*: PDD and conducted interview. *Conclusion*: The project activity complies with the requirement.	/PDD/ /IM01/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.3.3. Do all identified alternatives comply with enforced legislations? (EB 55 Annex 1, §§ 106(c)) *Describe the steps taken to validate this issue. Refer to the legislations.*	Description: Yes, all identified alternatives comply with enforced legislations. Justification of evidences: By means of PDD related methodologies, tools, PO, technical specifications, statutory clearances and websites of statutory bodies. Conclusion: Please refer CAR B5.	/PDD/ /AMS III. H./ /AMS I. C./ /TOOL/ /TD/ /PO/ /SC/ /IM01/ /IM02/ /moef/ /mnre/ /MEDA/	~~CAR B5.~~	OK
B.4.4. Investment analysis Step 2 *In case the investment analysis as per step 2 is chosen to justify the additionality Annex 2 "Assessment of Financial Parameters" has to be used to provide additional details of the calculation parameters..*				
B.4.4.1. Does the PDD provide evidence that the project would not be the most economically or financially attractive alternative or economically / financially feasible without the revenues from the sale of CERs? (EB 55 Annex 1, § 108)	Description: Yes, the PDD provides evidence to the effect that the project activity is not financially attractive without CER revenues. However PP needs to Satisfactory close the CAR B6 and CL B7 Justification of evidences:	/PDD/ /XLS/	~~CAR B6 and CL B7~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
	• PDD • IRR spreadsheet Conclusion: PDD, duly supported by worksheet reveal that the project would not be the economically/financially feasible Without the revenues from the sale of CERs. Nevertheless please refer CAR B6 and CL B7.			
B.4.4.2. Is an appropriate analysis method chosen for the project (simple cost analysis, investment comparison analysis or benchmark analysis)? (EB 55 Annex 1, § 108; EB 39 Annex 10) *Describe why the selected analysis method is appropriate under consideration of potential revenues and costs, potential project alternatives and potential available benchmark values.*	Description: PP has chosen benchmark analysis to demonstrate additionality of the project, which needs to be check for conformity with guidance 16 of Annex 58, EB 51. Justification of evidences: By means of PDD, related IRR spread sheet Conclusion: Please refer CAR B6.	/PDD/ /XLS/	~~CAR B6~~	OK
B.4.4.3. Is a clear, viewable and unprotected Excel spreadsheet available for the investment calculation? (EB 55 Annex 1, § 110; EB 51, Annex 58, §8) *Describe the steps taken to validate this issue.*	Description: Do not use micros in the worksheet (macros are reported to have been used in sensitivity analysis worksheet). Use simple links instead. Justification of evidences: • IRR spreadsheet and PDD Conclusion:	/PDD/ /XLS/	~~CL B7~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	A clear, viewable and unprotected excel spread sheet on investment calculations needs to be submitted, using the latest guidance given in the latest Guidance on the Assessment of Investment Analysis. All the input parameters need to be evidenced by credible and reliable documents, copies of which shall be submitted to DOE. Therefore CL B7 has been raised.			
B.4.4.4. Does the period chosen for the investment analysis reflect the technical lifetime of the project activity or in case a shorter period is chosen, is the fair value of the project activity's assets at the end of the investment analysis period (as a cash inflow) included? (EB 55 Annex 1, § 109; EB 62 Annex 5 § 3 – 4) *Describe how the technical lifetime / period chosen for calculating financial parameter(s) is reviewed and which documents were utilised in the course of review. Describe furthermore the approach used to check the inclusion of a potential fair value.*	Description: 20 year period has been chosen for investment analysis, which is in conformity with guidance 3 of Annex 58, EB 51. However PP needs to submit the proof of technical life time of equipments. Justification of evidences: ▪ IRR spreadsheet ▪ Supporting documents with regard to additionality ▪ Annex 58, EB 51 Conclusion: The period chosen for investment analysis is 20 years which is in agreement with guidance 3 of Annex 58, EB 51. Please refer CL B7.	/XLS/ /unfccc/ /ADD/	~~CL B7~~	OK
B.4.4.5. Is the (remaining) technical lifetime of existing or project equipment defined in accordance with the guidance of the *Tool to determine the remaining lifetime of equipment*?	*Description:* Not applicable as it is not a green-field project *Justification of evidence* Not applicable	/PDD/	OK-	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
(EB 50 Annex 15)	*Conclusion:* Not applicable*:*			
B.4.4.6. Is the fair value calculated in accordance with local accounting regulations (where available) or international best practice? (EB 55 Annex 1, § 109; EB 62 Annex 5, § 4) *State the accounting regulations applied for calculating the fair value and describe why these are applicable under the project specific circumstances. Describe potential mismatches between regulations and the approach applied for calculating the fair value.*	*Description*: Salvage value has been taken at 5% of the value of assets. *Justification of evidence:* ▪ PDD ▪ IRR spreadsheet *Conclusion*: Salvage value provided in the terminal year conforms to international best practices. Moreover, since the entire assets is written off fully either in the very first year or within the first 5 years and the benefits reckoned in the financial indicator calculation, the salvage value represents only potential profit expected to be realised.	/PDD/ /XLS/	~~CAR B.6~~	OK
B.4.4.7. Is the book value as well as the expectation of the potential profit or loss included in the fair value calculation? (EB 55 Annex 1, § 109; EB 62 Annex 5, § 4)	*Description*: Salvage value has been taken at 5% of the value of assets *Justification of evidence:* ▪ IRR spreadsheet *Conclusion*: Salvage value provided in the terminal year conforms to international best practices. Moreover, since the entire assets is written off fully either in the very first year or within the first	/XLS/	~~CAR B.6~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	5 years and the benefits reckoned in the financial indicator calculation, the salvage value represents only potential profit expected to be realised.			
B.4.4.8. Are depreciation and other non-cash related items added back to net profits for the purpose to calculate the financial indicator? (EB 55 Annex 1, § 109; EB 62 Annex 5, § 5)	*Description:* Book depreciation has not been provided and there were no non tax items. Hence the question of adding book depreciation and non-cash items does not arise. However depreciation seems to have been provided at 10%. Clarify the basis for considering this rate. Moreover, the income tax has been computed after providing for depreciation on straight Line basis. Please clarify whether this is in conformity with IT Act. *Justification of evidence:* ▪ IRR spreadsheet, Income Tax Act 1961 *Conclusion:* Since book depreciation has not been provided and there were not non-cash items the question of adding back depreciation and non-cash items does not arise. Nevertheless please refer CL B7.	/XLS/ /IT/	~~CL B7~~	OK
B.4.4.9. Is taxation excluded in the investment analysis or is the benchmark intended for post tax comparisons? (EB 55 Annex 1, § 109; EB 62 Annex 5, § 5)	*Description:* Benchmark is intended for post tax comparison and hence tax has been excluded in the investment analysis *Justification of evidence:* ▪ IRR worksheet	/XLS/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Conclusion: Taxation has been excluded in the investment analysis as the benchmark is intended for post tax comparison			
B.4.4.10. Were the input values used in the investment analysis valid and applicable at the time of the investment decision? (EB 55 Annex 1, § 109,112; EB 62 Annex 5, § 6) *In case the basis for input values is a Feasibility Study Report (FSR) describe how it has been ensured that the period in time between the finalisation of the FSR and the investment decision is sufficiently short so that it is unlikely that input values would have materially changed. Further confirm the consistency of values in FSR and PDD.*	*Description:* Input values used in the investment analysis were applicable at the time of investment decision or the values chosen were conservative. Input values are not based on FSR. However PP needs to address CAR B6 and CL B7. *Justification of evidence:* • IRR worksheet • Offers from Thermax • Manpower cost estimates • Thermax Letter • Annual Report • Income Tax Act,1961 • Income Tax Rules *Conclusion*: The input values used in the investment analysis are based on the input values which were available at the time of decision making. Please refer CAR B6 and CL B7.	/XLS/ /OL/ /ADD/ /IT/	~~CAR B6 and CL B7~~	OK
B.4.4.11. Is the plant load factor (PLF) chosen in a conservative manner, taking into account that the PLF may be different in the framework of demonstrating additionality and calculating the ex-ante ER? (EB 48, Annex 11)	Not applicable as it is a biogas generation project. Besides a 365 day operation is considered for ER calculation as well as financial analysis.	/PDD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.4.12. In case of project IRR: Are the costs of financing expenditures (loan repayments and interests) excluded from the calculation of project IRR? (EB 55 Annex 1, § 109; EB 62 Annex 5, § 9)	*Description:* Since the project is fully funded by equity, question of financing expenditure does not arise *Justification of evidence:* ▪ IRR worksheet ▪ Equity Certificate from the Chartered Accountant dated 09/07/2010 *Conclusion:* The project is fully financed by equity. Therefore, the question of reckoning financing expenditure does not arise.	/PDD/ /XLS/ /ADD/	OK	OK
B.4.4.13. In cases where a post-tax benchmark is applied please ensure that actual interest payable is taken into account in the calculation of income tax. (EB 55 Annex 1, § 109; EB 62 Annex 5, § 11) *As per the guidance it is recommended to select a pre tax benchmark in order to Describe the steps taken in assessing this requirment.*	*Description:* Since the project is fully funded by equity, question of financing expenditure does not arise *Justification of evidence:* ▪ IRR worksheet ▪ Equity Certificate from the Chartered Accountant dated 09/07/2010 *Conclusion:* The project is fully financed by equity. Therefore, the question of reckoning financing expenditure does not arise.	/XLS/ /ADD/	OK	OK
B.4.4.14. In case of equity IRR: Is the part of the investment costs, which is financed by equity considered as net cash outflow and is the part financed by debt excluded in net	*Description:* The project is fully funded by equity. Hence, the project IRR and equity IRR are one and the same in this instant case	/PDD/ /XLS/ /ADD/	OK	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
cash outflow? (EB 55 Annex 1, § 109; EB 62 Annex 5, § 10)	*Justification of evidence:* ▪ IRR worksheet ▪ Equity Certificate from the Chartered Accountant dated 09/07/2010 *Conclusion:* Since the project is fully funded by equity, there is no difference between equity and project IRR in this instant case. Hence, the question of reckoning only that part of investment cost financed by equity does not arise			
B.4.4.15. Is the type of benchmark chosen appropriate for the type of IRR calculated (e.g. local commercial lending rates or weighted average costs of capital for project IRR; required/expected returns on equity for equity IRR)? (EB 55 Annex 1, § 111; EB 62 Annex 5, §§12 – 18) *In case risk premiums are applied precisely describe its suitability to reflect the risks associated with the project activity, considering the project type and market situation.*	*Description :* Commercial prime lending rate has been chosen as the benchmark, which is conservative. However Section B.5 does not explain the benchmark selected its conformity to Guidance 12 and 13 of Annex 5, EB 62and the appropriateness for the financial indicator selected. *Justification of evidence* ▪ IRR worksheet ▪ Weekly Statistical Supplement of RBI (27/06/2008) ▪ PDD *Conclusion:* Project developer has chosen commercial lending rate (PLR) as the required/expected return, which is conservative, as the project had earned a return in excess of 50% on equity during 2007-08. Please refer CAR B6.	/XLS/ /ADD/ /BAL/	~~CAR B.6~~	OK
B.4.4.16. Is the benchmark value suitable for the project activity and is it reasonable to	*Description:* Yes, the benchmark – commercial lending rate prevailing at the	/IRR/ /ADD/	~~CAR B.6~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
assume that no investment would be made at a rate of a lower return than the benchmark? (EB 55 Annex 1, § 109; EB 62 Annex 5, §§13 – 18) *Describe whether it is reasonable to assume that a lower rate of return would consequently result in the baseline scenario.*	time of decision making - is suitable for the project activity and investment would not have been made at a rate lower than the benchmark. However Section B.5 does not explain the benchmark selected its conformity to Guidance 12 and 13 of Annex 5, EB 62and the appropriateness for the financial indicator selected *Justification of evidence* ▪ worksheet ▪ Weekly Statistical Supplement of RBI (27/06/2008) ▪ Extract of the of Board resolution dated 30/06/2008 *Conclusion:* Please refer CAR B6.	/MD/		
B.4.4.17. Is it ensured that the project cannot be developed by other developers than the PP? (EB 55 Annex 1 § 109; EB 62 Annex 5, §§ 13 – 14) *Describe why the benchmark does not include the subjective profitability expectations or risk profile of the project developer. If applicable assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects.*	*Description:* The project cannot be developed by other developers *Justification of evidence:* ▪ PDD *Conclusion:* Since this project involves methane recovery from the waste water from industry process and using it for captive thermal energy generation. Therefore it cannot be developed by other developers.	/PDD/ /BAL/	OK	OK
B.4.4.18. Was the benchmark consistently used in the past for similar projects with similar risks? (EB 55 Annex 1, § 112(c))	*Description:* Not applicable, as internal benchmark has not been used, though the project activity is entitled to use the internal benchmark as per Annex 5, EB 62. *Justification of evidence:*	/PDD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	▪ PDD *Conclusion:* Since internal benchmark has not been used, the question does not arise			
B.4.4.19. Does the PDD and related spreadsheets contain a sensitivity analysis and does the same contain variation of parameters which may vary throughout the project lifetime, (EB 55 Annex 1, §§ 109–110(e); EB 62 Annex 5, § 20–21) *Describe relevance of parameters used in the sensitivity analysis as well as their likeliness to vary during the project's lifetime. Parameters which are fixed on the basis of contracts, PPAs etc. may not be subject to variation and not adequate.*	*Description:* Yes, the PDD and related spreadsheets contain sensitivity analysis and they contain variation in parameters which may vary throughout the project lifetime. However please refer CAR B6. *Justification of evidence:* ▪ IRR worksheet ▪ PDD *Conclusion*: Project cost, operating cost and biogas generation – which constitute more than 20% of the project cost/revenue/ have been subjected to variation. Though project cost does not vary over the life time of the project, it has been subjected to variation as required by guidance 17 of Annex 58, EB 51. There are no other input parameters which could be subjected to variation. Please refer CAR B6.	/XLS/ /PDD/-	~~CAR B.6~~	OK
B.4.4.20. Were only variables that constitute more than 20% of either total project costs or total project revenues subjected to reasonable variation? (EB 55 Annex 1, § 109; EB 62 Annex 5, § 20)	*Description:* Yes, only variable that constitutes more than 20% of the either total project cost or total project revenues were subjected to reasonable variations.. *Justification of evidence:*	/PDD/ /XLS/-	~~CAR B.6~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
	▪ IRR worksheet ▪ PDD *Conclusion*: Project cost, operating cost and biogas generation – which constitute more than 20% of the project cost/revenue/ have been subjected to variation. There are no other input parameters which could be subjected to variation. However please refer also to CAR B6.			
B.4.4.21. Have parameters, constituting less than 20% of total project costs or revenues, been identified with potential material impact on the financial parameter? (EB 55 Annex 1, § 109; EB 62 Annex 5, § 20) *Describe whether those parameters are considered in the sensitivity analysis?*	*Description:* All the factors have been subjected to reasonable variations. *Justification of evidence:* ▪ IRR worksheet ▪ PDD *Conclusion*: Project cost, operating cost and biogas generation are the only three variables affecting additionality. There are no other input parameters which could be subjected to variation. However please refer also to CAR B6.	/XLS/ /PDD/	~~CAR B.6~~	OK
B.4.4.22. Is the range of variation reasonable in the specific context of the project activity, taking into consideration historic trends in the business sector?	*Description:* Please refer CAR B6 and CL B7. CAR B6:	/XLS/-	~~9 C AR B6 and CL B7~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
(EB 55 Annex 1, § 109; EB 62 Annex 5, § 21) *Describe whether the range of variation is appropriate with focus on historic developments, e.g. price of oil / labour etc., energy potential in the region in question.*	• Clarification is requested that sensitivity analysis is in line with Guidance 18 of Annex 58, EB 51. • Benchmark is breached with a 10% increase in biogas generation and with a 10% reduction in operating cost or investment cost. There is no statement as to why such a reduction is not possible. Instead the write up states, "Increase in 10% biogas generation is most unlikely situation to occur" and does not give any reasons therefore. The explanation does not state anything about investment cost. Since the cost estimation is based on quotations and invariably the suppliers offer substantial discounts, the project does not appear to be additional. • Possible COD reduction in anaerobic digester assumed at 80% is stated to be based on Thermax quotation. But the quotation does not explicitly provide this data Please clarify. • Cost of WWTP considered in the capital investment is very high for 1000 M^3 based on the quotation submitted for 2000 M^3 WWTP. 2000 M^3 WWTP is classified as an 'existing plant' and hence, its cost cannot form part of the capital investment. CL B7: • The plant is envisaged to be installed and it is not an existing plant. In the above background, please clarify how the O&M expenses can be based on the Accounts Statement and Annual report, other than for power and FO cost. • No of operating days has been taken at 330. Please clarify			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	whether the Dairy operates only for 330 days in a year. • Depreciation seems to have been provided at 10%. Clarify the basis for considering this rate. Moreover, the income tax has been computed after providing for depreciation on straight Line basis. Please clarify whether this is in conformity with IT Act. • In 'Savings Calculations' worksheet, biogas from a WWTP of 1000 M^3 has been accounted for and the basis is cited as 'Biogas quantity based calculations as per existing waste water treatment plant'. Please clarify whether the 1000 M^3 WWTP is 'existing' or 'proposed'. • Total biogas generation given vide cell C22 of 'Savings Calculations' does not appear to be correct. • Net calorific value given in cell C25 differs from the MITCON report • Power consumption for WWTP plant is stated to be 1,508,610 kWh per annum. As per the quotation given by Thermax the power, consumption should be 1,173,522 kWh. Clarify the reasons for the high power consumption as compared to quotation. Justification of evidence: ▪ IRR worksheet ▪ Wholesale Price Index (Office of the Economic Advisor) *Conclusion:* Please refer CAR B6 and CL B7			
B.4.5. **Barrier analysis Step 3 or SSC additionality assessment**				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.5.1. Are there any barriers given which have a clear and direct impact on the financial returns of the project? (EB 55 Annex 1, §§ 115, 134, 137) *In case of LSC projects those issues cannot be considered as barriers and shall be assessed in the investment analysis. In case of SSC projects the same fundamentals as for LSC projects shall apply, i.e. the assessment of the investment barrier according to EB 51 Annex 58.*	*Description:* The technological barriers have a direct impact on the finance model of the project activity. The technological barriers need to be revised as per paragraph 115 of VVM manual. Further PP is requested to clarify the barrier due to prevailing practice, in particular, if there are significant differences between wastewater treatment system and biogas recovery and use in dairy industries and other manufacturing (process) industries as the technology for biogas recovery and its thermal/electrical use is domestic, used in other industrial sectors and in other regions in the country. Explanation is sought that why the sector is more appropriate? Moreover, as the technology is widely observed and commonly carried out in defined region and sector, PP is requested to provide the essential distinctions between the project activity and other similar activities as well as other industrial sectors. (Please refer 118 paragraph of VVM). Please refer CAR B8. *Justification of evidence:* ▪ PDD *Conclusion:* Please refer CAR B8	/PDD/	~~CAR B8~~	OK
B.4.5.2. Are the barriers described risk related (e.g. technology failure, other performance related risks)? (EB 55 Annex 1, §§ 116, 134, 137) *Are there other barriers or barriers due to prevailing practice existent which would have led to higher emissions?*	*Description* : Please refer B.4.5.1 *Justification of evidence:* ▪ PDD *Conclusion:* Please refer CAR B8	/PDD/	~~CAR B8~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.5.3. Has the unavailability of means of finance for the project been described and adequately substantiated? Do evidences doubtlessly prove that the financing of the project was assured only due to the benefit of the CDM? (EB 55 Annex 1, §§ 116, 137, EB 50 Annex 13, § 9)	*Description* : Please refer B.4.5.1 *Justification of evidence:* ▪ PDD *Conclusion:* Please refer CAR B8	/PDD/	~~CAR B8~~	OK
B.4.5.4. How is it justified and evidenced that the barriers given in the PDD are real? (EB 55 Annex 1, § 116(a))	*Description* : Please refer B.4.5.1 *Justification of evidence:* ▪ PDD *Conclusion:* Please refer CAR B8	/PDD/	~~CAR B8~~	OK
B.4.5.5. How is it justified that one or a set of real barriers prevent(s) the implementation of the project activity and do not prevent the implementation of at least one of the alternatives? (EB 55 Annex 1, § 116(b))	*Description* : Please refer B.4.5.1 *Justification of evidence:* ▪ PDD *Conclusion:* Please refer CAR B8	/PDD/	~~CAR B8~~	OK
B.4.5.6. Does the review of relevant background information on the nature of the company (ies) and entity (ies) involved in the financing and implementation of the project sufficiently justify that the barriers related to the lack of access to capital,	*Description* : Please refer B.4.5.1 *Justification of evidence:* ▪ PDD *Conclusion:* Please refer CAR B8	/PDD/	~~CAR B8~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
technologies and skilled labour are real? (EB 50 Annex 13, § 4)				
B.4.5.7. Has it been demonstrated in an objective way how the CDM alleviates each of the identified barriers to a level that the project is not prevented anymore from occurring by any of the barriers? (EB 50 Annex 13, § 5)	*Description* : Please refer B.4.5.1 *Justification of evidence:* ▪ PDD *Conclusion:* Please refer CAR B8	/PDD/	~~CAR B8~~	OK
B.4.5.8. Would provision of additional financial means lead to the mitigation of the barrier(s) demonstrated? (EB 50 Annex 13, § 7) *Describe why provision of additional financial means would not lead to mitigation of the barrier(s) demonstrated and hence analysing the project's additionality within the framework of an investment analysis is inappropriate. .*	*Description* : Please refer B.4.5.1 *Justification of evidence:* ▪ PDD *Conclusion:* Please refer CAR B8	/PDD/	~~CAR B8~~	OK
B.4.6. Common practice analysis Step 4 (in case of SSC projects skip this step)				
B.4.6.1. Is the defined region for the common practice analysis appropriate for the technology/industry type? (EB 55 Annex 1, § 120(a)) *Describe why the project activity is not common practice in a*	*Description:* All the companies in the dairy industry in the entire country have been considered for the common practice analysis. *Justification of evidences:*	/PDD/ /IDA/	~~CAR B6~~ ~~CL B7~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
transparent and unambiguous manner. If a region other than the entire host country is chosen, describe why this region is more appropriate.	Letter from IDA *Conclusion:* All companies in the Dairy Industry in India have been considered for the common practices analysis, which is appropriate. Nevertheless, CAR B6 and CL B7 have been raised in context of additionality.			
B.4.6.2. To what extent similar projects have been undertaken in the relevant region? (EB 55 Annex 1, § 120(b))	*Description:* None of the companies have installed UASB reactor for treating mother liquor in dairy industry in the country. *Justification of evidences:* Letter from IDA and PDD *Conclusion:* IDA letter evidences that no company in the dairy industry had installed UASB reactor for treating mother liquor in the country. Nevertheless, CAR B6 and CL B7 have been raised in context of additionality.	/PDD/ /IDA/	~~CAR B6~~ ~~CL B7~~	OK
B.4.6.3. In case similar projects are identified, are there any key differences between the proposed project and existing or ongoing projects and what kind of differences are observed? (EB 55 Annex 1, § 120(c))	*Description:* No similar projects are identified. *Justification of evidences:* IDA Letter and PDD *Conclusion:* IDA letter evidences that no company in the dairy industry had installed UASB reactor for treating mother liquor in the country.	/PDD/ /IDA/	~~CAR B6~~ ~~CL B7~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Nevertheless, CAR B6 and CL B7 have been raised in context of additionality.			
B.5. Ex-Ante Calculation of GHG Emission Reductions *It is assessed whether the ex-ante calculations of project emissions, baseline emissions, leakage emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified. Furthermore calculation of emission reductions shall be assessed.*				
B.5.1. Are the equations applied correctly according to the applied approved methodology? (EB 55 Annex 1, §§ 67(c), 89–90, 92) *Describe clearly the steps taken to assess whether the methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions. Further take into consideration that all estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.*	☐ The equations applied for calculation are correctly applied according to the approved methodologies. ☒ The following mistakes have been identified in this context: *Description:* The PP has described in the PDD about determination of GHG emission reductions according to applied methodology "AMS III. H. "Methane Recovery in Wastewater Treatment" using Para 18 for baseline and Para 29 for project activity emissions as well as related subsequent paragraphs. While baseline and project emissions are calculated using Para 18 and 43 of applied methodology AMS I. C. "Thermal energy production with or without electricity" respectively. DOE checked the methodological choices described in the section B.6.1 of the PDD and found that methodological choices does not provide information and justification on the baselines and project emissions which are included/excluded as per methodology AMS III.H version 16 has not been clearly described. Also only references to the tools for the	/PDD/ /AMS III. H./ /AMS I. C./ /TOOL/ /XLS/	~~CAR B10~~ ~~CAR B11~~ ~~CAR B13~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	calculations of project emissions due to onsite fossil fuel and electricity consumption are provided. Further methodological choices for project emissions due to diesel consumptions in DG sets for electricity generation for operation of wastewater treatment facility in case of grid failure is not provided as required by methodology. *Justification of evidences:* PDD, applied methodologies and tools. *Conclusion:* Please refer to the CAR B10, CAR B11 and B13.			
B.5.2. In case the methodology allows for different methodological choices, are the equations applied properly justified and have they been used reflecting the other methodological choices (i.e. baseline identification)? (EB 55 Annex 1, §§ 90–91) *Assess the correct selection and application of methodological choices. Describe whether proper justification has been provided (based on the choice of the baseline scenario, context of the project activity and other evidence provided) and whether the correct equations have been used reflecting the relevant methodological choices.*	*Description*: The project activity follows equations as prescribed by the methodology and respective tools correctly. MCF factors are chosen in line with the AMS III H correctly. *Justification of evidences*: PDD, applied methodologies and tools and technical specifications of project activity. *Conclusion*: No CAR/ CL is necessary.	/PDD/ /AMS III. H./ /AMS I. C./ /TOOL/ /TD/ /IM01/ /IM02/	OK	OK
B.5.3. Have conservative assumptions been used when calculating the project emissions? (EB 55 Annex 1, §§ 90–91) *Describe clearly the steps taken to assess whether all the*	*Description:* No. Conservative assumptions have not been used when calculating the project emissions. Methodological choices for project emissions due to onsite diesel consumptions in DG sets for electricity generation for operation of wastewater treatment facility in case of grid failure are missing. Further during site visit it was	/PDD/ /AMS III. H./ /AMS I.	~~CAR B10 and CAR B11~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
assumptions and data used by the PP are listed in the PDD including references and sources and are conservatively interpreted in the PDD.	observed that PP was doing methane recovery and flaring using 3 number of UASB installed at existing wastewater treatment system in pre-project activity. Baseline emissions from the same quantity of biogas which was now used in dual fuel fired boilers have not been excluded from baseline emissions under AMS I.C. *Justification of evidences:* PDD, applied methodologies and tools and technical specifications of project activity and conducted interviews. *Conclusion:* Please refer to the CAR B10 and CAR B11.	C./ /TOOL/ /TD/ /IM01/ /IM02/		
B.5.4. Does the implementation of the project activity lead to GHG emissions within the project boundary which are expected to contribute more than 1% of the overall expected average annual emission reductions, which are not addressed by the methodology? (EB 55 Annex 1, § 77)	Description: Not applicable. Please refer to section B.5.1. of this table. Justification of evidences: Please refer to section B.5.1. of this table. Conclusion: Please refer to section B.5.1. of this table.	/PDD/ /AMS III. H./ /AMS I. C./ /TOOL/	~~CAR B10~~	OK
B.5.4.1. Has a plant load factor (PLF) been defined ex-ante and considered for determination of baseline emissions? (EB 48 Annex 11, §§ 1, 3–4) *Describe why the PLF is conservative in the framework of calculating emissions reductions and whether the PLF is the same in the framework of demonstrating additionality by applying the investment analysis. Note, in order to be conservative in both cases the PLF may be different.*	*Description:* The possible COD reduction in anaerobic digester is assumed as 80% and boiler efficiency 89% *Justification of evidences:* The possible COD reduction in anaerobic digester value is assumed as 80% which is based on the Thermax quotation and boiler efficiency on technical specifications of baseline boiler. *Conclusion:* However, Please refer to the CAR B6 sub-point 8.	/ADD/ /XLS/ /PDD/	~~CAR B6~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
B.5.5. Are all data sources and assumptions appropriate and parameters which remain fixed throughout the crediting period correct, applicable to the project and will lead to a conservative estimation of emission reductions? (EB 55 Annex 1, § 91) *Describe clearly the steps taken to assess whether the values used for the fixed parameters are considered reasonable, correct and applicable in the context of the project activity. Check esp. chapter 6.2 of the PDD.*	*Description:* As checked from the section B.6.2. of the PDD, the parameters which remain fixed for the entire crediting period are instrumental in determination of the emission reductions. *Justification of evidences:* PDD, applied methodologies and tools and plant data. *Conclusion:* DOE checked the PDD and found that the parameters which are monitored are also included in section B.6.2. of PDD. Further efficiency of the baseline boilers is not in line with Para 26 of methodology AMS I.C. Please refer to the CAR B12 and B13.	/PDD/ /AMS III. H./ /AMS I. C./ /TOOL/ /TD/ /XLS/	~~CAR B12, B13~~	OK
B.5.6. Are all ex-ante calculation values for monitoring parameters (as defined as per chapter B.7.1) reasonable? (EB 55 Annex 1, § 91) *Describe clearly the steps taken to assess whether the values used for the monitoring parameters are considered reasonable, applicable and conservative in the context of the project activity*	☐ All "Values of data to be applied for the purpose of calculating expected emissions reductions" are considered to be reasonable, applicable and conservative. ☒ The following mistakes have been identified in this context: *Description:* No. Ex-ante values are taken from applied methodologies and tools, technical specifications of the project activity and plant historic data. *Justification of evidences:* PDD, applied methodologies and tools, technical specifications of the project activity and plant data. *Conclusion:* Please refer to the CAR B12.	/PDD/ /AMS III. H./ /AMS I. C./ /TOOL/ /TD/ /XLS/	~~CAR B12~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
B.5.7. Are the emission reductions real, measurable and give long-term benefits related to the mitigation of climate change. *Describe the steps taken to validate this issue.*	*Description:* Not OK *Justification of evidences:* PDD, applied methodologies and tools and further supporting documents. *Conclusion:* Please refer legislations CAR B5, B6, B8, and CL B9, B7	/PDD/ /PO/ /AMS III. H./ /AMS I. C./ /TOOL/ /ADD/	~~CAR B5, B6, B8, and CL B9, B7~~	OK
B.6. Monitoring of Emission Reductions *It is assessed whether the monitoring plan is appropriate for the project activity and in line with the applied methodology.*				
B.6.1. Are all monitoring parameters required by the applied methodology contained in the monitoring plan? (EB 55 Annex 1, §§ 67(e), 121, 123(a), 124) *Assess whether all applicable parameters listed in the methodology are included in the monitoring plan.* *Pl. check further whether the selection of parameters not to be monitored (section B.6.2) is appropriate and in line with the applied methodology.* *In case of different approaches can be chosen acc. to the methodology assess whether the selection of parameters is*	*Description:* All monitoring parameters required by the applied methodologies are not contained in the monitoring plan. *Justification of evidences:* PDD, applied methodologies, tools and site visit. *Conclusion:* Please refer to the CAR B14.	/PDD/ /AMS III. H./ /AMS I. C./ /TOOL/ /IM01/ /IM02/	~~CAR B14~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
justified and correct.				
B.6.2. Are the means of monitoring of all parameters contained in the monitoring plan feasible and in accordance with the requirements of the applied methodology? (EB 55 Annex 1, § 123(a)–(b), 124) *Assess whether the provided information for all parameters w.r.t.* *a) Label (name of the data / parameter)* *b) data unit* c) *description* d) *source of data* e) *measurement equipment / method / procedure* f) *monitoring frequency* g) *QA/QC procedures* *are appropriately described and in compliance with the requirements of the methodology.*	*Description:* Monitoring means for all parameters are not feasible. . *Justification of evidences:* The site visit and interviews with the PP was considered in this regard with respect to the description provided in PDD compared against the requirement stipulated under applied methodology "AMS III. H. "Methane Recovery in Wastewater Treatment" and AMS I. C. "Thermal energy production with or without electricity". *Conclusion:* Please refer to the CAR B14.	/PDD/ / AMS III. H./ /AMSI. C./ /TOOL/ /IM01/ /IM02/ /ISO/	~~CAR B14~~	OK
B.6.3. Have all means of implementing the monitoring plan, e.g. equations necessary for ex-post emission reduction calculation, been described clearly and in line with the methodology?	*Description: No.* *Justification of evidences:* The site visit and interviews with the PP was considered in this regard with respect to the description provided in PDD compared against the requirement stipulated under applied methodology "AMS III. H. "Methane Recovery in	/PDD/ / AMS III. H./ / AMS I. C./	~~CAR B10~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
(EB 55 Annex 1, §§ 123(b), 124) *Check whether all necessary equations have been provided in the PDD. Pl. consider that ex-post and ex-ante calculations might be different.* *Please consider that additional equations might be necessary to calculate auxiliary parameters.*	Wastewater Treatment" and AMS I. C. "Thermal energy production with or without electricity". *Conclusion:* Please refer to the CAR B10.	/TOOL/ /IM01/ /IM02/ /XLS/		
B.6.4. Is it likely that the monitoring arrangements described in the PDD can properly be implemented in the context of the project activity? (EB 55 Annex 1, § 124(c)) *Assess whether the described monitoring arrangements are sufficient and realistic to enable a thorough monitoring. Pl. consider also special monitoring conditions, e.g. downtimes of monitoring equipment etc.*	*Description:* Please refer point B.6.2 of this table for more details. *Justification of evidences:* Please refer point B.6.2 of this table. *Conclusion:* Please refer point b.6.2 of this table.	/PDD/ / AMS III. H./ / AMS I. C./ /TOOL/ /IM01/ /IM02/ /LOG/	~~CAR B14~~	OK
B.6.5. Are the QA/QC procedures appropriate sufficient to ensure the emission reductions achieved from the project activity can be reported ex-post and verified? (EB 55 Annex 1, § 124(b)) *Please consider the description given in section B.7.2. Describe which QA/QC provisions are considered. Address Quality Management System provisions, calibration and*	*Description:* QA/QC procedures are not sufficient with respect to Measurement methods and procedures including accepted industry standards or national or international standards. *Justification of evidences:* The PDD is insufficient for measurement methods and procedures including accepted industry standards or national or international standards which will be applied, which measurement equipment is used, how the measurement is undertaken, source of data to be used, which calibration	/PDD/ /ORG/ /IM02/ /IM03/ /ISO/	~~CAR B14~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
maintenance of equipment. Address further any review procedures.	procedures are applied, what is the accuracy of the measurement method, who is the responsible person / entity that should undertake the measurements and what is the measurement intervals. *Conclusion:* Please refer to the CAR B14.			
B.6.6. Are procedures identified for data management? (EB 55 Annex 1, § 124(b)) *Check whether appropriate provisions are considered for data management including responsibilities, what records to keep, storage area of records and how to process performance documentation* *Check further the data archiving provisions for the project activity and ensure that provisions are made to archive data for the whole crediting period + 2 years.*	*Description:* No. Please refer section B.6.2 of this table for more details on monitoring and recording procedures. Please refer section B.6.5 of this table for the responsibilities related to monitoring and QA/QC procedures *Justification of evidences:* The site visit and interviews with the PP were considered in this regard with respect to the provisions stipulated in PDD besides provided organization chart. *Conclusion:* Please refer to the CAR B14.	/PDD/ /ORG/ /IM02/ /IM03/	~~CAR B14~~	OK
C. Duration of the Project/ Crediting Period *It is assessed whether the temporary boundaries of the project are clearly defined.*				

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
C.1. Is the project's starting date clearly defined and evidenced? (EB 55 Annex 1, § 99) *Check whether the starting date is correct. Apply the definition of the project starting date as per the "Glossary of CDM terms".*	*Description:* Yes, the starting date of project activity is 2008-08-22 which is based on the Date of Purchase Order for major equipments. *Justification of evidences:* Copy of PO placed to Thermax limited for mother liquor treatment and boiler fuel conversion system is made available to the assessment team. *Conclusion:* The project activity complies with the requirement.	/PDD/ /PO/ /SD/	OK	OK
C.2. Is the project's operational lifetime clearly defined and evidenced? *Check whether the project lifetime is correctly defined. Consider the guidance on the assessment of investment analysis (annex to the additionality tool).* *Check in case of phased implementation this has been reflected throughout the whole PDD incl. the financial assessment, if applicable.*	*Description:* Yes, the project's operational lifetime is clearly defined as 25 years. *Justification of evidences:* technical report has been submitted by PP to assessment team to confirm the project's operational lifetime. *Conclusion:* The project activity complies with the requirement.	/PDD/ /ADD/	OK	OK
C.3. Is the start of the crediting period clearly defined and reasonable? *Check whether the envisaged starting date of the crediting period is realistic, taking into consideration the times needed for validation and registration.*	*Description:* The start of crediting period is defined in the PDD as 2010-07-01. *Justification of evidences:* The description provided in the PDD was verified and resulted in CAR. *Conclusion:* please refer to the CAR C1.	/PDD/	~~CAR C1~~	OK
D. Environmental Impacts *Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an*				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
EIA should be provided to the DOE.				
D.1.1. Are there any Host Party requirements for an Environmental Impact Assessment (EIA)? (EB 55 Annex 1, §§ 131–133) *Check the host party regulations, regarding EIA.*	*Description:* There are no host country requirements established to be conducted an Environmental Impact Assessment (EIA) for wastewater treatment and biogas recovery and its use for energy purpose projects. *Justification of evidences:* The wastewater treatment and steam generation project activities do not fall under the purview of Environmental Impact Assessment notification (dated 14th September, 2006) released by the Ministry of Environment and Forests (MoEF), Government of India (GOI). *Conclusion:* The project activity complies with the requirement.	/moef/	OK	OK
D.1.2. In case an Environmental Impact Assessment (EIA) is requested by the host party, has it been carried out and if applicable duly approved? (EB 55 Annex 1, §§ 131–133) *Check the EIA and its approval, if applicable.*	*Description:* Environmental Impact Assessment (EIA) is not requested by the host party. Nevertheless demonstration on how project activity is compiling the statutory requirements is missing in PDD. *Justification of evidences:* PDD and statutory clearances. Extract of CAR D1: Demonstration on how the project activity is compiling with the statutory requirements below is missing in the PDD: • Section 25 of the Water (Prevention and Control of pollution) act 1974 • Section 21 of the Air (Prevention and Control) act 1981 • Rule 5 of the Hazardous wastes (Management, Handling and	/moef/ /SC/	~~CAR D1~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	transboundary movement) • Boiler act, 1923 *Conclusion:* Please refer to the CAR D1.			
D.1.3. Has an analysis of the environmental impacts of the project activity been sufficiently described and in line with the host party environmental legislation? (EB 55 Annex 1, §§ 130–132) *Check the PDD (section D). Check whether the project will create any adverse environmental effects.* *Check the relevant national environmental legislation.*	*Description:* Not applicable. Please refer to section D.1.1 of this table. *Justification of evidences:* Please refer to section D.1.1 of this table. *Conclusion:* The project activity complies with the requirement.	/moef/	OK	OK
D.1.4. Are transboundary environmental impacts considered in the analysis? (EB 55 Annex 1, §§ 131–133) *Check the documents and local official sources / expertise regarding transboundary environmental impacts.*	*Description:* Not applicable. Please refer to section D.1.1 of this table. *Justification of evidences:* Please refer to section D.1.1 of this table. *Conclusion:* The project activity complies with the requirement.	/moef/	OK	OK
E. Stakeholder Comments *The DOE should ensure that stakeholder comments have been invited with appropriate media and that due account has been taken of any comments received.*				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
E.1. Have relevant local stakeholders been invited to consultation prior to the publication of the PDD? (EB 55 Annex 1, § 128) *Check by means of document review and interviews with local stakeholders if and when a local stakeholder consultation process has been carried out.*	*Description:* Yes. The local stakeholders consultation meeting was conducted on 2008-12-12 with a prior intimation by personal invitations dated 2008-12-04. The stakeholders identified were local people, equipment suppliers and employees from Dynamix Dairy. The PDD was published 2010-02-09 to 2010-03-10, after the local stakeholder consultation meeting. *Justification of evidences:* Documents for local stakeholders consultation including invitation later, agenda of meeting, list of stakeholders invited and answered questionnaire by stakeholders was made available to DOE. *Conclusion:* However, please refer to the CAR E1.	/PDD/ /LSC/ /IM01/ /IM02/ /IM03/ /unfccc/	~~CAR E1~~	OK
E.2. Can the local stakeholder consultation process be assessed as adequate? (EB 55 Annex 1, § 129(a)–(c)) *Describe what assessment steps have been undertaken to assess the adequacy of the stakeholder consultation process. Give a final opinion on the adequacy.* *Please consider the following requirements in this context:* *(a) Comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity, have been invited;* *(b) The summary of the comments received as provided in the PDD is complete;* *(c) The project participants have taken due account of any*	*Description:* The local stakeholder's consultation meeting covered various topics covering CDM and its benefits and introduction from the PP about their environmental programmes and circulation of questionnaire to be filled by stakeholders. *Justification of evidences:* The description provided in the PDD and documents submitted w.r.t. local stakeholder consultation process was verified. Please refer below documents was reviewed by assessment team. • Local Stakeholder Consultation Invitation letter from Schreiber Dynamix Dairies Ltd. to various stakeholders related to the project activity dated 04/12/2008 • Attendance Sheet dated 12/12/2008 • Photographs of the stakeholder consultation meeting • Filled up questionnaire from stakeholders who attended the meeting	/PDD/ /LSC/ /IM01/ /IM02/ /IM03/	~~CAR E1~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
comments received and have described this process in the PDD.	• Minutes of Meeting from the local stakeholder consultation meeting arranged at the project site on 12/12/2008 *Conclusion:* Please refer to the CAR E1 as section E.1 of PDD needs to be revised for the clear and transparent description on how local stakeholders identified, mode of invitation, facilities and time provided for comment submission and how due account of the comments received during local stakeholder consultation process. Refer "Cp SSC-CDM-PDD filling guidelines".			

ANNEX 2: ASSESSMENT OF BASELINE IDENTIFICATION

Table A-2: Assessment of Baseline Identification (EB 55 Annex 1 §§83 – 86)

☐	Baseline is not identified
☒	Assessment of baseline see below

Baseline Alternatives identified	In line with the Methodology?	Eliminated	Reasons for elimination / non-elimination from list of alternatives	Evidence used	DOE Assessment	
					Appropriateness of elimination	Assessment of validation team (results and means of assessment)
For CO_2: Substitation of fossil fuel that would have been used in the absence of the project activity times an emission factor by renewable the energy source biogas.	☒	☐	Predefined as per AMS-I.C	/AMS I.C/ /IPCC/ /PDD/ /moef/ /mpcb/ /mnre/ /TD/ /SC/ /PO/ /ADD/ /OL/	☐	The baseline of the project activity is predefined in the corresponding methodology. As per paragraph 16 of AMS I.C. version 19, "*For renewable energy technologies that displace technologies using fossil fuels, the simplified baseline is the fuel consumption of the technologies that would have been used in the absence of the project activity times an emission factor for the fossil fuel displaced*". As per onsite visit and document check DOE can confirm that FO fired boilers have been operated and according to IPCC 2006 the corresponding emission factor is 77.4 tCO_2/TJ

For methane: Introduction of a subsequent stage of wastewater treatment with biogas recovery and combustion to an anaerobic wastewater treatment system without biogas recovery. Release of methane from an existing lagoon.	☒	☐	Predefined as per AMS-III.H	/AMS III.H/ /TD/ /SC/ /PO/ /ADD/ /OL/	☐	The baseline of the project activity is predefined in the corresponding methodology. As per corresponding methodology AMS III. H version 16 the baseline is identified as per paragraph 1 (f) "*Introduction of a sequential stage of wastewater treatment with biogas recovery and combustion, with or without sludge treatment, to an anaerobic wastewater treatment system without biogas recovery (e.g. introduction of treatment in an anaerobic reactor with biogas recovery as a sequential treatment step for the wastewater that is presently being treated in an anaerobic lagoon without methane recovery).*" DOE as per onsite visit can confirm that the mother liquor was treated in a lagoon and methane released to atmosphere. Further DOE can confirm by onsite visit and document check that flares have been operated to combust methane from existing 2000 m³ WWTP and two FO fired boilers are operated. Both will remain. The mother liquor is now treated in anaerobic digesters and the outflow in further treatment stages and therefore the biogas digester system is a sequential stage of wastewater treatment with biogas recovery and combustion in boilers or flares. Therefore the baseline scenario is the continuation of the existing anaerobic wastewater treatment system, without methane recovery and combustion.

ANNEX 3: ASSESSMENT OF FINANCIAL PARAMETERS

Table A-3: Assessment of Financial Parameters (EB 55 Annex 1, §§ 111, 112, 114/ in case financial parameters stem from FSR §113,)

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
Plant capacity - Mother liquor - Waste water (existing WWTP) - Waste water (prop. WWTP)	 - 45 - 2000 - 1000	 M^3/day M^3/day M^3/day	- Thermax techno commercial proposal dated 06/03/2008 (p.3); - Project commissioning certificate dated16/08/2006 - Thermax Techno	/OL/ /CC/	☒	The plant production capacities and Mother liquor generation calculations of the plant are based on the Thermax Technical Offer: Wws:Tmn:DDIL: Biogas: TCOff-05 dated 06-Mar-08 (Refer: Thermax Offer-Design Basis, Page No.3); Waste water generation from existing WWTP is based on Project Commissioning Certificate dated 16-Aug-06; and waste water generation from the proposed WWTP is based on Thermax Technical Offer: Wws:Tmn:DDIL: Biogas:TCOff-05 dated 06-Mar-08. All these data were available at the time of decision making. The relevant documents were checked and the values have been found to be

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
			Commercial proposal dated 07/02/2008			correct.
Mother liquor COD	390,000	Mg/l.	MITCON laboratory test report dated 07/02/2008	/ADD/	☒	COD of mother liquor is based on the MITCON laboratory test report dated 07/02/2008. The information was available to the project developer at the time of decision making. The report was checked and the value was found to be correct.
COD reduction efficiency of Mother Liquor Digester	80	percent	Thermax techno commercial proposal dated 06/03/2008 (p.3)	/OL/	☒	This value is based on Thermax Technical Offer: Wws: Tmn: DDIL: Biogas: TCOff-05 dated 06-Mar-08 (please refer: Thermax Offer-Design Basis, Page No.3, Design specification. (Calculated based on Thermax offer (Considered inlet COD 400,000 mg/l and outlet COD 80,000 mg/l). Thus, 320,000 COD reduction which is 80% of inlet COD. The values have been checked and found to be correct
COD reduction from Anaerobic digesters (WWTP)	54	percent	Average based on operations since 2006	/ADD/	☒	This value is average based on the operation of the plant since August 2006 to March 2008. The company has furnished the data in excel worksheet and the values have been checked and found to be correct
Methane (CH_4) producing capacity of the wastewater	0.25	Kg CH_4/ Kg COD	IPCC default value - AMS III H Version 16 (p.6)	/AMS III. H/	☒	Methane generation per kilogram of COD reduced is based on the IPCC default value given in the methodology AMS III H version 16. The values have been checked and found to be correct

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
Methane content of Biogas	65	percent	MITCON laboratory test report dated 07/02/2008	/ADD/	☒	Methane content of biogas is based on the MITCON laboratory test report dated 07/02/2008. The information was available to the project developer at the time of decision making. The report was checked and the value was found to be correct. Due to this and as MITCON is an independent third party laboratory DOE considers the value applied as reasonable and plausible..
Density of Biogas	1.089	Kg/m^3	Thermax techno commercial proposal dated 06/03/2008 (p.11 and 12)	/OL/	☒	Density of biogas is based on Thermax Technical Offer: Wws: Tmn: DDIL: Biogas: TCOff-05 dated 06-Mar-08. The information was available to the project developer at the time of decision making. The report was checked and the value was found to be correct. Further this was also crosschecked from http://www.engineeringtoolbox.com/gas-density-d_158.html.
NCV of Biogas	5320	$Kcal/m^3$	MITCON laboratory test report dated 07/02/2008	/ADD/	☒	NCV of biogas is based on the MITCON laboratory test report dated 07/02/2008. The information was available to the project developer at the time of decision making. The report was checked and the value was found to be correct. Further this is also compaired with IPCC and other MITCON report and found appropriate based on verification team's local technical and sectoral expertise.
NCV of Furnace Oil	9650	Kcal/kg.	Energy Conservation in Utilities – section 2 (p.45)	/ADD/	☒	The information has been sourced from Energy Conservation in Utilities. The publication is available in the website http://www.pcra.org/English/latest/book/02-Chapter%20-%202.pdf.

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
						This is a reputed laboratory of India and comes under Ministry of Petroleum, Government of India
Electrical operating load of Mother Liquor Treatment Plant (MLTP) (Continuous operation)	30.02	KW	Thermax techno commercial proposal dated 06/03/2008 (p.6 and 17)	/OL/	☒	The data is based on Thermax Technical Offer: Wws: Tmn: DDIL: Biogas: TCOff-05 dated 06-Mar-08 (Page No.6 - Operating load for MLTP and Page.17 - Operating load of Booster pump (11.25 KW = 15 HP * 0.75). The information was available to the project developer at the time of decision making. The report was checked and the value was found to be correct
Electrical operating load of Digester recirculation pump	30.00	KW	Thermax techno commercial proposal dated 06/03/2008 (p.6)	/OL/	☒	The data is based on Thermax Technical Offer: Wws: Tmn: DDIL: Biogas: TCOff-05 dated 06-Mar-08 (Page No.6 - Operating load for Digester recirculation pump.) The information was available to the project developer at the time of decision making. The report was checked and the value was found to be correct
Operating hours of Digester recirculation pump	22	hours	Thermax letter dated 02/07/2010	/ADD/	☒	The number of hours of operation has been given by Thermax. Though this was assumed in the calculation, during the validation explanation was sought on the hours of working, in response to which this letter was issued on 02/07/2010 by Thermax, which is the technology provider and machinery supplier for the project. Though the letter is post dated to decision making, this information was available at the time of decision making as the projections could not have been prepared without this information. The information was checked and the value was found to be correct

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
Electrical operating load of sludge disposal pump	3.7	KW	Thermax techno commercial proposal dated 06/03/2008 (p.6)	/OL/	☒	The data is based on Thermax Technical Offer: Wws: Tmn: DDIL: Biogas: TCOff-05 dated 06-Mar-08 (Page No.6 - Operating load for Sludge disposal pump). The information was available to the project developer at the time of decision making. The report was checked and the value was found to be correct
Operating hours of sludge disposal pump	22	hours	Thermax letter dated 02/07/2010	/ADD/	☒	The number of hours of operation has been given by Thermax. Though this was assumed in the calculation, during the validation explanation was sought on the hours of working, in response to which this letter was issued on 02/07/2010 by Thermax, which is the technology provider and machinery supplier for the project. Though the letter is post dated to decision making, this information was available at the time of decision making as the projections could not have been prepared without this information. The information was checked and the value was found to be correct
Electrical operating load of caustic tank mixer	0.37	KW	Thermax techno commercial proposal dated 06/03/2008 (p.6)	/OL/	☒	The data is based on Thermax Technical Offer: Wws: Tmn: DDIL: Biogas: TCOff-05 dated 06-Mar-08 (Page No.6 - Operating load for caustic tank mixer). The information was available to the project developer at the time of decision making. The report was checked and the value was found to be correct
Operating hours of caustic tank mixer	20	Hours	Thermax letter dated 02/07/2010	/ADD/	☒	The number of hours of operation has been given by Thermax. Though this was assumed in the calculation, during the validation

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
						explanation was sought on the hours of working, in response to which this letter was issued on 02/07/2010 by Thermax, which is the technology provider and machinery supplier for the project. Though the letter is post dated to decision making, this information was available at the time of decision making as the projections could not have been prepared without this information. The information was checked and the value was found to be correct
Electrical operating load of 1000 m³ WWTP	153.49	KW	Thermax techno commercial proposal dated 07/02/2005 (p.25)	/OL/	☒	The data is based on Thermax Offer: Wws: DDIL: ETP: 2000: TCOff-03 dated07-Feb-05, (Page no: 25). Though the information is based on 2005 quotation, there has been no change in the electrical load and hence accepted. The information was available to the project developer at the time of decision making. The report was checked and the value was found to be correct
Operating load of existing 2000 m³ WWTP	174.32	KW	Thermax techno commercial proposal dated 07/02/2005 (p.12)	/OL/	☒	The data is based on Thermax Offer: Wws: DDIL: ETP: 2000: TCOff-03 dated07-Feb-05, (Page no: 12). Though the information is based on 2005 quotation, there has been no change in the electrical load and hence accepted. However, this cost has not been reckoned in the financial indicator as the project developer would be operating this WWTP even without the project as it is an existing plant.
Connected load of boiler (Blowers)	30	KW	Thermax techno commercial proposal	/OL/	☒	The data is based on Thermax Technical Offer: Wws: Tmn: DDIL:

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
			dated 06/03/2008 (p.14)			Biogas: TCOff-05 dated 06-Mar-08 (Page No.14). The information was available to the project developer at the time of decision making. The report was checked and the value was found to be correct
Thermal efficiency of boiler	89	percent	Instruction Manual (P. 5)	/ADD/	☒	This is based on the Instruction Manual for Sheelmax Boiler, Make: Thermax, Technical Specifications (p.5). The information was available to the project developer at the time of decision making. The report was checked and the value was found to be correct
Cost of electricity	4.06	Rs/kWh	Annual Report -2007-08	/ADD/	☒	Electricity tariff has been sourced from the Annual Report of the Company for the year 2007-08. The information was available to the project developer at the time of decision making. The report was checked and the value was found to be correct. As the Annual Report is verified by independent third party chartered account and reported to government DOE considers this source as reliable and therefore concludes the applied value as appriate and reasonable.
Cost of furnace oil	21.45	Rs./liter	Annual Report -2007-08	/ADD/	☒	Furnace oil cost has been sourced from the Annual Report of the Company for the year 2007-08. The information was available to the project developer at the time of decision making. The report was checked and the value was found to be correct. As the Annual Report is verified by independent third party chartered

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
						account and reported to government DOE considers this source as reliable. As per http://www.petroleumbazaar.com/Displaynationalprice.aspx the price for Furnace Oil 380 is 33,384.83 Rs./MT Mumbai on 29-08-2011 equivalent to about 32,38 Rs./liter at a density of 0.97 kg/liter. Therefore it is concluded that the applied value as appriate and reasonable.
Manpower cost per year	1.97	Rs. million	CFO Certificate dated 20/06/2008 Thermax letter dated 30/08/2010	/ADD/	☒	The manpower requirement assumed in the financial indicator calculation has been evidenced by Thermax vide their letter dated 30/08/2010. The wage/salary level has been certified by the CFO of the company and this cost is based on CFO's certification. It also includes a sum of Rs.0.3 mn. for sludge removal and statutory expenses, based on estimates. Even the total removal of these costs does not render the project non-additional.
Chemicals and consumables per year	1.77	Rs. million	Thermax letter dated 30/08/2010	/ADD/	☒	The cost is based on the letter issued by Thermax on 30/08/2010. Project developer had reckoned these expenses in the financial indicator calculation based on the indications given by Thermax, which is the technology and machinery supplier in this instant case. Thermax has given a separate letter on 30/08/2010 giving the details of chemicals and cost and repairs and maintenance cost, as a supporting document. Hence, though the documentary evidence is post dated to decision making date, this information was available to the project developer from Thermax at the time of

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
						decision making.
Caustic soda per cum of mother liquor	100	Rs.	Thermax letter dated 30/08/2010	/ADD/	☒	The cost caustic soda has been considered at rs.20/kg and 5 kgs is estimated to be the requirement per cum of mother liquor. This is, now, based on the letter issued by Thermax on 30/08/2010. Project developer had reckoned these expenses in the financial indicator calculation based on the indications given by Thermax, which is the technology and machinery supplier in this instant case. Thermax has given a separate letter on 30/08/2010 giving the details of chemicals and cost and repairs and maintenance cost, as a supporting document. Hence, though the documentary evidence is post dated to decision making date, this information was available to the project developer from Thermax at the time of decision making.
Repairs and maintenance cost per year	0.80	Rs. million	Thermax letter dated 30/08/2010	/ADD/	☒	Repairs and maintenance cost includes repairs and maintenance for both mother liquor plant and waste water treatment plant. The cost is now based on the letter issued by Thermax on 30/08/2010. Project developer had reckoned these expenses in the financial indicator calculation based on the indications given by Thermax, which is the technology and machinery supplier in this instant case. Thermax has given a separate letter on 30/08/2010 giving the details of chemicals and cost and repairs and maintenance cost, as a supporting document. Hence, though the documentary

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
						evidence is post dated to decision making date, this information was available to the project developer from Thermax at the time of decision making.
Insurance premium	0.22	Rs. million	Tata AIG General Insurance policy dated 01/04/2007	/ADD/	☒	The insurance premium is based the Insurance cover note of Tata AIG General Insurance Co dated 01/04/2007. The insurance premium works out to 17 bps., which is in line with the normal insurance premium rates. The value is correct and appropriate
Quantity of working hours	8760	Hours	Plant operation statistics		☒	The plant being in a dairy industry with milk as the raw material operates all the 365 days in a year and processes milk and milk products in three shifts per day. Hence, the total number of working hours of 8760 is correct and appropriate as well as conservative.
Capital cost	129.12	Rs. million	Thermax techno commercial proposal dated 06/03/2008 (p.39)	/OL/	☒	Project cost includes two items, viz., Mother Liquor Treatment Plant including gas transformer and boiler burner conversion and Waste Water Treatment Plant. The cost includes, engineering consultancy, related civil works, electrical feeder cables, installation, erection, commissioning and trial run cost. The cost calculation takes into account the tax and tax credits the plants are entitled to as per the extant laws (Please refer http://www.cbec.gov.in/excise/cx-act/cx-acts.htm, http://www.cbec.gov.in/excise/cx-tariff0910/cxt0910-idx.htm, http://law.incometaxindia.gov.in/DIT/Income-tax-acts.aspx)

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
						The cost is based on the quotation of Thermax dated 06/03/2008 and hence was available to the project developer at the time of decision making (on 30/06/2008). The total cost of the plant works out to Rs.129.12 mn. Since no projects from the dairy industry has gone in for this technology, Validation Team checked the reasonableness of the project cost with 2 other projects already registered with same sectoral scope (though not from the same industry). It was observed that the project cost was taken at Rs.67.19 mn by GMR Energy (Reg. No. 0505)[24] with spent wash generation of 400 m3/day and Rs.37.13 mn by Sri Chamundeshwari Sugars Ltd. (Reg. No. 1088)[25] with spent wash generation of 450 m3/day. Validation team sought explanation for the high cost and the project developer informed that the Project activity uses two step treatment method to reduce the COD. In the first stage the COD of ML is reduced from 390,000 mg/L to 80,000 mg/L by installing specially designed UASB reactor. Further treatment of this effluent in newly constructed 1000 m^3 treatment plant reduces COD to meet state pollution control body standards i. e. less than 150 mg/L. Treated effluent is ozonised so that it can be reused. This

[24] http://cdm.unfccc.int/Projects/DB/SGS-UKL1152270393.27/view
[25] http://cdm.unfccc.int/Projects/DB/DNV-CUK1176804855.99/view

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
						two step approach and PP's commitment for environment protection has resulted in higher project cost. Validation team observed that while the other two projects generate spent wash with COD range of 130,000 to 150,000 whereas, COD of the project activity is 390,000 mg/lt. Validation Team also requisitioned the purchase orders released subsequently and a statement on investment made duly certified by the Chartered Accountant. It was observed that the project developer has made an investment of Rs.126.6 mn. as against 129.1 mn. envisaged – a difference of ~2%. As the sensitivity analysis given in the later part of the report would reveal that the project remains additional even with a reduction in the project cost by 10% (IRR works out to 8.60% as against the benchmark of 12.25%). Since the cost is related to the COD reduction, the COD is very high in the case of the ML of project activity. MLTP is designed for reduction of COD approx 3,90,000 mg/L to 80,000 mg/L in first stage and to 10 mg/L in second stage. Thermax Ltd. has done research and development of treatment of mother liquor with very high COD. The cost is based on the quotation submitted by Thermax and verified through CA certificate. The actual investment does not render the project non additional, Validation Team considers the cost as reasonable and acceptable.
IT Depreciation	100 80	Percent Percent	Income Tax Rules (Appendix I)	/IT/	☒	Income Tax Rules were checked and the depreciation rate considered is found to be correct. Income Tax Rules can be

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT	
					Correctness of value applied	Comment
- WWTP - -Mother liquor						accessed at http://law.incometaxindia.gov.in/DIT/income-tax-rules.aspx
Tax	33.99	percent	Finance Act 2008-09	/IT/	☒	Finance Act 2008-09. The tax rate has been checked from Ready Reckoner and the values have been found to be correct. The tax rate can be accessed at the following website (p.7 sec.3.1.11) http://www.incometaxindia.gov.in/archive/ExplCircularforwebsite_30032009.pdf

ANNEX 4: ASSESSMENT OF BARRIER ANALYSIS

Table A-4: Assessment of Barrier Analysis (EB 55 Annex 1, §118)

☒	No barrier parameters are used for additionality justification
☐	Assessment of barriers see below

Kind of Barrier (invest, tech, other)	Description of Barrier	Evidence used	Assessment of validation team	
			Appropriateness of information source	Explanation of final result
			10	11

ANNEX 5: OUTCOME OF THE GSCP

Table A-5: Outcome of the Global Stakeholder Consultation Process

(§§ 40-42, VVM Version 1.2)

☐	No comments were received during the global stakeholder consultation period
☒	Comments were received during the global stakeholder consultation period. The comments (in unedited form) and the consideration/response of the validation team are presented below:

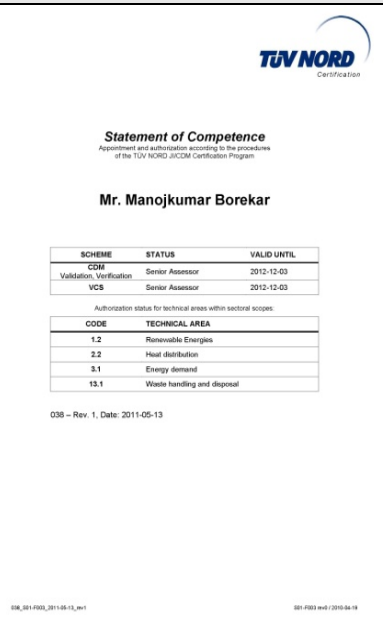
Comment No.:	Comment by:	Inserted on:	Subject	Comment *)	Action taken by the validation team to take due account on the comment *)	Conclusion (incl. CARs CLs or FARs)
1	Climate Change Forum, (climate.change1997@gmail.com)	23 Feb 2010	global stakeholder comments	"As per the PDD, this project comprises of 2 parts. A) Methane avoidance B) Fuel Switch. Such methane recovery projects in Maharashtra are non-additional and are part of the baseline scenario. DOE is requested to check the CREP guidelines and the impact of such guidelines in waste water treatment and biogas utilization. http://www.cpcb.nic.in/ old website/ Projects%20&%20Action% 20Plans/CREP_Recommendations.html	Further clarification has been requested by DOE to PP. Based on the responses given by PP, validation team has performed the assessment. Detailed responses are given under CAR E2.	• PP has provided letter from Indian Dairy Association dated 08/10/2009 stating that methane recovery from mother liquor treatment is first of its kind in India in Dairy sector. From the letter it is evident that it's the only dairy in India which is treating mother liquor using anaerobic digesters and capturing methane. Further, consent to operate by state goverment does not mentions methane recovery as compulsory in wastewater treatment. • DOE checked the CREP guidelines under action plan only for Tannery, Rubber and Electroplating

				As the PP has already implemented ISO 9001:2000, hence DOE is also requested to cross check quality control management system regarding waste water treatment. I strongly believe that the Consent to Operate (at time of CDM conceptualization and prior to investment decision) also prove the mandatory requirement for installation of digesters to treat the waste water and biogas use. Kindly review whether the case is an E+ or E- policy. You may also consider going through the recent EB clarification on a similar waste water treatment project can also be reviewed prior to decision making - please refer F-CDM-SSCwg ver. 01 SSC_325 as in SSC WG 22. I don't want to disclose my identity. I am requesting to the DOE to send me the answers in my email id (climate.change1997@gmail.com)"		industries with the purpose to go beyond the compliance of regulatory norms for prevention and control of pollution through various measures including waste minimization, in-plant process control and adoption of clean technologies. Moreover PP is bound to obtain the clearances from Maharashtra Pollution Control Board only. • Project proponent has upgraded to ISO 22000:2005 from ISO 9001:2000 on 02/05/2007 and certificate of the same has been submitted to DOE. QMS system applied to project activity has been reviewed by assessment and found OK. • PP submitted the Maharashtra Pollution control Board consent to operate (Ref No: BO/WPAE/EIC-PN-1391-06/Pune-990, dated 11/12/2006) which shows that project proponent is in compliance with the norms at the time of CDM conceptualization and prior to investment decision making and there is no clause mandating installations of bio digester and methane use. Also please refer Maharashtra Pollution control Board consent to operate No: BO/PCI-III/EIC-PN-4471-09/-52,

						dated 06/03/2010, there is no mention of mandatory requirement of treatment system for mother liquor. • E+ / E- policy is not applicable for this project activity since there are no national policies for mandatory treatment of mother liquor treatment. From the above, it is evident that, neither state pollution control board nor central pollution control board provided any compulsory guideline for the project activity. DOE validated the responses from PP on the comments and found satisfactorily addressed.

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

ANNEX 6: STATEMENTS OF COMPETENCE OF ALL INVOLVED PERSONNEL



TÜV NORD Certification

Statement of Competence

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

Mr. Manojkumar Borekar

SCHEME	STATUS	VALID UNTIL
CDM Validation, Verification	Senior Assessor	2012-12-03
VCS	Senior Assessor	2012-12-03

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewable Energies
2.2	Heat distribution
3.1	Energy demand
13.1	Waste handling and disposal

038 – Rev. 1, Date: 2011-05-13

TÜV NORD Certification

Statement of Competence

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

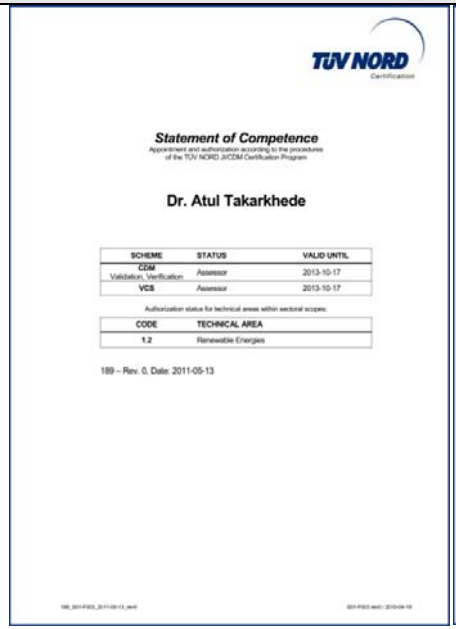
Mr. Swapnil Thanekar

SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification)	2014-02-02
VCS	Lead Assessor	2014-02-02

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewable Energies

047 – Rev. 1, Date: 2011-08-02



TÜV NORD Certification

Statement of Competence

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

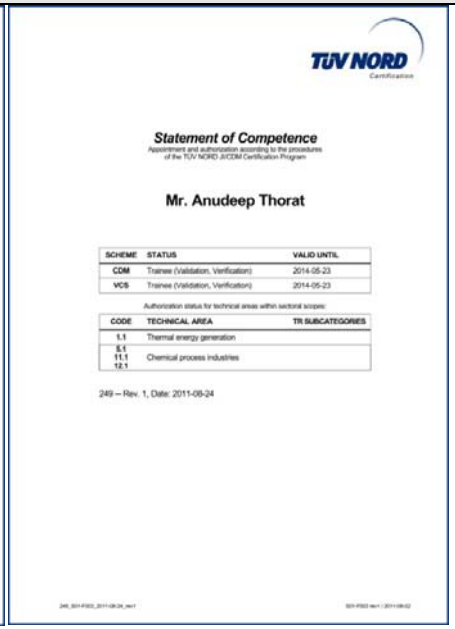
Dr. Atul Takarkhede

SCHEME	STATUS	VALID UNTIL
CDM Validation, Verification	Assessor	2013-10-17
VCS	Assessor	2013-10-17

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewable Energies

189 – Rev. 0, Date: 2011-05-13



TÜV NORD Certification

Statement of Competence

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

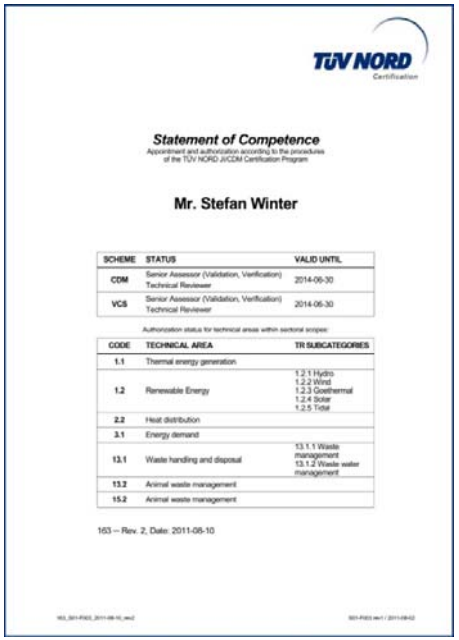
Mr. Anudeep Thorat

SCHEME	STATUS	VALID UNTIL
CDM	Trainee (Validation, Verification)	2014-05-23
VCS	Trainee (Validation, Verification)	2014-05-23

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.1	Thermal energy generation	
II.1 11.1 12.1	Chemical process industries	

249 – Rev. 1, Date: 2011-08-24



TÜV NORD Certification

Statement of Competence

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

Mr. Stefan Winter

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2014-06-30
VCS	Senior Assessor (Validation, Verification) Technical Reviewer	2014-06-30

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA	TR SUBCATEGORIES
1.1	Thermal energy generation	
1.2	Renewable Energy	1.2.1 Hydro 1.2.2 Wind 1.2.3 Geothermal 1.2.4 Solar 1.2.5 Tidal
2.2	Heat distribution	
3.1	Energy demand	
13.1	Waste handling and disposal	13.1.1 Waste management 13.1.2 Waste water management
13.2	Animal waste management	
15.2	Animal waste management	

163 – Rev. 2, Date: 2011-06-10