

VALIDATION REPORT


“Golden Sugar 30 MW High Energy Efficient Combined
Heat and Power (CHP) System in Apapa, Lagos, Nigeria”
in
Nigeria

Golden Sugar Company Limited
Standard Bank Plc

Report N° CCL00151/GSEAL/30032012

Revision N° 03

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Project Title: Golden Sugar 30 MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria		Country: Nigeria	Estimated CERs (tCO ₂ e): 59,421 annual average	
Client: 1 Golden Sugar Company Limited 2, Old Dock Road, P.O. Box 341 Apapa, Lagos State Nigeria		Client:2 Standard Bank Plc 20, Gresham Street London EC2V7JE	Client Contact: Mr. Costas Theodorakopoulos Authorised Representative Golden Sugar Company Limited Mr. Geoff Sinclair Standard Bank Plc Authorised Representative	
Report N ^o : CCL00151/GSEAL/30032012		Revision N ^o : 03	Date of this report: 05/09/2013	
Technical Reviewer: Mr. Vikash Kumar Singh			Date of approval: 05/09/2013	
Final Approval : Mr. Priyesh Ramlall 			Date of approval: 06/09/2013	
Methodology				
Number: AM 0102	Version: 01.0.0	Title: "Greenfield cogeneration facility supplying electricity and steam to a Greenfield Industrial Consumer and exporting excess electricity to a grid and/ or project customer(s)"	Scale: Large	Sectoral Scope 1
GHG reducing measure/technology:	The Project plan is to cogenerate power and steam at the site of the sugar refinery (Greenfield Industrial Consumer). During the first phase, two gas turbines will be installed, each with an installed capacity of 14.4MW _e . The gas turbines will be fuelled with natural gas. The energy requirement of the refinery includes process steam and power. Waste heat at the exhaust of each of the gas turbines will be recuperated by passing the waste gas stream of each of the two turbines, through each turbine's Heat Recovery Steam Generator (HRSG) to produce low pressure steam that will be utilized in the refinery. Excess electricity generated will be supplied to a dedicated Industrial customer (Project Customer).			

Summary of validation process (Compliance of paragraph 147(a), (b) and 148 (a) of VVS version 02 /B01/).

Carbon Check Pty Ltd.(Carbon Check), have been commissioned by Golden Sugar Company Ltd. and Standard Bank Plc to undertake the validation of the proposed project activity "Golden Sugar 30 MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria" in Nigeria, with regard to the relevant requirements for CDM activities.

The validation has been performed through a process of document reviews based on the project design document ^{/01/} initially submitted for validation and the subsequent revisions; follow up interviews with stakeholders including on site visit; resolution of outstanding issues and issuance of the validation opinion and report. The Project activity involves the installation of a Greenfield cogeneration facility (hereafter referred to as "project facility") at the site of a Greenfield Industrial Customer. The project facility supplies

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steam and electricity directly to the Greenfield Industrial Customer for captive use and exports excess electricity to project customers. The project facility is designed primarily to meet the heat/steam demand of the Greenfield Industrial Customer. Excess electricity generated will be supplied/exported to a dedicated Industrial Customer (Project Customer).

The compliance to all requirements as set forth in Article 12 of the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC), the modalities and procedures for CDM (CDM M&P) and relevant decisions of the Conference of the Parties, serving as meeting of the parties to the Kyoto protocol (COP/MOP) and the Executive Board of the CDM (CDM EB) have been evaluated and conformance to the validation requirements were confirmed based on the given information. A rule based approach was taken to conduct the validation and corrective action requests (CARs) and clarifications (CLs) were raised for relevant actions by the PP.

In conclusion, 11 Corrective Action Requests (CARs) and 07 Clarification Requests (CLs) were identified for the proposed CDM project activity in relation to all relevant UNFCCC requirements for the CDM and all relevant host Party criteria and the applied baseline and monitoring methodology. All findings (CARs and CLs) have been closed satisfactorily.

The PP has taken actions and provided clarification to Carbon Check in the form of the revised project design document and supporting evidences. The validation team is of the opinion that the proposed project activity as described in the project design document /01/ meets all the relevant UNFCCC requirements for the CDM, as well as the host country's national requirements and if implemented as designed, is likely to achieve the emission reductions and contribute to the sustainable development of the host country.

Carbon Check thus requests the registration of "Golden Sugar 30 MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria" as a CDM project activity.

Validation Team						
Full Name	Appointed for Sectoral scopes (Technical Areas)	Team Leader	Local Expert	Team Member (Auditor)	Technical Expert	Technical Reviewer
Mr. Sunil Kathuria	1.1, 1.2, 2.1, 4.1	X		X	X	
Mr. Ravi Shankar	1.2,2.1, 2.2, 3.1, 13.1			X (until 16/01/2012)		
Mr. Vikash Kumar Singh	1.2, 3.1, 13.1					X
Mr Adam Simcock	--		X			
Mr. Pankaj Kumar	1.1,1.2,3.1,4.5,13.1				X	

Validation Phases and Validation Status:



Desk Review



Follow up interviews



Resolution of outstanding issues



Corrective Actions/Clarifications Requested



Full Approval and Submission for Registration



Rejected

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Executive Summary – Validation Opinion (Compliance of Paragraph 148 (B) OF VVS Version 02 /B01/)

Carbon Check has performed the validation of the project activity “Golden Sugar 30MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria, with regard to the relevant requirements for CDM activities and Validation and Verification Standard.

The review of the project design document ^{/01/} and the subsequent follow-up interviews have provided Carbon Check with sufficient evidence to determine the fulfilment of the stated criteria.

The project is an Annex-I supported project and the DNA from Nigeria & United Kingdom have confirmed that the project assists in achieving sustainable development.

The project correctly applies the approved baseline and monitoring methodology Approved consolidated baseline and monitoring methodology AM 0102 version 01.0.0 ^{/B02/}. “Greenfield cogeneration facility supplying electricity and steam to a Greenfield Industrial Consumer and exporting excess electricity to a grid and/or project customer(s).”

By description of the project activity “Golden Sugar 30MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria” will result in the reduction of GHG emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project activity are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the “Golden Sugar 30MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria” are estimated to be an average of 59,421 tCO₂e per year over the selected Seven (07) years renewable crediting period. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

The monitoring plan is provided for the monitoring of the project activity’s emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design and it is Carbon Check’s opinion that the project participant is able to implement the monitoring plan.

In conclusion, it is Carbon Check’s opinion that the project activity “Golden Sugar 30MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria”, as described in the PDD, version 05 of 26/12/2012 ^{01/} meets all relevant UNFCCC requirements for the CDM and all relevant Host Party criteria and correctly applies the baseline and monitoring methodology “AM 0102 version 01.0.0”, “Greenfield cogeneration facility supplying electricity and steam to a Greenfield Industrial Consumer and exporting excess electricity to a grid and/or project customer(s).”.

Carbon Check thus requests registration of “Golden Sugar 30MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria” as a CDM project activity.

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Abbreviations:

BE	Baseline Emissions
CAR	Corrective Action Request
CC	Cross Check
CCL	Carbon Check (Pty) Ltd
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CER(s)	Certified Emission Reduction(s)
CH ₄	Methane
CL	Clarification Request
CO ₂	Carbon dioxide
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EB	Executive Board
EIA	Environmental Impact assessment
ER	Emission Reductions
EPA	Environmental Protection Authority-The Federal Democratic Republic of Nigeria.
FAR	Forward Action Request
FMNPLC	Flour Mills Nigeria Private Limited Company
GHG(s)	Greenhouse gas(es)
GWP	Global Warming Potential
GSCL	Golden Sugar Company Limited
HRSG	Heat Recovery Steam Generator
I	Interview or any follow up action
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of Approval
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-Governmental Organization
ODA	Official Development Assistance
PDD	Project Design Document
PE	Project Emission
PP(s)	Project Participant(s)
Ref.	Document Reference
SD	Sustainable Development
SS(s)	Sectoral Scope(s)
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

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1 INTRODUCTION

Golden Sugar Company Limited & Standard Bank Plc has commissioned Carbon Check (Pty) Ltd, herein after referred to as “Carbon Check”, to carry out the validation of the project activity “Golden Sugar 30MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria”. This report summarizes the findings of the validation of the project activity, performed on the basis of UNFCCC criteria for CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The objective of the validation is to have an independent evaluation of a project activity by a Designated Operational Entity against the requirements of the CDM as set out in decision 3/CMP.1, its annex and relevant decisions of the COP/MOP and CDM-EB, the present annexes, subsequent decisions made by the COP/MOP and CDM-EB on the basis of the project design document. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant UNFCCC requirements and Host Party criteria are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project activity and its intended generation of Certified Emission Reductions (CERs). The Validation follows the requirements of the current version of the CDM validation and verification standard (CDM VVS)_{/B02/} to ensure the quality and consistency of the validation work and the report.

1.2 Scope

The scope of validation is an independent and objective review of the project design. Review of the PDD_{/1/} is conducted against the requirements of the Kyoto Protocol, the CDM M&P and relevant decisions of the COP/MOP and the CDM-EB. Carbon Check follows a rule-based approach in the validation focusing on the identification of significant risks for project implementation and generation of CERs. Validation is not meant to provide any consulting towards the PP, however, the corrective actions requests (CARs) and clarifications (CLs) might provide input for improvement of the project design.

2 METHODOLOGY

Validation was conducted using Carbon Check procedures in line with the requirements specified in the CDM Modalities and Procedures the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques.

The validation consisted of the following four phases

- Document review
- Site visit
- Follow-up actions
- The resolution of outstanding issues and the issuance of the final validation report

The following sections outline each step in more detail.

2.1 Document Review

The PDD_{/01/}, version 01 of 07/06/2012 was reviewed by Carbon Check. Carbon Check requested the PP to provide supporting information relating to applicability of the methodology, the baseline determination, the additionality of the project activity, the starting date of the project, the monitoring plan. The emission reduction calculations were provided in the form of a spread sheet “GS Emission Reduction Calculations Final 30052012.XLS_{/13/} was

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assessed as part of the validation. Carbon Check reviewed the final version of the PDD Version 05 dated 26/12/2012 /01/ to all issues raised had been adequately addressed and reflected in final version of the PDD.

Background investigation and other referred documents/websites:

/01/	Golden Sugar Company Limited: CDM-PDD for project activity “Golden Sugar 30 MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria” version 01 of 07/06/2012 and Final Version 05 dated 26/12/2012
/02/	Golden Sugar Company Limited: CDM-PDD for project activity “Golden Sugar 30 MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria” version 01 of 07/06/2012 and Final Version 05 dated 26/12/2012
/03/	Attendance records of Stakeholders 04/08/2009 & 12/08/2009
/04/	Consultation Forum GSC not dated
/05/	Presentation on GSC refinery project during EIA Consultation
/06/	Letter of approval from Federal Ministry of Environment ,Nigeria Dated 04/10/2012
/07/	Environment Management System- Golden Sugar Company.
/08/	Environmental Impact Report Golden Sugar Limited ,March 2010
/09/	Federal Ministry of Environment, Nigeria: Environmental Certificate dated. August. 2010
/10/	Intimation to Ministry of Environment, Housing & Urban Development dated 04/10/2011
/11/	Reference Plant Data, compiled by Golden Sugar Company Limited
/12/	CDM Organogram GS dated 15/05/2012
/13/	Emission reduction spread sheet GS Emission Reduction Final.xls version 02 of 14/05/2012 and the final version
/14/	Compressor Specification Mayekawa Europe NV dated 22/04/2010
/15/	Spread sheet-“GS Financial Analysis - Baseline and Additionality – Final.xls” of 16/05/2012
/16/	Minutes of the Board of Directors meeting & Board Authorisation to enter in to emission reduction purchase agreement dated 24/11/2010
/17/	“CDM Emission Reduction Purchase agreement” between Golden Sugar Company Limited(GSCL) and Standard Bank Plc dated 12/01/2011
/18/	“Project Schedule” Power Generation dated 12/09/2012
/19/	Operation Manual of WHRSG System , Bertsch Energy
/20/	Prior consideration form “F-CDM-Prior Consideration” dated 10/02/2011
/21/	“Letter of No objection” issued by “Federal Ministry of Environment, Nigeria” dated 11/04/2011
/22/	“Business permit Certificate” issued by Nigerian Investment Promotion Commission dated 17/07/2008
/23/	“Final Approval letter of EIA” issued by “Federal Ministry of Environment, Nigeria” dated 13/07/2010
/24/	“Permit to generate 30MW of Electricity issued by Nigerian Electricity Regulatory Commission”
/25/	Invitation to comment on EIA of GSC during the period (19 th Oct-16 th Nov 2009) by “Federal Ministry of Environment, Nigeria”
/26/	Generator Data Sheet” issued by “Siemens Industrial Turbomachinery Limited” UK dated 12/08/2011

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/27/	Technical Specification of Heat Recovery Steam Generator Revision 3 dated 22.06.2010 issued by issued by Star Trading Company Limited
/28/	“Technical life time of Turbine Generators dated issued by “Group Technical Director –Flour Mills Nigeria PLC” dated 18/04/2012
/29/	Proforma invoices (offer letter) for Plant 1 and 2 issued by Star Trading Company Limited dated 04/05/2011 and 31/01/2012
/30/	Budget Monitoring Sheet of Power Plant Costs, GSCL, dated end July 2012
/31/	Account statement dated 20/03/2012 issued by GSCL
/32/	Account statement for the period 16/07/2011-01/08/2011 issued by Stanbic ITBC Bank
/33/	Electronic Payment Receipt of Bank transfer dated 19/07/2011
/34/	Certificate of Incorporation of GSCL dated 22/04/2008 issued by Corporate affairs commission, Federal republic of Nigeria
/35/	Power Purchase agreement” between GSCL & Flour Mills of Nigeria PLC dated 01/08/2011
/36/	Confirmation letter on no ODA funding issued by GSCL dated 22/08/2012
/37/	Loan agreement between GSCL and Standard Bank dated 28/05/2012
/38/	USD/NGN Historical exchange rates for period (31.05.2010- 28.06.2012) www.oanda.com
/39/	Technical review of GSCL refinery project Nigeria- Final report dated September 2010 issued by “Booker Tete”
/40/	Technical review of GSCL refinery project Nigeria- Final report issued by IPRO Indutrieprojekt GmbH dated 22/10/2010
/41/	GSCL “Approval of Additional Capital expanses” dated 29/10/2010
/42/	Power Generation Records for Flour Mills PLC (FMPLC) for Jan-Dec2011 issued by FMPLC
/43/	Electric Power sector reform Act 2005 and its subsequent amendments in 2008 & 2010 issued by Nigerian Electricity Regulatory Commission.
/44/	“Request letters for disconnection from grid” to “Power holding Corporation of Nigeria” issued by FMPLC dated. 06/04/2010
/45/	Technical Specification of 2 nd WHRS Boiler
/46/	“Selection of Baseline and Demonstration of additionality for the Golden Sugar project” dated nil issued by GSCL
/47/	“ How Decentralised Energy can deliver cleaner, cheaper and more efficient energy in Nigeria “ issued by World alliance on Decentralised energy” dated August 2009
/48/	Modalities of Communication dated 19/12/2012
/49/	Letter of approval from Nigerian DNA
/50/	Letter of Approval from UK DNA
/51/	Letter from Standard Bank PLC on change of Annex-I Party
/52/	Renewable Energy Sources and Technologies in Nigeria:- J-F Akinbami (174-177)
/53/	Renewable Electricity Policy Guidelines Deceember-2006 –Iceed 2006
/54/	Letter of Intent to Purchase Power by FMNPLC to GSLC dated 27/06/2011

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/55/	Cost of Electricity Generation by FMNPLC dated 18/04/2012
/56/	Gas pricing circular issued by Nigerian Gas Company dated 29/04/2010
/57/	Details of Non capital expenses , GSCL not dated
/58/	Supporting document for CHP efficiency
/59/	Multiyear Tariff Order 2008-12, Nigerian Electric reforms commission., June 2012
/60/	Communication on “Reference Plant “ with Owners /equipment suppliers GSCL dated 21/03/2012 onwards
/61/	Explanatory Notes on Reference Boiler a) Quotation for LOOS UL – 16000from Bosch Industriekessel GmbH dated 20/12/2012 b) Quotation for Civil work including building c) Emails indicating the installation and commissioning costs
/62/	Reference Turbine generator data from Clarks energy dated 02/05/2012
/63/	Nigerian Implementation Plan 2010-2013
/64/	Analysis of cost of failure in developing economy- The case of Electricity sector in Nigeria- By Department of Economics Nigeria 2005
/65/	CDM Monitoring Plan GSCL, October 2012
/66/	Clean energy Investment opportunity in Nigeria Felix Dayo April 2008
/67/	Layout of monitoring devices GSCL
/68/	Training programme for CDM Monitoring GSCL
/69/	Nigerian Low carbon development opportunities for power oil and gas sectors.
/70/	Nigerian Infrastructure a continental perspective
/71/	Estimate of OPEX expenditures , GSCL dated 18/04/2012
/72/	Renewable Energy Resources and Technologies in Nigeria -JOHN-FELIX K. AKINBAMI.
/73/	Interviews with Key Personals and stake holders. The dates and names of the persons interviewed is mentioned in in section 2.2 below
/74/	Sample of Natural Gas Analysis for January 2011, Rofnel Energy Services Limited
/75/	Letter of Intent signed by GSCL & FMNPLC dated 27/06/2011
/76/	Details Of Directors for GSCL dated 26/01/2011
/77/	Registration certificate of FMNPLC & Details of Directors for FMNPLC dated 27/11/1990 & 12/03/2013
/78/	Declaration of GSCL on its relationship with FMNPLC dated 14/08/2013
/79/	Basis for calculating steam price dated nil, GSCL
Background Documents List	
/B01/	UNFCCC www.unfccc.int
/B02/	CDM Executive Board: Validation and Verification Standard, version 2.0 of 25/11/2011
/B03/	CDM Executive Board: Baseline and monitoring methodology “AM 0102: Greenfield cogeneration facility supplying electricity and steam to a Greenfield Industrial Consumer and exporting excess electricity to a grid and/or project customers(s)”--- Version 1.0 of 02/03/2012
/B04/	CDM Executive Board: Guidelines for project design document (CDM-PDD) and the proposed new baseline and monitoring methodologies (CDM-NM)” ver. 1.0. EB 66, Annex. 08
	Background Documents List

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/B05/	CDM Executive Board: "Combined Tool to identify the baseline scenario and assessment of additionality", Version 4.0 of 02/03/2012. CDM Executive Board Guidelines on assessment of Investment analysis EB 62 Annex 5
/B06/	CDM Executive Board :Tool to calculate project or leakage CO2 emissions from fossil fuel combustion, Ver. 02 of 02/08/2008
/B07/	CDM Executive Board Guidelines on assessment of Investment analysis EB 62 Annex 5
/B08/	CDM Executive Board: Glossary of terms, Version 07 of 23/11/2012
/B09/	CDM Executive Board: Guidelines on the demonstration and assessment of prior consideration of CDM, version 04 of 15/07/2011
/B10/	http://www.siemens.com/press/en/feature/2012/energy/2012-11-florida.php
/B11/	http://www.academicjournals.org/ajfs/pdf/pdf2009/Aug/Aderemi%20et%20al.pdf
/B12/	http://www.naee.org.ng/files/paper1.pdf
/B13/	http://nigerianewsday.com/guest-forum/guest-contributor/195-nigerias-power-crisis-light-at-the-end-of-the-tunnel
/B14/	http://cgpl.iisc.ernet.in/site/Portals/0/Publications/Presentations/EGM/10_Nigeria-egm.pdf - Overview of Biomass Energy Programme in Nigeria
/B15/	http://www.environmentalleader.com/2010/04/08/coca-cola-bottler-moves-forward-with-chp-projects
/B16/	http://www.goglobalafrica.com/opics-political-risk-insurancemitigating-fears-of-investment-in-africa
/B17/	http://www.em-ea.org/Guide%20Books/book-2/2.7%20Cogeneration%20.pdf
/B18/	www.nwfpa.org/nwfpa.info/component/content/article/334-how-to-calculate-the-true-cost-of-steam?Start=1

Carbon Check was able to verify all the documented evidence listed above during the validation process and can confirm that data and considerations are complete and accurate.

2.2 Follow-up actions

On 30/08/2012 and 31/08/2012, Carbon Check visited the project site to resolve questions and issues identified during the document review and to perform interviews with relevant stakeholders in the Host Country. The project is likely to be fully commissioned by end of December 2012 /18/. Validation of the proposed project activity has been carried out by reviewing available designs, reports and by interviewing the project participant. Carbon Check has undertaken a physical site visit. The key personnel interviewed and the main topics of the interviews are summarized in the table below:

Carbon Check has undertaken a physical site visit.

Date	Name and Role	Organization	Topic
30/08/2012 & 31/08/2012	Mr. Costas Theodorakopoulos Managing Director	Golden Sugar Company Limited	Project Details Technical Specifications Project Planning Site Visit Monitoring Management Controls

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30/08/2012 & 31/08/2012	Mr. Festus Qmotosinbo-EEM	Golden Sugar Company Limited	Project Details Technical Specifications Project Planning Site Visit
30/08/2012 & 31/08/2012	Dr. Deborah Wilson Cornland Director	Cornland International	PDD Development EB Guidelines
30/08/2012 & 31/08/2012	Dr. Felix .B. Dayo - CEO	Triple E Systems Inc	PDD Development EB Guidelines
30/08/2012 & 31/08/2012	Mr. Adeniyi Femi Rotimi –Industrial Engineer	Golden Sugar Company Limited	PDD Documentation
30/08/2012	Mr. Stephen A Ndukwe Group Technical Director	Flour Mill Nigeria PLC	Project Details Technical Specifications Project Planning Site Visit
30/08/2012	Mr. Heinz Zemke Project Manager	Golden Sugar Company Limited	Site Visit Project's Technical Details
30/08/2012	Mr. Theo De Beer Head Of Manufacturing	Golden Sugar Company Limited	Site Visit Project's Technical Details
30/08/2012	Ramos Pandy Electrical Engineer		Site Visit Project's Technical Details
31/08/2012	Mr. Rufus Adenipekun Finance Divisional Head-Control		Investment Analysis
Meeting with Stake Holders			
30/08/2012	Mr. Bamgbose Community leader	Community Leader	Stakeholder consultation
30/08/2012	Mr. Akeem Zimoh	Rewinder	Stakeholder consultation
30/08/2012	Mr. Grupke Kingsway	Rewinder	Stakeholder consultation
30/08/2012	H.R Moba of Iyora Kingdom Appapa	Elder chief	Stakeholder consultation
30/08/2012	Mr. Moses	Contractor	Stakeholder consultation
30/08/2012	Mr. Benjamin Mowunye Senior Special assistant	Appapa local Government	Stakeholder consultation
30/08/2012	Engr. Bolaji Loya	CDC Chairman, Appapa local	Stake holder consultation

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		Government	
30/08/2012	Mr. Wali	Local Citizen	Stake holder consultation

2.3 Resolution of outstanding issues

The objective of this phase of the validation is to resolve any outstanding issues which need to be clarified for Carbon Check's conclusion on the project design.

To guarantee transparency, a validation protocol has been customized for the project. The protocol shows in a transparent manner the requirements, means of validation and the results from validating the identified criteria. The validation protocol consists of four tables; the different columns in these tables are described in the figure below (see Figure 1). The completed validation protocol is enclosed in Appendix A to this report.

A corrective action request (CAR) is raised if one of the following occurs:

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

A clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A forward action request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration. CARs, CLs and FARs identified are included in the validation protocol in Appendix A of this report.

Figure 1 Validation protocol tables

Validation Protocol, Table 1 - Mandatory Requirement		
Requirement	Reference	Conclusion
The requirements the project must meet.	Makes reference to the documents where the answer to the requirement is found.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) is being raised in case of a requirement not being met. A Request for Clarification (CL) is used when the validation team has identified a need for further clarification and a Forward Action Request (FAR) is being raised to highlight issues which require review during the first verification of the project activity.

Table 2 is for the draft report; any updates in the final report are discussed in Table 3.

Validation Protocol, Table 2 - Requirement Checklist					
Checklist Question	Ref.	MoV	Comments	Draft Conclusion	Final Conclusion
The various requirements in Table 1 are linked to checklist	Makes reference to document(s)	Explain how conformance with the checklist question has been investigated.	The discussion on how the conclusion	OK is used if the information and evidence	OK is used if the information and evidence

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questions which the project should meet. The checklist is organized in seven different sections.	where the answer to the checklist question or item is found.	Examples are document review (DR), interview or any other follow-up actions (I), cross checking (CC) with available information relating to projects or (N/A) means not applicable.	has been arrived at and the conclusion on the compliance with the checklist question so far.	provided is adequate to demonstrate compliance with CDM requirements. For CAR, CL and FAR see the definitions above.	provided is adequate to demonstrate compliance with CDM requirements.
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Validation Protocol, Table 3 - Resolution of Corrective Action Requests and Clarification Requests

Corrective Action Request and/or Clarification Request	Reference to Table 2	Response by project participant(s)	Validation Conclusion
The CAR(s) and/or CL(s) raised in Table 2 are repeated here.	Reference to the checklist question number in Table 2 where the CAR or CL is explained.	The responses given by the project participant(s) to address the CAR(s) and/or CL(s).	The validation team's assessment and final conclusion of the CAR(s) and/or CL(s).

Validation Protocol, Table 4 - Forward Action Requests

Forward Action Request	Reference to Table 2	Response by project participant(s)	Validation Conclusion
The FAR(s) raised in Table 2 is/are repeated here.	Reference to the checklist question number in Table 2 where the FAR is explained.	Response by the project participant(s) on how forward action request(s) will be addressed prior to first verification.	If any

2.4 Internal quality control

Before being submitted to the client, all the revisions of the validation report were subjected to an independent technical review to confirm that all validation activities have been completed according to the pertinent Carbon Check procedures.

The technical review has been performed by (a) technical reviewer(s), qualified in accordance with Carbon Check's qualification procedure for CDM validation and verification, Validation team and the technical reviewer(s).

The validation team and the technical reviewer(s) consist of the following personnel:

Validation Team		Type of Involvement							
Full Name	Appointed for Sectoral scopes (Technical Areas)	Supervision of work	Desk review	Interview	Site visit & writing protocol	Report & input	Technical Expert support	Reporting support	Technical Reviewer
Mr. Sunil Kathuria	1.1, 1.2, 2.1, 4.1	X	X	X	X	X	X	X	
Mr. Ravi Shankar	1.2,2.1, 2.2, 3.1, 13.1		X	X		X			

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Mr. Vikash Kumar Singh	1.2, 3.1, 13.1							X
Mr Adam Simcock	--						X	
Mr. Pankaj Kumar	1.1,1.2,3.1,4.5,13.1					X	X	

3 VALIDATION FINDINGS

This section provides an overview of the validation activities undertaken by Carbon Check in order to arrive at the final validation conclusions and opinion. It includes general conclusions based on the Clean Development Mechanism Validation and verification standard, version 02.0./B01/

The project participants are correctly listed in table A.3 of the PDD_{/01/} and the information is consistent with the contact details provided in Annex 1 of the PDD_{/01/}. Participation in the project activity of the PPs have been authorized, as confirmed in the LoAs_{/49/, /50/} issued by the DNA of the parties concerned. The Validation team had obtained an email confirmation from the DNA of Nigeria that that the submitted LoAs are authentic and thus confirms to the requirement of § 42 VVS ver 02_{/B02/}. The following table summarizes the details of the LoA:

_{/49/, /50/}

3.1 Approval and Participation

The project's host Party is Nigeria_{/49/}. And the Annex-1 Party is United Kingdom_{/50/}

Host Country approvals (LoA) were not provided initially to DOE for Validation and CL-2 has been raised in this regard. In the webhosted version, Switzerland was identified as the Annex –I party. Subsequently Standard Bank (PP) submitted a LoA_{/50/} from United Kingdom along with a letter_{/51/} expressing their inability to get Switzerland LoA. Since Standard Bank is registered in United Kingdom. DOE has validated the LOA_{/50/} in line with paragraph 45 of VVS 02.0./B02/

Project participant /	Golden Sugar Company Limited & Standard Bank PLC	Standard Bank PLC
Party involved /05/	Republic of Nigeria (Host Country)	United Kingdom
Project activity title	Golden Sugar 30MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria	Golden Sugar 30MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria
APPROVAL		
LoA received _{/49/&/50/}	Yes It is received	Yes it is received
Date of LoA _{/49/&/50/}	04/10/2012	13/11/2012
LoA _{/49/&/50/} received from	PP	PP
Validation of authenticity	The LoA was received from the project participant. It was confirmed by comparing it with another LOA FEMNV/SCCU/245/1 dated 10/10/2011 issued by Nigerian DNA as required in § 43-48 VVS, ver 02.0 _{/B01/} .	The LoA was received from the project participant. The Validation team does not doubt authenticity of LoA, and it was confirmed by comparing it with another LoA, EA/ICIMILtd/ dated 23/11/2012 issued by United Kingdom DNA as required in § 43-48 VVS, ver 02.0 _{/B01/} .
Validity of LoA _{/49/&/50/}	Yes, validation team considers the LoA in accordance with in § 43-48 VVS, ver 02.0 _{/B02/} .	Yes, validation team considers the LoA in accordance § 43-48 VVS, ver 02.0 _{/B02/} .
Additional information	No, LoA does not contain any additional specification of the	No, LoA does not contain any additional specification of the

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	project activity like PDD version number etc.	project activity like PDD version number etc.
PARTICIPATION		
Party is party to Kyoto Protocol	Yes. Republic of Nigeria has ratified the Kyoto Protocol on 10/12/2004	Yes United Kingdom has ratified the Kyoto Protocol on 31/05/2002
Voluntary participation	Yes stated in the LoA /49/.	Yes stated in the LoA /50/.
Project contribution to SD	Yes stated in the LoA /49/.	Yes stated in the LoA /50/.

The validation of approval and participation has been done on the basis of § 39-42 and §46-48 of VVS ver 02/B02/ and validation team confirms that the proposed project activity meets the requirement of § 38 and § 45 of VVS ver 02 /B02/.

Validation of ODA

The proposed project does not involve any public funding from an Annex I Party, and the validation did not reveal any information that indicated that the project could be seen as a diversion of official development assistance (ODA) funding towards the Host Country. A confirmation in this regard has been submitted by the PP /36/.

Confirmation of MoC

The Modalities of Communication (MoC) /48/ was received from the PP and hence confirms to the requirement of § 54(a) of VVS version 02 /B01/. As required in Procedures for Modalities of Communication between Project Participants and the Executive Board, the Validation Team has verified that the name of authorised signatories for future communication related to the corresponding scope of authority with UNFCCC. The MoC /48/ has been checked as per the requirement of § 53 and § 57 of VVS ver 02/B02/ and found correct. The Validation Team confirms that the signatory and contact details on the MoC /48/ is authorized and credible and hence confirms to the requirement of § 53 of VVS ver 02.

Based on above assessment requirement of §58 of VVS ver 02 /B02/ has been met.

The PDD /01/ & /02/ hosted for GSC was in VVS track referring to paragraphs 62– 63, VVS version 02.0 /B02/. Carbon Check confirms that the PDD /01/ is based on the currently valid PDD template and is completed in accordance with the applicable guidance document “Guidelines for project design document (CDM-PDD) and the proposed new baseline and monitoring methodologies (CDM-NM)” ver. 1.0. EB 66, Annex. 08 under VVS/B02/ rack. This confirms the compliance of § 62 and 63 of VVS version 02/B02/.

3.2 Project Design document

3.3 Project Design

Referring to paragraphs 62 – 69, VVS version 02.0

This project is a Greenfield plant in a Greenfield Sugar Refinery (the Greenfield Industrial Consumer). The project is located in Apapa, Nigeria. The geo-coordinates of the project are Latitude: 06.4443° N Longitude: 03.3769° E, The coordinates are validated through Google earth and the satellite image given in PDD /01/ & /02/. The project will cogenerate power and steam at the site of the sugar refinery. In a first phase, two gas turbines will be installed, each with an installed capacity of 14.4MW_e (28.8MW_e total). /26/. The gas turbines will be fuelled with natural gas /26/. They will also be capable of firing diesel, as a stand-by fuel in periods when natural gas is not available. In the webhosted version of PDD this generating capacity of Turbines was not stated correctly hence a CAR-1 was raised and closed successfully.

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The energy requirement of the refinery includes process steam and power. Waste heat at the exhaust of each of the gas turbines will be passing through the waste gas stream of each of the two turbines, through each turbine's Heat Recovery Steam Generator (HRSG) to produce low pressure steam that will be utilized in the refinery. There are therefore 2 HRSGs, HRSG-1 and HRSG-2. The installed capacity of the HRSG-1, which is attached to the exhaust of the first turbine, is 30.55 Kg/sec (~110 tons/hr). HRSG-1 is designed to produce about 30 tonnes of steam/hour from heat recuperation from the exhaust of the first gas turbine, and the balance of the 80 tonnes of steam/hour through supplementary firing. HRSG-2, which is attached to the exhaust of the second gas turbine, is designed to produce 30 tonnes of steam/hour mainly from heat recuperation from the exhaust of turbine 2. The above information was validated through the specification of HRSG-1^{/27/} & HR SG-2 ^{/45/}. In the webhosted version of PDD this information was missing hence a CAR-1 was raised and closed successfully.

The Greenfield industrial consumer i.e. Sugar refinery will require 6.5MW of the power capacity of the cogeneration plant. This is validated through the TEFR Report^{/39/} and peer report ^{/40/}. The remaining power-generation capacity will be earmarked for the sale of electricity to Flour Mills of Nigeria PLC (FMNPLC) i.e. the project customer identified ex -ante. FMNPLC is an industrial house operating its unit adjacent to the sugar refinery site, which comprises of units for flour and rice milling, cement packaging, fertilizers and port operations. The electricity supplied from the project activity to the group will be distributed from a common main distribution system serving each of its divisions. In the baseline FMNPLC has been generating its own power through the mixture of Natural gas and Diesel based engines as detailed in the Power generation records ^{/42/}.

The Starting date of project activity is 19/07/2011 which is the date of first purchase of equipment for the project facility which is in line with CDM Glossary of terms; version 6. It has been verified by Carbon Check through the bank transaction slip^{/33/}, Accounts ledger^{/31/} and Bank statement^{/32/} it is the earliest date on which the project participant has committed to expenditures related to the implementation or related to the construction of the project activity as per the Glossary of CDM Terms^{/B08/}. The Project is under advanced stage of commissioning. As per the project schedule^{/18/} the plant is planned to be commissioned by December 2012.

The expected operational lifetime of the project activity is 20-25 years and this has been confirmed by Group Technical Director ^{/28/}. This has been also validated through the Manufacture's website ^{/B10/} which claims to be around 30 years. PP has assumed the life as 25 years and validation team confirms that it is appropriate

A renewable crediting period of Seven years has been chosen for the project, starting from 01/01/2013 or the date of registration, whichever is later.

The GHG emission reductions are estimated to be average 59,421 tCO₂e per year and 184,536 tCO₂e over the seven year crediting period.

Carbon Check confirms that the description of the proposed CDM project activity, as contained in the PDD sufficiently covers all relevant elements, is accurate and complete and that it provides the reader with a clear understanding of the nature of the proposed CDM project activity.

The main changes between the PDD ^{/01/} & ^{/02/} published for the 30 days stakeholder commenting period and the final version 04 submitted for registration are presented in the below table as follows:

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Referring to paragraphs 70 – 76, VVS version 02.0 /B02/

Subject	Webhosted PDD /01/ version 01 dated	Validated PDD /01/ version 05 dated 26/12/2012	Assessment
PDD	Template used was version 04.1	Template revised to Version 04.1	DOE confirms that most current version has been used and appropriate
Project Title	Golden Sugar 30 MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria	Golden Sugar 30 MW High Energy Efficient Combined Heat and Power (CHP) System in Apapa, Lagos, Nigeria	There is no change in the project title
Project Proponent	Golden Sugar Company Limited & Standard Bank Plc are the Project Proponents	Golden Sugar Company Limited & Standard Bank Plc are the Project Proponents	There is no change in the Project Proponent
Parties	Nigeria & Switzerland	Nigeria & United Kingdom	The Standard Bank has opted to change the Annex-1 approval , Refer CL-2
Capacity Of Turbine and Heat Recovery System Generator	Turbine 2 X 15 MW HRSG-System-110 t/hour	2 X 14.4 MW HRSG-1 30T/Hr and 100T/hr. With supplementary firing HRSG-2 30T/Hr.	CAR-1 & CL-1. The PDD has been revised to include detailed description.
Methodology & Tools	<ul style="list-style-type: none"> AM0102 version 01.0.0 /B03/ has been used Guidelines on Investment Analysis version 05 /B05/ “*Combined tool to identify the baseline scenario and demonstrate additionality” version 04 B05/ “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion version 02 	<ul style="list-style-type: none"> AM0102 version 01.0.0 /B03/ has been used Guidelines on Investment Analysis version 05 /B05/ “*Combined tool to identify the baseline scenario and demonstrate additionality version 04 ” B05/ “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion version 02 ” /B06/ 	DOE confirms that the versions used are valid
Additionality	Additionality approach has been based on Investment on comparison analysis EB 62 Annex 5 /B05/	Additionality approach has been based on Investment Comparison analysis EB 62 Annex 5 /B05/	The approach is acceptable and in line with EB 62 Annex 5
Estimated amount of annual average GHG emission reductions	72,553 tCO ₂ e	59,421 tCO ₂ e	DOE confirms that Estimates are based on the basis AM0102 version 1.0.0 conservative Refer CAR-01 &, CL-10

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3.4 Application of selected baseline and monitoring methodology

The project applies the Approved consolidated baseline and monitoring methodology AM 0102 version 01.0.0,^{/B03/}, which also uses the following tools:

- Methodological tool Combined tool to identify the baseline scenario and demonstrate additionality^{/B05/}
- Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion^{/B06/}

The selected version of the methodology at the time of hosting of PDD^{/01/} was AM0102 version 01.0.0 and the applied version of methodology is the latest version.

Applicability criteria for the baseline methodology are assessed by the validation team by means of document review and interview. It is agreed in the validation team's opinion that the project activity fully met the criteria as described below:

Applicability criteria as per methodology AM0102 VERSION 01.0.0	Means of Validation
This methodology applies to project activities that involve the installation of a Greenfield cogeneration facility (hereafter referred to as project facility) at the site of a Greenfield industrial consumer. The project facility supplies steam and electricity directly to the Greenfield industrial consumer for captive use and exports excess electricity to project customers and/or a grid. ¹ The project facility is designed primarily to meet the electricity & heat/steam demand of the Greenfield industrial consumer.	<p>The project involves installing a Greenfield cogeneration facility at the site of Golden Sugar Company Limited, which is the Greenfield industrial consumer. In its first phase, the project facility will supply heat/steam and electricity directly to the Greenfield industrial consumer for captive use and export excess electricity to a project customer. The project facility was designed primarily to meet the electricity & heat/steam demand of the Greenfield industrial consumer.</p> <p>The above were validated through</p> <ul style="list-style-type: none"> • Report on Technical Review of GSCL refinery Project^{/39/}. • Peer Technical review Final Report issued by IPRO Industrie project GMBH^{/40/} • Interviews with commissioning staff during site visit^{/48/}.
The methodology is not applicable to project activities involving the use of solid fuels. The fuel used at the project facility must be gaseous or liquid. If multiple fuels (excluding fuels used for start-up ² only) are expected to be used by the project facility, each type of the multiple fuels must be identified ex ante in the PDD	<p>The primary fuel that will be used for the project is natural gas. There is a provision in the turbines for use of Diesel which may be required for start-up or in the situations where the gas is temporarily not available. The above is validated through review of following</p> <ul style="list-style-type: none"> • Report on Technical Review of GSCL refinery Project^{/39/}. • Operational Manual^{/19/}. • Technical specification of Heat Recovery System generator^{/27/} • Interviews with commissioning staff during site visit^{/52/}
The heat-to-power ratio of the project cogeneration	The heat-to-power ration of the project

¹ Grid is defined as per the "Tool to calculate the emission factor for an electricity system".

² Start-up fuels shall not comprise more than 3% of total fuel used annually, on an energy basis;

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<p>facility shall be higher than 1.</p>	<p>cogeneration facility is 2.37 Validation team was provided the technical specification^{/14/, /45/, /26/, /27/} of HRSG and Generating capacity of Turbines. The calculations have been verified for the complete life time of the project and they will remain greater than 1</p>
<p>If the baseline scenario is to generate heat/ steam by a reference boiler (i.e. H2) as identified through the procedures contained in Annex I, the methodology is applicable only: (1) if the relevant information required in Annex I to identify the reference boiler is available and (2) if the fuel of the reference boiler, as identified through the procedures in Annex I, is the same as the project fuel or one of the multiple fuels used by the project facility.</p>	<p>Validation team was able to confirm that baseline scenario is to generate heat/steam by a reference boiler and Project meets the following applicability conditions requirement</p> <ol style="list-style-type: none"> 1) Since the project is in Food sector. PP had the requisite information^{/27/, /60, /61/} of the steam generating equipment's and systems installed in the food sector in applicable geographical area. This is validated through a compiled document "Reference Plant Data ^{/11/} 2) The fuel used in the reference plant is Natural gas which is the same as Project Fuel. This is validated through a compiled document "Reference Plant Data ^{/11/, & Heat Recovery Steam generator ^{/27/}}
<p>If the baseline scenario is to generate electricity entirely or partly by a reference captive power plant (i.e. P2 or P3) as identified through the procedures in Annex I, The methodology is applicable only (1) if the relevant information required in Annex I to identify the reference captive power plant is available and (2) if the fuel of the reference captive power plant, as identified through the procedures in Annex I, is the same as the project fuel or one of the multiple fuels used by the project facility</p>	<p>Validation team was able to confirm that baseline scenario is to generate Electricity through reference power plant and following applicability conditions are met</p> <ol style="list-style-type: none"> 1) Since the project is in Food sector. PP had the requisite information^{/27/, /60, /61/, /62/} of the Electricity generating equipment's installed in the food sector in applicable geographical area. This is validated through "Reference Plant Data ^{/11/} 2) The fuel used in the reference plant is Natural gas is the same as Project Fuel. This is validated through "Reference Plant Data^{/11/} , Technical specification of turbine^{/26/} & Heat Recovery Steam generator ^{/27/}
<p>The Greenfield industrial consumer shall satisfy all the following conditions:</p> <ul style="list-style-type: none"> • The owner of the project facility is also the owner of the Greenfield industrial consumer; • The Greenfield industrial consumer will consume all the heat/steam and all/part of the electricity produced by the project facility; <p>The project facility must provide all of the electricity and heat/steam demand of the Greenfield industrial consumer</p>	<p>Validation Team was able to confirm</p> <ul style="list-style-type: none"> • The owner of the project facility Golden Sugar Company Limited is also the owner of the Greenfield industrial consumer <p>The above was validated through</p> <ul style="list-style-type: none"> • Intimation to the Government^{/10/}, Director's Resolution^{/16/,} • ERPA between GSCL & Standard Bank^{/17/}, • GSCL Business permit^{/22/}. • The Greenfield industrial consumer

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	<p>will consume all of the heat/steam and part of the electricity produced by the project facility;</p> <ul style="list-style-type: none"> The project facility will provide all of the electricity and heat/steam demand of the Greenfield industrial consumer i.e. Sugar refinery. <p>The above is validated through review of following</p> <ul style="list-style-type: none"> Report on Technical Review of GSCL refinery Project_{/39/}. Operational Manual_{/19/}. Technical specification of Heat Recovery System generator_{/27/} <ul style="list-style-type: none"> Interviews with commissioning staff during site visit_{/52/}
<p>All of the following conditions apply to each of the project customers. If any of the condition is not met for project customer <i>i</i>, no emission reduction can be claimed for the power supplied to project customer <i>i</i>.</p> <ul style="list-style-type: none"> The captive power plant(s) of project customer <i>i</i> does not involve cogeneration; Project customer <i>i</i> does not receive/purchase electricity from sources other than its own captive plants, the project facility or the grid; The existing captive power plant(s) of project customer <i>i</i> shall have records on the fuel consumption and electricity production for one year prior to the implementation of the project activity; <p>All potential project customers shall be identified ex ante in the PDD. If power generated by the project facility is supplied to any customer not identified in the registered PDD, then the latest version of the "Procedures for notifying and requesting approval of changes from the project activity as described in the registered PDD" shall be followed.</p>	<p>There is only one project customer i.e. FMNPLC. The existing operations of the company have no requirement of steam hence there is no cogeneration facility available at the project customers site_{/48/}</p> <ul style="list-style-type: none"> The captive power plant of the project customer does not involve cogeneration; The above is validated through review of following Power Generation records 2006-11_{/42/} Site visit to Project customer_{/52/} FMNPLC does not receive /purchase electricity from sources other than its own captive plants or the project facility; The above is validated through review of following Request letter_{/44/} for disconnection was made on 06/04/2010 and acknowledgement dated 15/04/2010. Proof of payment of last electricity bill dated 29/04/2010_{/44/} Power Generation records 2006-11_{/42/} <p>FMNPLC have maintained the records of existing captive power plants s on the fuel consumption and electricity production for one year prior to the implementation of the project activity. The above is validated through review of Power Generation records for the year 2011_{/42/}</p>
<p>From the <i>Combined tool to identify the baseline scenario and demonstrate additionality</i>: This tool contains an applicability condition for the methodology but no specific applicability conditions for</p>	<p>There is no specific applicable condition for the existing project.</p>

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projects.	
From the <i>Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion</i> : “This tool provides procedures to calculate project and/or leakage CO ₂ emissions from the combustion of fossil fuels. It can be used in cases where CO ₂ emissions from fossil fuel combustion are calculated based on the quantity of fuel combusted and its properties.”	Validation team confirms that usage of the tool has been made to calculate Project and baseline emissions on the basis of quantity of fuel combusted and its properties. The detailed calculations are available in spread sheet of Emission reductions ^{/13/}

The selected baseline and monitoring methodology is an approved methodology. Based on above assessment, Carbon Check confirms that the project activity meets the applicability conditions of the methodology and concludes that the project activity correctly applies the approved baseline and monitoring methodology AM 0102 version 01.0.0./B03/, and confirms the requirement laid down in § 70, §73 to §76 & §77 of VVS version 02 /B02/.

3.5 Project boundary and baseline identification

3.5.1 Project boundary

As per the methodology^{/B03/}, the spatial extent of the project boundary includes following

- Project Facility-New Cogeneration Unit
- Industrial Consumer- New Greenfield facility Sugar Refinery
- Industrial Consumers & their existing Power Generation Units

The sources and sinks of greenhouse gas identified in the PDD^{/01/ & /02/} are deemed to be appropriate and assessed below:

	GHGs involved	Description
Baseline emissions	CO ₂	Main emission source in the combustion of fossil fuels to produce heat/steam at the project facility Main emission source in the combustion of fossil fuels to produce electricity at the project facility. Main emission source in the combustion of fossil fuels to produce electricity for Project Customers
Project emissions	CO ₂	Main emission source in the combustion of fossil fuels to produce heat/steam and electricity at the project facility

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In summary, the project boundary was correctly identified in accordance with the methodology AM 0102 version 01.0.0_{/B03/}, All greenhouse gas emissions occurring within the proposed project activity boundary as a result of the implementation of the proposed CDM project activity have been appropriately addressed in the PDD _{/01/ & /02/}.

The identified project boundary and selected sources of emissions are justified for the project activity. The validation of the project activity did not reveal other greenhouse gas emissions occurring within the proposed CDM project activity boundary as a result of the implementation of the proposed project activity which are expected to contribute more than **1% of the overall expected average annual emission reduction, with respect to the methodology applied.**

Based on the review of supporting documented evidence provided by the project participant, Carbon Check can confirm that the project boundary and emission sources described in the PDD _{/01/ & /02/} are accurate and complete, and also that the selected sources and gases are justified for the proposed project activity.

3.5.2 Baseline Identification

As per the “Combined tool to identify the baseline scenario and the assessment of Additionality version 4.0”_{/B05/} PDD Identifies all alternative scenarios that

- (a) Are available to the project participants,
- (b) Cannot be implemented in parallel to the proposed project activity, and
- (c) Provide the same output as the proposed CDM project activity.

In view of above guidance PP has identified additional scenarios as applicable to the project activity in addition to scenarios already identified in AM0102 Version 1.0.0 and included for

- I. Alternatives for meeting the electricity demand of the Greenfield Sugar Refinery in the absence of the project activity.
- II. Alternatives for meeting the heat/steam demand of the Greenfield Sugar Refinery in the absence of the project activity;
- III. Alternatives for meeting the electricity demand FMNPLC the Project customer in the absence of the project activity

Step-1A:-The alternative scenarios considered for each of the measure are tabulated below:-

- (a) Alternatives for meeting the electricity demand of the Greenfield Sugar Refinery in the absence of the project activity;

	Possible scenario	Validation Assessment
P1	The proposed project activity not undertaken as a CDM project activity	This Scenario is Plausible
P2	Electricity is supplied partly from a grid and partly from an off-grid captive power plant applying the fuel and technology identified for the reference captive power plant through the procedures in Annex 1	This scenario is not Plausible as Nigeria has acute shortage of electricity generation capacity. Validated through Conference papers and Assessment of energy usage in Food sector _{/B11/./B12 &/B13/}
P3	Electricity is supplied from an off-grid captive power plant applying	For determining the Reference Power Plant the PP has carried out detailed survey of the Projects in Nigeria _{./11/./46/./60/./61/./62/} . The entire geographical

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	<p>the fuel and technology identified for the reference captive power plant. This scenario has two options:</p> <p>P3(a) The reference plant is implemented at the minimum capacity (number of power units) required to meet the full power demand of the project activity,</p> <p>P3(b) The reference plant is implemented at the minimum capacity (number of power units) required to meet 50% of the power demand of the project activity;</p>	<p>boundary of Nigeria was taken as the area covered & more than five candidates among the list of identified power plants were considered suitable</p> <ul style="list-style-type: none"> Only power plants that have been constructed in the past 5 years were included; Only power plants that have capacities in the range 50% to 150% of the project plant were included; Only power plants that supplied at least 50% of their energy output in the food sector were included; None of the power plants included have been registered as CDM Project Activities. <p>Carbon Check confirms that Information is significantly complete and choice of the reference plant was made on the basis of Highest Design efficiency 38% & lowest Emissions Ratio 0.531 (tCO₂/MWh)</p> <p>The scenario is Plausible</p>
P4	Electricity is imported from the Grid;	<p>This scenario is not Plausible as Nigeria has acute shortage of electricity generation capacity. Validated through Conference papers and Assessment of energy usage in Food sector, /B11/,/B12 &/B13/,/63/,/64/,/66/,/69/,/70/,/72/</p>
P5	Electricity is supplied from a cogeneration plant fired with a different fossil fuel than the project activity;	<p>The practise for Cogeneration is not a very common practise in Food sector. Validated through /B14/ & /B11/ /63/,/64/,/66/,/69/,/70/,/72/</p>
P6	Electricity is supplied from a biomass fired cogeneration plant.	<p>There is no current practise in Nigeria to use biomass for electricity generation. Country has long-term aim to increase the nation's overall electric power generation by 35% from biomass and to reduce the reliance on conventional sources for electricity generation. This is planned for the years 2016- 2025. Validated through /B14/,/47/,/63/,/64/,/66/,/69/,/70/,/72/</p>

(b) Alternatives for meeting the heat/steam demand of the Greenfield Sugar Refinery in the absence of the project activity;

	Possible scenario	Validation Assessment
H1	The proposed project activity not undertaken as a CDM project activity;	The scenario is possible
H2	Steam is supplied by a stand-alone boiler applying the fuel and technology identified for the reference boiler through the procedures in Annex 1	<p>For determining the Reference Power Plant the PP has carried out detailed survey of the Projects in Nigeria. /11/, /46/, /60/, /61/, /62/. The entire geographical boundary of Nigeria was surveyed and found that there are not enough plants which meet the following requirements Only power plants that have been constructed in the past 5 years were included;</p> <ul style="list-style-type: none"> Only power plants that have capacities in the range 50% to 150% of the project plant were included;

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		<ul style="list-style-type: none"> Only power plants that supplied at least 50% of their energy output in the food sector were included; None of the power plants included have been registered as CDM Project Activities This was validated through reviewing the list of registered projects in Nigeria. <p>Hence to have minimum numbers of Five candidates, the region was extended to include Ghana.</p> <p>Carbon Check confirms that Information is significantly complete and choice of the reference plant was made on the basis of Highest Design efficiency 88% & lowest Emissions Ratio 63.64 (tCO₂/TJ) The scenario is plausible</p>
H3	Steam is supplied from a cogeneration plant fired with a different fossil fuel than the project activity;	The practise for Cogeneration is not a very common practice in Food sector. Validated through /B14/ & /B11/ The scenario is not Plausible
H4	Steam is supplied by a biomass fired cogeneration plant	There is no current practise in Nigeria to use biomass for Industrial Steam generation. Validated through /B14/ & /47/ The scenario is not Plausible

(c) Alternatives for meeting the electricity demand FMNPLC the Project customer in the absence of the project activity.

	Possible scenario	Validation Assessment
B1	The project customer imports the electricity from the grid;	FMNPLC has surrendered grid connection /44/ due to poor availability of power. The scenario is not Plausible
B2	The electricity is supplied from the existing off-grid captive fossil fuel fired power plan	This is a baseline scenario, FMNPLC have their captive Diesel & NG based units /42/ The scenario is baseline scenario
B3	The electricity is supplied partly from the grid and partly from the existing off-grid captive fossil fuel fired power plant	FMNPLC has surrendered /44/ grid connection due to poor availability of power. The scenario is not Plausible
B4	The electricity is supplied from a new off-grid captive fossil fired power plant (with a capacity corresponding to the amount of electricity to be imported from the project activity)	FMNPLC have their captive NG based units /42/. Any other fossil fuel would result in higher emissions in the baseline The scenario is not Plausible
B5	The electricity is supplied from a new on-site renewable energy power plant	There is no current practise in Nigeria to use biomass for electricity generation. Country has long-term aim to increase the nation's overall electric power generation by 35% from biomass and to reduce the reliance on conventional sources for electricity generation. This is planned for the years 2016- 2025. Validated through /B14/ & /47/ The scenario is not Plausible

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B6	The electricity is supplied from a new on-site fossil-fuel fired cogeneration plant	FMNPLC have their captive NG based units. ^{/42/} Any other fossil fuel would result in higher emissions in the baseline. The scenario is not Plausible
B7	The electricity is supplied from a new on-site biomass fired cogeneration plant	There is no current practise in Nigeria to use biomass for electricity generation. Country has long-term aim to increase the nation's overall electric power generation by 35% from biomass and to reduce the reliance on conventional sources for electricity generation. This is planned for the years 2016- 2025. Validated through ^{/B14/,/47/} The scenario is not Plausible
B8	The proposed project activity not undertaken as a CDM project activity	This is not a plausible scenario as proposed project is a CHP Project and project customer will not invest in the CHP plant because it does not require steam for its operations.

Carbon Check confirms that identification of above scenarios is realistic.

Further analysis of above scenarios have been carried out appropriately using the combined tool to identify and assessment of additionality version 4.0.^{/B05/}

The Greenfield industrial consumer's cogeneration plant and the project customer's existing captive power plant are both fueled with natural gas. Any other fossil fuel would result in higher emissions in the baseline. Therefore, to be conservative, all of the scenarios involving the use of a different fossil fuel than natural gas (P5, H3 and B6) were eliminated from further consideration as baseline scenarios. The approach is realistic.

Step-1b all of the alternative scenarios listed above for the Greenfield industrial consumer and the project customer are consistent with applicable laws and regulations of Nigeria. This is validated through the permissions and environmental clearances available for this project

^{/05/, /06/, /09/, /21/, /22/, /23/, /24/}

Step-2a- Following barriers have been identified which will prevent the implementation of alternate scenarios and Validation Team details how the same were validated:

Use of biomass as an industrial energy generation fuel is not common practice in Nigerian industries.	There is no current practice in Nigeria to use biomass for electricity generation. Country has long-term aim to increase the nation's overall electric power generation by 35% from biomass and to reduce the reliance on conventional sources for electricity generation. This is planned for the years 2016- 2025. Validated through ^{/B14/,/47/}
Other renewable-energy options apart from biomass are also not likely to be considered for energy generation in this project	Other renewable energy options such as wind, hydro are also not available to the project proponent as these are not the prevalent generation sources in the country. Moreover there are no such plans in near future to harness renewable energy in Nigeria. This is evidenced from the reports ^{/13/, /14/ &/15/, /69/, /70/, /72/} on the Power situation in the country and the Electric Power sector reforms ^{/43/} initiated by the Nigerian Government.
The project customer identified for this project does not require steam	This is validated through the review of Project Customer plant record and site visit that the FMNPLC ^{/44/} does not have any steam requirement so there is no reason it would consider a steam

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for its operations. It would not consider a cogeneration system due to the difficulty of getting off takers for the steam	generation facility.
Existing captive power plant currently used by the project customer to meet their power demand, it is implausible that the project customer would replace its existing power plant with a new off-grid captive fossil-fuel-fired power plant with a capacity corresponding to the amount of electricity to be imported from the project activity	<p>The off grid generating facility is maintained in Good working conditions and do not see any reason that the PP will replace its existing power plant with a new off-grid captive fossil-fuel-fired power plant with a capacity corresponding to the amount of electricity to be imported from the project activity. This was validated through the Plat record and the years of commissioning of their existing facilities.</p> <p>The cost of power production for the project customer using their existing captive power plant is Naira 24/kWh_{/55/}. The agreed price for power to be purchased by the project customer from the Greenfield industrial consumer is Naira 22/kWh_{/54/}. Therefore, the project consumer would not produce their own power using their existing captive power plant if that power is available from the Greenfield industrial consumer.</p>
The very low reliability of power supply from the Nigerian grid is another crucial technology barrier	This is evidenced from the reports _{/13,/14/ &/15/,/69/,/70/,/72/} on the Power situation in the country and the Electric Power sector reforms _{/43/} initiated by the Nigerian Government

Out of the alternatives listed above P1, H1 and B8 correspond to the project activity not implemented as a CDM project. Therefore put together, all three possible scenarios, forms one combined baseline alternative identified as listed in the table below.

Since the cost of power production for the project customer using their existing captive power plant is Naira 24/kWh and power purchase agreement with the Project is 22 Naira/kwh. It can be safely assumed that, the project consumer would not produce their own power using their existing captive power plant if that power is available from the project. Hence the combinations of P3a + B2, and P3b + B2 are plausible baseline scenario

Hence, Carbon Check confirms that the Alternate scenarios which are not facing barriers are tabulated below.

Combined Baseline Alternatives	Power supply to the Greenfield industrial consumer	Heat supply to the Greenfield industrial consumer	Power supply to the project customer
The Project without CDM	P1	H1	B2
Scenario A*	P3a	H2	B2
Scenario B*	P3b	H2	B2

* The reference plant is implemented at the minimum capacity (number of power units) required to meet the full power demand of the project activity, and the reference plant is implemented at the minimum capacity (number of power units) required to meet 50% of the power demand of the project activity.

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Carbon Check concludes that the approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and that the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

Carbon Check was able to verify all the documented evidence listed above during the validation process and can confirm that all the assumptions and data used by the project participants are listed in the PDD. The DOE has also cross checked the reference of the relevant national and sectoral policies /43/, /63/ & /64/ mentioned in the PDD.

3.5.3 GHG Emission Reductions:

The emission reduction calculation has been done as per applied methodology AM0102 version 01.0.0_{/B03/}. Carbon Check confirms the parameters available at the time of validation are correctly identified and values used are appropriate and conservative. The parameter and the values estimated for the project case are on the basis of technical specification of the equipment and operational hours.

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The equations for determining the emission reduction calculations are tabulated below:-

Base Line Emissions BE_y	$BE_y = BE_{GIC,p,y} + BE_{GIC,ST,y} + \sum_i BE_{PC,i,y} + BE_{grid,y}$ <p>BE_y -Baseline emissions in year y (t CO₂/yr.)</p> <p>$BE_{GIC,p,y}$- Baseline emissions from the production of electricity supplied to the Greenfield industrial consumer in year y (t CO₂/yr)</p> <p>$BE_{GIC,ST,y}$-Baseline emissions from the production of heat/steam supplied to the Greenfield industrial consumer in year y (t CO₂/yr)</p> <p>$BE_{PC,i,y}$ - Baseline emissions from the production of electricity supplied to project customer i in year y (t CO₂/yr)</p> <p>$BE_{grid,y}$ -Baseline emissions from the production of electricity supplied to the grid in year y (t CO₂/yr) is equal to Zero since there is no export to the grid.</p>
$BE_{GIC,p,y}$	$BE_{GIC,p,y} = EG_{GIC,y} \times 0.0036(TJ / MWh) \times \frac{\min(EF_{CO_2,RPF}, EF_{CO_2,PJ,y})}{\eta_{RP}}$ <p>$EG_{GIC,y}$ - Quantity of electricity generated by the project facility that is supplied to the Greenfield industrial consumer in year y (MWh/yr)</p> <p>$EF_{CO_2,RPF}$ -CO₂ emission factor of the fuel used by the reference captive power plant (t CO₂/TJ)</p> <p>η_{RP}-Design energy efficiency of the reference captive power plant (fraction)</p> <p>$EF_{CO_2,PJ,y}$ -CO₂ emission factor of the fuel(s) used by the project facility in year y (t CO₂/TJ) is calculated as below</p> $EF_{CO_2,PJ,y} = \frac{\sum_i (EF_{CO_2,i,y} \times NCV_{i,y} \times FC_{i,y})}{\sum_i (NCV_{i,y} \times FC_{i,y})}$ <p>Where:</p> <p>$EF_{CO_2,PJ,y}$ = CO₂ emission factor of the fuel(s) used by the project facility in year y (t CO₂/TJ)</p> <p>$EF_{CO_2,i,y}$ = Weighted average CO₂ emission factor of fuel type i in year y (t CO₂/GJ), monitored as per .Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion.</p> <p>$NCV_{i,y}$ = Weighted average net calorific value of the fuel type i in year y (GJ/mass or volume unit), monitored as per .Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion.</p> <p>$FC_{i,y}$ = Quantity of fuel type i combusted in process j during the year y (mass or volume unit/yr), monitored as per .Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion.</p>
$BE_{GIC,ST,y}$	$BE_{GIC,ST,y} = HG_{GIC,y} \times EF_{RB}$ <p>Where:</p> <p>$HG_{GIC,y}$ = Quantity of steam/heat generated by the project facility that is supplied to the Greenfield industrial consumer in year y (TJ/yr)</p> <p>EF_{RB} = Emission factor of the reference boiler, which would have supplied steam/heat to the Greenfield industrial consumer in the absence of the project activity in year y (t CO₂/TJ)</p> <p>The emission factor of the reference boiler EF_{RB}:</p>

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	$EF_{RB} = \frac{\min(EF_{CO2,RBF}, EF_{CO2,PJ,y})}{\eta_{RB}}$ <p>Where $EF_{CO2,RBF}$ = CO2 emission factor of the fuel used by the reference boiler (t CO2/TJ)</p> <p>$EF_{CO2,PJ,y}$ = CO2 emission factor of the fuel(s) used by the project facility in year y (t CO2/TJ)</p> <p>η_{RB} = Design energy efficiency of the reference boiler (fraction)</p>
BEPC, i,y	$BE_{PC,i,y} = \min \left\{ EG_{PC,i,y}, \sum_j EG_{cap,i,j} \right\} \times \min \{ EF_{i,j} \}$ <p>Where: $EG_{PC,i,y}$ = Quantity of electricity generated by the project facility that is supplied to project customer i in year y (MWh/yr) $EG_{cap,i,j}$ = Historical maximum electricity generation of existing fossil fuel fired captive power plant j at the site of project customer i (MWh/yr)</p> <p>$EF_{i,j}$ = Emission factor of existing fossil fuel fired captive power plant j at the site of project customer i (t CO2/MWh)</p> $EF_{i,j} = \frac{\sum_k (FC_{i,j,k} \times NCV_{i,j,k} \times EF_{CO2,k})}{EG_{i,j}}$ <p>Where Where: $FC_{i,j,k}$ = Quantity of fossil fuel type k fired in captive power plant j in the year prior to the implementation of the project activity (mass or volume unit) $NCV_{i,j,k}$ = Net calorific value of fossil fuel type k fired in captive power plant j (GJ/mass or volume unit)</p> <p>$EF_{CO2,k}$ = CO2 emission factor of fossil fuel type k (t CO2/GJ) $EG_{i,j}$ = Quantity of electricity generated in captive power plant j at the site of project customer i in the year prior to the implementation of the project activity (MWh)</p>
Project Emissions PE_y	<p>Total project emissions:</p> $PE_{FC,j,y} = \sum_i FC_{i,j,y} \times COEF_{i,y}$ <p>$FC_{i,j,y}$ = The CO2 emissions from fossil fuel combustion at the project facility during the year y</p> <p>$CO_{EFi,y}$ = The CO2 emission coefficient of natural gas and calculated as below</p> $CO_{EFi,y} = NCV_{i,y} \times EF_{CO2,i,y}$ <p>$NCV_{i,y}$ = Net calorific value of natural gas $EF_{CO2,i,y}$ = CO2 emission factor of natural gas</p>
Leakages	<p>Natural gas consumption for the project activity is less than natural gas consumption in the baseline: this is the source of emission reductions for this project activity. Hence, fugitive methane emissions associated with fuel extraction, processing, liquefaction, transportation, re-gasification and distribution of natural gas are less for the project activity than in the baseline case. In view of above Leakage emissions are Zero</p>
Emission Reduction ER_y	$ER_y = BE_y - PE_y - LE_y$

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3.6 Additionality

The project is a large scale project. Therefore, in accordance with AM0102 version 01.0.0^{/B03/}, the additionality of the project has been demonstrated based on the valid version of the "Combined Tool for demonstration and assessment of additionality (Ver 04.)"^{/B05/}.

3.6.1 CDM consideration

Starting date of the project activity is 19th July , 2011^{/33/} which is the date of first payment toward payment of USD 1,641,207 of equipment for the project facility which is in line with CDM Glossary of terms; version 6. This was validated through the bank payment advice^{/33/} of the above value and company's ledger of that date where value of. 251022610.65 NGN and the midpoint weekly currency conversion rate for the week July 18-24, 2011 on <http://www.oanda.com/currency/historical-rates/>

Since this project activity is a new project activities with a starting date on or after 2 August 2008: PP have notified the Host Party DNA and the UNFCCC on 10th February 2011 which was prior to the start date of the project activity. The confirmation for receipt of information has been confirmed by UNFCCC website^{/34/} <http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html>

The information to DNA Nigeria was sent through letter dated 4th February 2011^{/10/} and DNA confirmed by giving no objection letter^{/21/} to the project on 04th April 2011. This is in line with EB 62 Annex 13.

In conclusion, in accordance with the requirements of the VVS^{/B02/}, Carbon Check can confirm that the CDM was considered seriously in the decision to implement the project activity.

4.6.2 Identification of Alternatives

As discussed in section 3.5.2 the plausible alternative scenarios are tabulated below:

Combined Baseline Alternatives	Power supply to the Greenfield industrial consumer	Heat supply to the Greenfield industrial consumer	Power supply to the project customer
The Project without CDM	P1	H1	B2
Scenario A- *	P3a	H2	B2
Scenario B-#	P3b	H2	B2

* The reference plant is implemented at the minimum capacity (number of power units) required to meet 100% of the power demand of the project activity. The reference plant is implemented at the minimum capacity (number of power units) required to meet 50% of the power demand of the project activity

3.6.3 Barrier Analysis

The project is demonstrating additionality through Investment Analysis

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3.6.4 Investment Analysis

Approach for demonstrating additionality

The proposed project activity is a large scale project activity. And identifies Therefore, in accordance with AM0102, version 01.0.0 the additionality of the project has been demonstrated based on the valid version of the Combined tool to identify the baseline scenario and demonstrate additionality version 4.0"/_{B05/} Step 3 and the Guidelines on the Assessment of Investment Analysis (Version 05) /_{B05/}. For the above reasons, this approach has been assessed to be appropriate for the assessment of additionality for this project activity

Appropriateness of Investment Analysis

As per above scenario the project proponent has to make the investment decision irrespective of the return since the Nigerian grid is not in position to meet either of the requirements of Greenfield customer as well as project customer. In addition PP has to meet the steam requirement of Greenfield customer. PP has followed Paragraph 19 of the Guidelines on the Assessment of Investment Analysis (Version 05)/_{B05/} "If the proposed baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services, a benchmark analysis is not appropriate and an investment comparison analysis shall be used." In this case each of the alternative scenario requires investment anyhow and baseline emissions are based the alternatives, the investment comparison approach is the most appropriate approach to make a business decision and choose the most appropriate scenario. Carbon Check confirms that the approach is appropriate and in line with EB 62 Annex 05/_{B05/}

Appropriateness of Financial Indicator

Since the project involves investment (cash outflow) and end product, electricity & steam are a saleable service having economic value (cash inflow), it is possible to use Pre Tax Project IRR as financial indicator for carrying out Investment comparison Analysis. Accordingly, project developer has used Pre-tax- project IRR as financial indicator. Therefore, the selected financial indicator conforms to option II of sub-step 2b of Additionality Tool, Annex 5, EB 62/_{B05/} .

Validation of input parameters

The proposed project activity envisages generating electricity and steam through a Natural gas based turbines and waste heat recovery steam generators. Accordingly, as envisaged in the PDD, the PP has furnished all the input parameters used in the computation of the financial indicator. In this context, it may be stated that in the webhosted version the installed capacity for Power generation was considered at 30 MW, however as per the name plate details of turbines it is 2 X 14.4 MW i.e.28.8 MW. Similarly in the web hosted version of PDD the specifications of HRSGs were not mentioned correctly Consequent a CAR-01 & CL-01 raised by the DOE.

The input parameters available in the public domain were used to demonstrate additionality of the project. PP submitted a revised project with an installed capacity of 28.8 MW once again based on input parameters available in the public domain. However some of the input values used were not substantiated, as the information could not be validated Hence a CAR - 8 was raised by DOE and successfully closed.

PP has opted for the use of an investment comparison analysis to quantify the relative financial performance of the project plant compared to the reference plant option.

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Accordingly, returns from the project plant and two reference plant scenarios have been calculated. Revenues from the supply of electricity and steam to the Greenfield Industrial Customer have been considered in the financial model because sugar refinery and power plant operations (including steam generation) operate under different cost centres. This was validated by reviewing Budget monitoring sheet /11/ for the month of July 2012. Furthermore, the revenue for the steam and electricity supplied to the Greenfield Industrial Consumer has been considered in the investment analysis for both the reference plant scenarios as well as the project plant. The price of electricity supplied to the Greenfield Industrial Consumer has been taken from the MYTO, which is the guiding principle recommended by the Nigerian Electricity Regulatory Commission, while the steam price has been estimated using standard thermodynamic principles usually utilized for steam valuation for a standalone boiler. For this, the PP has used an internationally accepted valuation method recommended by the US DOE. The price of steam supplied to the Greenfield Industrial Consumer from the Reference Plant has therefore followed this approach. The price of steam supplied to the Greenfield Industrial Consumer from the project CHP plant was estimated from this standalone boiler steam price, taking into consideration the difference in energy efficiencies of the Reference Plant compared to the CHP plant. The DOE validated the methods used in valuation of the steam from both the Reference Plant and the project plant. In the opinion of validation team, these revenues have been correctly and conservatively considered in the financial model utilized in the analysis of the project and the Reference scenarios considered.

The viability of the project was discussed in the meeting of the Board of Directors held on 24/11/2010 and the investment decision was taken by the Board based on the acceptance of TEFR, report. Initially the report^{/39/} suggested only one turbine of 15 MW but a further peer review was carried by another independent consultant^{/40/} which suggested that in order to improve the thermal efficiency of the system and minimal firing in HRSG-1 an additional turbine and a boiler should be installed. The information regarding electricity tariffs and prices of natural gas comes from the governmental sources. Through their official Multi years tariff Orders. The input parameters used for reference plants have been collected through emails communications, which provides the details of each of the input parameters used.

Validation team's assessment on the appropriateness of the same is given in the following table:

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PROJECT PLANT		
Parameter	Value applied	Source of Validation
Capacity of Turbine	2X14.4 MW	The value was verified with the name plate details & Technical specification ^{/26/} of Turbine.
Steam Demand Of Refinery	80T/Hour	The value has been verified with the technical Reports and Performa Invoices of the suppliers ^{/27/,/39/,/45/}
Capacity of HRSGs HRSG-1 HRSG-2	30T/ Hr from waste gas 110T/HR. From waste gas & supplementary firing 30T/ Hr from waste gas	The above information is validated through the technical specifications of both boilers as well as the TEFR & its Peer review reports.
Total Capital Cost of equipment	55,256,000 USD	<p>The project cost includes the following components</p> <p>Plant-1 (28,067,830 USD). DOE validated this cost by review of offer letter^{/29/} issued by Star Trading Company & Power Plant Budget Sheet ^{/30/}. The above offer was for complete equipment required for the plant i.e.</p> <ul style="list-style-type: none"> • Gas Turbine set (1set) • Fuel gas compressor package(4 set) • 11KV Switchgear (56 sets) • 33KV Switch gear (4 sets) • Natural Gas heat Recovery Steam generator Plant. (1set) <p>Plant-2 (22,311,374 USD) - DOE validated this cost by review of offer letter^{/29/} issued by Star Trading Company & Power Plant Budget Sheet ^{/30/}. The above offer was for complete equipment required for plant i.e.</p> <ul style="list-style-type: none"> • Gas Turbine set (1set) • Fuel gas compressor package(4 set) • Natural Gas heat Recovery Steam generator Plant. (1set) <p>The cost of plant 1 & 2 combined is 50,379,000 USD and is 91% of the total Capital Cost.</p> <p>Other costs included in Capex 755,837,000 NGN =4,877,000 USD (calculated @155NGN/USD)</p> <p>Transportation and 379,156,000 NGN import duty</p> <p>Foundation & Civil work 91,776,000 NGN</p> <p>Installation &Commissioning 284,905,000 NGN</p> <p>DOE cross checked the above with the Power Plant Budget, Sheet ^{/30/}.</p> <p>The costs considered in the financial indicator Includes the major costs of equipment's for which</p>

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		the Proforma invoices were presented. Since these documents were available at the time of decision making, the value conforms to guidance 6 of Annex 5, EB 62 /B05/. The total cost of project is further cross checked as per Board Note /16/J37/J41/ dated 22/11/2012 and amended Capex approval dates.
Plant Load Factor	70~90%	PP has assumed 70% PLF for the First two years, 80% for the 3 rd year & 90% for rest of the plant Life time. This PLF is assumed based on PLF of Sugar Refinery. PP is envisaging when a new facility is commissioned, plant may not operate at full PLF due to operational reasons and bottlenecks post commissioning. As these bottlenecks are removed, the PLF gradually ramps up until it reaches a stable value of operations. According to GS technical people, they believe they will be able to reach a PLF of 70% in the first year and gradually ramp up to 90% within the first four year post commissioning. This is further validated by information available in the public domain// where a plant load factor of 90% is assumed. DOE further conducted a check by keeping PLF at 90% throughout the period and observed that even by doing this scenario still remains the least attractive. The PLF is further validated through a case study/B12/. The TEFR review by Bookker Tale has been initiated by the prime lender of the Project before a loan was sanctioned. Hence it complies with the requirement of EB-48 Annex11.
Technical Life time for the project activity	25 Years	The expected operational lifetime of the project activity is 20-25 years and this has been confirmed by Group Technical Director /28/. This has been also validated through the Manufacture's website /B10/ which claims to be around 30 year. PP has assumed the life as 25 years and validation team confirms that it is appropriate. However Investment comparison analysis has been carried out for 20 Years which is in line with Annex 5, EB 62 /B05/
Cost of Electricity supplied to Greenfield customer	15.8 Naira/KWh	This rate has been Taken from Multi Year Tariff order (MYTO) /59/ for the period July 2008 to June 2013 which was available with PP at the time of Investment comparison. DOE confirms that the price is kept the same if the Greenfield customer would have drawn power from the Nigerian Grid. The prices fixed in the Multi year Tariff order (MYTO) /59/. Issued by Nigerian Electricity regulatory commission. The commission has fixed tariff of 15.2 Naira/KWh for the year 2011 & 15.8 Naira/KWh for the year 2012 .Hence the price is in line with the market price supplied by Nigerian Power companies.
Cost of Steam supplied to Greenfield Customer	13.01 US\$/tonne of Steam for the year 2013	<p>The price (cost) of steam supplied to Greenfield customer is determined by the following equation</p> $P_{SCHP} = (RP_{eff}/CHP_{eff}) * P_{SRP}$

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		<p>Where:</p> <p>P_{SCHP} = Price of steam produced in the CHP and supplied to the Greenfield (US\$/tonne of steam)</p> <p>$RP_{eff}$ = Reference Plant (boiler and Power Plant) combined energy efficiency (%)</p> <p>CHP_{eff} = CHP energy efficiency (%)</p> <p>P_{SRP} = Price of Steam produced in the Reference Boiler</p> <p>DOE checked the applicability the above equation to cross check with spread-sheet and found value of 13.01 US\$/tonne of Steam for the year 2013.</p> <p>The basic relationship between the price of steam produced in a stand-alone boiler and a CHP is that as a result of the higher efficiency of the CHP, the unit price of steam is lower).</p> <p>The price of steam will escalate on the basis Annual Average increase in Natural Gas Prices.</p> <p>DOE confirms that this approach is correct and conservative</p>
Inflation % Cost of Electricity supplied to Greenfield customer	11%	<p>The above cost is fixed up to July 2013^{/59/}. Based on the tariff applicable in 2010-2011-2012. It has been calculated that the applicable electricity tariff have gone up by 11%. Hence the same been assumed as inflation expected in future tariffs and will be used for</p>
Cost of Electricity supplied to Project Customer	22 Naira/KWh & Maximum demand changes of 21600000 Naira/year	<p>The Project customer is Flour Mills of Nigeria PLC (FMNPLC) and the Project owner is Golden Sugar Company Limited (GSCL) is the wholly owned subsidiary of the above, However both are separate legal entities and registered as separate companies under the Nigerian Laws. This was validated by review of their respective registration documents with Corporate affairs Commission ^{/76/,/77/,/78/}.</p> <p>In June 2011 GSCL agreed to sell 13000MWH /month at the price of 22Naira/unit to FMNPLC. This intent was documented in a Letter of intent (LOI) dated 27th June 2011 ^{/75/}. The LOI stated that a formal agreement would be signed within six months. A legal Power Purchase agreement was signed between GSCL & FMNPLC^{/35/ &/54/} dated 01/08/2011.</p> <p>The price fixed in the LOI and subsequent agreement is higher than the prices fixed in the Multi year Tariff order (MYTO)) ^{/59/}. Issued by Nigerian Electricity regulatory commission . The commission has fixed tariff of 15.2 Naira/KWh for the year 2011 & 15.8 Naira/KWh for the year 2012 . Hence the tariff of 22 Naira/KWh as per power purchase</p>

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		agreement is higher than the rate fixed by the commission.
Price of Natural Gas	25.69 (2012) 29.23(2013) 32.73(2014) Naira/Nm ³	The Price is validated from the Circular NGC /MD 38/Vol.1 announcing the Domestic natural gas pricing dated 29/10/2010/ /56/
Annual Average increase in Natural Gas Prices	6%	The Price is validated from the Circular NGC /MD 38/Vol.1 announcing the Domestic natural gas pricing dated 29/10/2010/ /56/ for the period 2010-14
Naira- US\$ Rate conversion	160 Naira/USD	The highest conversion during the period June 2010- May 2012 have been taken from the historical rates drawn from Onanda.com /38/
Interest during construction	7%	The interest rate has been taken from loan agreement between the Parties GSCL & Standard Bank Plc. /37/

REFERENCE PLANT

During the course of validation, the team considered and cross-checked all input parameters for the reference plant and also ascertained compliance with guidance 6 of investment analysis guidelines, annex 05, EB 62 (refer to the table below for a detailed assessment). As explained in the PP response above, the validation team confirms that the PP while conducting the survey for the reference plant (as per the procedure contained in the approved methodology) /11/, /60/ and inviting quotation/61/, /62/ for the reference plant, had ensured that all input parameters remained valid for the period of start date (i.e 19/07/2011, which is also the date of final investment decision as clarified in CAR-08 in the Validation Report) of the project activity and hence complying with the requirements of guidance 6 of annex 05, EB 62. The validation team therefore confirms that all input values used in all investment analysis are valid and applicable at the time of the investment decision taken by the project participant.

Please refer to the assessment below for each cross check method utilised by the validation team for the input parameters of the Reference plant:

Capacity of a Single GEJ 620 Chosen as a Reference Power Plant	3,039 KW	The Reference Plant data has been crosschecked through compiled documents developed by GSLC on the basis of the email interactions /60/ and indicative costs quoted by the Clarks energy /62/ Capacity of the reference power plant has been identified as per the procedure provided in the annex 1 of the applied methodology.
Minimum Nos of GEJ 620 estimated to implement the P1: full design capacity P2: 50% of Design Capacity	P1: 10 units of 3.039 MW turbines P2: 05 units of 3.039 MW turbines	The Project has identified two baseline scenarios P1 & P2 P1 - 100% of Full design capacity is installed and commissioned.- Since the plant capacity is 30MW Ten units of GE 620 are appropriate P2- 50% of Design capacity i.e. 05 units of GE 620 are appropriate . The numbers chosen have been cross checked with Reference Plant data /11/, /60/
Capacity of a Single Boiler Chosen as a Reference Boiler	16 T/Hr	The data has been /11/, /60/ validated through the Reference Plant data /11/ by GSLC. Capacity of the reference boiler is based on the process provided in the annex 1 of the applied methodology generators substantiated with evidence

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Minimum Nos of reference boiler	06	The numbers are in line with the steam requirement of Greenfield customer of 80-110/Hr.. The data has been validated through Reference Plant data/ ^{11/} / ^{60/} . Number of the reference boiler is based on the process provided in the annex 1 of the applied methodology
Specific CAPEX of GEJ 620 Power Plant	596.05 US\$/KW	The value used was cross checked from the indicative costs quoted by the Clarks energy/ ^{62/} for a single GEJ 620 E series Power plant . Cost is arrived by dividing the plant cost (1.811Million USD) by 3039KW.
Specific CAPEX Of LOOS 1 Germany Boiler with Economizer	845.92 Thousand US\$ equivalent to 664,046 € (Euro 0.785/US\$)	<p>The Capex value is comprised of</p> <p>a. Cost of Boiler (€) 489,045</p> <p>b. Installation Cost (€) 50,000.</p> <p>c. Commissioning Cost (€) 12,000.</p> <p>d. Boiler Building (€) 113,000.</p> <p>The above values were crosschecked with the indicative cost quoted by Bosch & email communication /^{61-a/} /^{61-b/} /^{61-c/} & /^{61-d/}.</p>
Non Fuel O & M Cost for the Reference Power Plant	0.008 US\$/KW hr	The value used was crosschecked from the indicative costs quoted by the Clarks energy/ ^{62/} for a single GEJ 620 E series Power plant and compiled in The Reference Plant data/ ^{11/}
Non Fuel O & M Cost for the Reference Boiler	0.089 US\$/Tonne of Steam	The value has been cross checked from the email communication received from Nestle / ^{60/} and compiled in The Reference Plant data/ ^{11/}
Energy Efficiency of Reference Power Plant	38%	The value used was crosschecked from the indicative costs quoted by the Clarks energy/ ^{62/} for a single GEJ 620 E series Power plant and compiled in The Reference Plant data/ ^{11/}
Energy Efficiency of Reference Boiler	88%	The value has been cross checked from The Reference Plant data/ ^{11/} The value chosen is for Boiler with Economiser for boilers manufactured by LOOS Germany .
Cost of Steam calculated for reference boiler	16.6541 US\$/tonne of Steam for year 2013	<p>The price (cost) of steam for reference boiler has been calculated from the thermodynamic principles referred in US Department of Energy (USDOE), “How to Calculate the True Cost of Steam”, A Best Services Steam Technical Brief,/^{B-18/} /^{79/}</p> <p>Though cost of steam generation includes various running costs toward water and its treatment, Pumping, environmental costs etc. PP has considered the most dominant fuel cost for calculating the cost of steam .</p> <p>The equation</p> $C_G = a_F \times \Delta H / 1000 / \eta_B$ <p>a_F = fuel cost, (\$/MMBtu) (i.e. natural gas price)</p> <p>ΔH = Enthalpy of steam, Btu/lb - Enthalpy of boiler feed-water, Btu/lb</p>

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		<p>η_B=Efficiency of reference Boiler</p> <p>DOE checked the applicability the above equation to cross check with spread-sheet and found value of 16.6541 US\$/tonne of Steam for the year 2013 . The price of steam will escalate on the basis Annual Average increase in Natural Gas Prices.</p>
Cost of Electricity supplied to Project Customer	22 Naira/KWh & Maximum demand changes of 21600000 Naira/year	<p>The Project customer is Flour Mills of Nigeria PLC (FMNPLC) and the Project owner is Golden Sugar Company Limited (GSCL), a wholly owned subsidiary of the above, However both are separate legal entities and registered as separate companies under the Nigerian Laws. This was validated by review of their respective registration documents with Corporate affairs Commission /76/,/77/,/78/.</p> <p>In June 2011 GSCL agreed to sell 13000MWH /month at the price of 22Naira/unit to FMNPLC. This intent was documented in a Letter of intent (LOI) dated 27th June 2011 /75/. The LOI stated that a formal agreement would be signed within six months. A legal Power Purchase agreement was signed between GSCL & FMNPLC /35/ &/54/ dated 01/08/2011.</p> <p>The price fixed in the LOI and subsequent agreement is higher than the prices fixed in the Multi year Tariff order (MYTO)) /59/ issued by Nigerian Electricity regulatory commission . The commission has fixed tariff of 15.2 Naira/KWh for the year 2011 & 15.8 Naira/KWh for the year 2012. Hence the tariff of 22 Naira/KWh as per power purchase agreement is higher than the rate fixed by the commission.</p>
Cost of Electricity supplied to Greenfield customer	15.8 Naira/KWh	<p>This rate has been Taken from Multi Year Tariff order (MYTO) /59/ for the period July 2008 to June 2013 which was available with PP at the time of Investment comparison. DOE confirms that the price is kept same if the Greenfield customer would have drawn power from the Nigerian Grid. The prices fixed in the Multi year Tariff order (MYTO) /59/ issued by Nigerian Electricity regulatory commission. The commission has fixed tariff of 5.2 Naira/KWh for the year 2011 & 15.8 Naira/KWh for the year 2012 .Hence the price is in line with the market price supplied by Nigerian Power companies.</p>
Price of Natural Gas	25.69 (2012) 29.23(2013) 32.73(2014) Naira/Nm ³	<p>The Price is validated from the Circular NGC /MD 38/Vol.1 announcing the Domestic natural gas pricing dated 29/10/2010/ /56/</p>
Annual Average increase in Natural Gas Prices	6%	<p>The Price is validated from the Circular NGC /MD 38/Vol.1 announcing the Domestic natural gas pricing dated 29/10/2010/ /56/ for the period 2010-14</p>
Naira- US\$ Rate conversion	160 Naira/USD	<p>The highest conversion during the period June 2010- May 2012 have been taken from the historical rates drawn from Onanda.com /38/</p>
Interest during construction	7%	<p>The interest rate has been taken from loan agreement between the Parties GSCL & Standard</p>

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	Bank Plc./37/
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Carbon Check therefore confirms that its assessment of the cross check of input parameters for project plant and of reference plants ascertained compliance of guidance 6 of annex 05, EB 62 as assessed above. Furthermore, Carbon Check during course of validation have cross checked all input parameters for the project plant and reference plant in line with the requirements of VVS.

Accounting principles and Arithmetical Accuracy

The input parameters are consolidated in the Investment Analysis Spread sheet/^{15/}. Since all the cells are interlinked, validation team is convinced that the input parameters as given in the assumptions form the basis of IRR calculations and ensures arithmetical accuracy. IRR calculations have been done for 20 years. The project IRRs calculated for each of the three Combined Baseline Alternatives are:

Project implemented without CDM:	43.64%
Scenario A:	50.95%
Scenario B:	38.99%

Sensitivity Analysis

The Guidance on Assessment of Investment Analysis requires the robustness of the conclusion arrived at to be proved through a sensitivity analysis by varying the critical assumptions to a reasonable variation ($\pm 10\%$). Accordingly, investment cost, Electricity tariffs and Natural gas costs were subjected the variation of ($\pm 10\%$). The project cost is based on offer letter and equipment's have been already purchased purchase. Hence, the possibility of cost going up is non-existent; Electricity tariff to the Greenfield facility and Project customers have been already fixed at 15.8 Naira's and 22 Naira's respectively through long term agreements ^{35/}. The annual 11% increase in tariff of electricity has been already accounted for in the investment analysis based on the past trend of increases. Hence it is not envisaged that electricity tariff will increase beyond the incremental tariff already assumed in the calculation. Similarly in the calculation the natural gas prices are escalated every year by 6% based on the past trend for Natural gas prices. Hence it is not envisaged that the natural gas prices will rise beyond the annual increases already anticipated.

The Guidance on Assessment of Investment Analysis requires the robustness of the conclusion arrived at to be proved through a sensitivity analysis by varying the critical assumptions to a reasonable variation ($\pm 10\%$) in the case of this project.

Combined Baseline Alternative	Base IRR (%)	+10% CAPEX (%)	-10% CAPEX (%)	+10% Gas Price (%)	-10% Gas Price (%)	+10% Power Tariff (%)	-10 % Power Tariff (%)
Project without CDM	43.64	40.67	48.75	43.49	46.93	47.55	39.64
Scenario A*	50.95	47.67	54.95	48.30	53.64	58.83	42.82
Scenario B#	38.99	36.66	41.80	32.77	45.51	45.06	32.86

* The reference plant is implemented at the minimum capacity (number of power units) required to meet 100% of the power demand of the project activity. The reference plant is implemented at the minimum capacity (number of power units) required to meet 50% of the power demand of the project activity

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From the above table it is confirmed that even in the case of +/- 10% in CAPEX/Natural Gas or Power Tariff the scenario A remains the most attractive. The scenario A will become unattractive only in following cases:

Project will become baseline scenario under following conditions only, if CAPEX is reduced by 88%. If Cost of Electricity supplied to Greenfield customer is increased by 90% over and above the 11% rise/annum already estimated^{/59/} in Investment comparison analysis. Cost of Electricity supplied to Project customer is increased beyond 18% over and above the 11% rise/annum already estimated^{/59/} in Investment comparison analysis. Cost of the natural gas is decreased by 34% while the average annual increase of 6% has been estimated in the Investment analysis based on past trends of gas prices in Nigeria^{/56/}

Therefore, the validation team concludes that none of the above scenarios i.e. increase in electricity tariff beyond the annual increases or decrease in the gas prices in spite of rising trends are not likely to happen. Therefore, the validation team concludes that the project is additional and will continue to remain additional. The financial analysis conforms to paragraph 120 ~122 of VVS (02.0) ^{/B02/}

3.6.5 Common Practice Analysis

CHP technologies are not widely utilized in the Nigerian economy. In accordance with the *Guidelines on Common Practice* (EB69 Annex 8), the applicable capacity or output range for evaluating common practice in the use of CHP technology for this project is +/-50% of the total design capacity or output of the proposed project activity (28.8MW). Hence the range of CHP capacities relevant for this common practice analysis is 14.4 – 43.2MW.

There are no CHP plants within this capacity range installed in the food sector in Nigeria. DOE could only find that in recent past. Coca Cola Nigeria has installed one CHP of 4MW capacity in **Nigeria**. This was validated through the following information available in public domain.^{/B15/}

Carbon Check confirms **that in this case $N_{diff} = N_{All} = 0$** is correctly determined where N_{All} = Number of CHP facility with power production in the range described above =0 & N_{diff} = Number of CHP facility with power production in the range described above & those apply different technology that in the project case =0

- (a) The factor F is greater than 0.2, and
- (b) $N_{All} - N_{diff}$ is greater than 3.

Hence the project is not a common practise.

In the above background, Validation Team concludes that the project is not a business-as-usual scenario and is additional.

Carbon Check confirms that all data, rationales, assumptions, justifications and documentation provided by the project participant(s) to support demonstration of additionality are credible and reliable.

In conclusion, the proposed project activity complies with all criteria of “Combined Tool for determination of baseline and assessment of additionality”^{/B05/} and the proposed project is additional

3.7 Monitoring Plan

Referring to paragraphs 131 – 133, VVS version 02.0.^{/B02/}

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The monitoring plan is in accordance with the monitoring methodology; the monitoring plan will give opportunity for real measurement of achieved emission reductions.

Carbon Check has verified all the parameters presented in the monitoring plan against the requirements of the methodology and concludes that no deviations relevant to the project activity have been found.

Carbon Check confirms that the monitoring arrangements /65/ & /67/ described in the monitoring plan are feasible within the project design, and the means of implementation of the monitoring plan are sufficient to ensure the emission reductions achieved by resulting from the proposed CDM project activity can be reported ex post and verified.

Carbon Check has verified all the parameters presented in the monitoring plan against the requirements of the methodology and concludes that no deviations relevant to the project activity have been found.

The approved baseline and monitoring methodology "AM 0102 version 01.0.0 has been applied correctly.

Carbon Check confirms that ex ante parameters as detailed below are in line with AM0102 version 01.0.0." /B03/

Parameters determined Ex-Ante

- $(EF_{CO2,m})$ CO₂ emission factor of the fuel(s) used in energy plant in the peer group *
- (η_m) -Design efficiency of energy plant m in the peer group *
- $(EG_{cap,i,j})$ Historical maximum of electricity generation of existing fossil fuel fired
- $(FC_{i,j,k})$ Captive power plant j at the site of project customer i (2010)
- $(NCV_{i,j,k})$ Quantity of natural gas fired in captive power plant j in the year prior to the $(EF_{CO2,k})$ implementation of the project activity (2011)
- $(NCV_{i,j,k})$ -Net calorific value of natural gas fired in captive power plant j
- $(EF_{CO2,k})$ CO₂ emission factor of fossil fuel type k (natural gas)
- $(EG_{i,j})$ Quantity of electricity generated in captive power plant j at the site of project customer in the year prior to the implementation of the project activity (2011)

Parameters determined Ex-Post

- $(EG_{GIC,y})$ Quantity of electricity generated by the project facility that is supplied to the Greenfield industrial consumer in year y
- $(HC_{GIC,y})$ Quantity of steam generated by the project facility that is supplied to the Greenfield industrial consumer in year y
- (EG_{pciy}) Quantity of electricity generated by the project facility that is supplied to the project customer in year y
- $(FC_{i,j,y})$ Volume of fuel utilized by the Cogen (project activity) in year y (m3)

The project's monitoring plan includes:

- A description of the responsibilities and authorities for project management;
- Procedures for training;
- Procedures for the calibration of metering equipment;
- Monitoring organisation chart & procedure for parameters listed in 3.7.2;

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- Data quality control;
- Quality assurance and quality control;
- Data management system;
- Reporting and verification.

Detailed procedures have been elaborated in the PDD /01/ & /02/ and Monitoring Manual /65/ These will be maintained and implemented to enable subsequent verification of emission reductions.

The application of the monitoring methodology is transparent and Carbon Check considers the project participants able to implement the monitoring plan.

In Carbon Check's opinion the project participant's ability to implement the monitoring plan is adequate in order to measure and demonstrate its compliance as per the applied methodology.

Management system and quality assurance_{/65/}

3.8 Sustainable Development

The host party's DNA has confirmed the contribution of the project to the sustainable development in Federal Democratic Republic of Nigeria according to the Letter of Approval for the Project /49/8/50/, which was checked by the validation team to be valid.

The project activity is in compliance with all current applicable legislations.

In conclusion, the Validation Team is of the opinion that the project activity is in full compliance with all applicable requirements for the CDM by leading to emission reductions additional to what would have otherwise occurred, providing for reliable and measurable emission reductions with sustainable development in the country through improvement of environmental condition, reduction of air pollutants.

Referring to paragraphs 134 – 137, VVS version 02.0_{/B02/}

3.9 Environmental Impacts

Analysis of Environmental Impact have been explained clearly and distinctly. The PDD identifies components, type of impact, mitigation measures & residual impact for each stage of project Viz.

- During site preparation
- During Construction
- During Operation

Project has in place the mitigation program_{/07/} in the form of Environmental Management programs which have been implemented. As a result of mitigation actions the residual impacts will be low. The trans boundary impacts has been considered in the project boundary in the form of transportation of material during all three stages as listed above. Since the project is a part of Greenfield Sugar Refinery, the Environmental Impact _{/6/,/7/,/8/,/9/} is required to be assessed as per Environmental Impact Assessment Act No. 86 of 1992, sec. 64, No. 13. EIA has been approved and issued a certificate dated 19/08/2010_{/09/} by the Federal Ministry of Environment Nigeria for a project to proceed ahead

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GSLC has developed and implemented Environment Management systems^{/07/} as per ISO14001:2004. Under this system EMPs have been implemented. The results of EMPs are planned to be monitored and continually improved.

3.10 Local stakeholders consultation

Referring to paragraphs 138 – 140, VVS version 02.0

DOE is able to confirm from the records that an interactive stakeholder session^{/04/,/05/} took place at Rockview Hotel, FESTAC Lagos Nigeria, on 12th December 2009. Present at the forum were representatives of Lagos State Government Environmental Regulatory Agencies, Non Governmental Organizations as well as Higher Institutions of Learning. During the meeting, a detailed description of the underlying project (*i.e.*, the establishment of a Greenfield sugar refinery) was presented to the stakeholders^{/03/}, including a description of the energy-efficient CHP plant that is the basis of this CDM project. Some of the main issues that were discussed, apart from the implementation of the Greenfield Sugar Refinery, focused on the energy generation concept of the project.

Stakeholder consultation was also carried out as part of procedure to award environmental as Act No. 86 of 1992, sec. 64, No. 13. An invitation was sent through Local newspapers inviting stake holder to comment on EIA. The period of comments was 30 days *i.e.* .19October-16th November 2009. Subsequently, EIA has been approved and issued a certificate dated 19/08/2010 by the Federal Ministry of Environment Nigeria^{/09/}

The PDD version 01, 07/06/2012 was made publicly available on the CDM UNFCCC website <http://cdm.unfccc.int/Projects/Validation/DB/CCKBPR1W7BHQA4LB9ZPE3J0L5HHR52/view.html> and Parties, stakeholders and NGOs have been invited through the CDM website (to provide comments during a 30 days period from 08/06/2012 to 7/07/2012. Following comments were received during the period.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

Global stakeholder Comment	PP response	DOE Response
DOE to ensure that the PDD values are consistent and ensure that the CDM project is a genuine project	The DOE has completed validation in accordance with current Validation and Verification Standard	DOE confirms that the values used are consistent throughout PDD
DOE to check the Detailed Project Report and Feasibility Report which is submitted to the other agencies and Banks by Project owner and ensure that the values match with the DPR/FR submitted to DoE also	The DOE has completed validation in accordance with current Validation and Verification Standard	One of the Project Party is a Bank who have financed the project and have carried due diligence of feasibility Report.
Careful study must be done so that the DPR/FR is not in different versions made and submitted with different purposes to different agencies, which is totally unacceptable, illegal and unethical	The DOE has completed validation in accordance with current Validation and Verification Standard	One of the Project Party is a Bank who have financed the project and have carried due diligence of feasibility Report. DOE has carried out validation as per VVS 02.0

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Project owner should show some undertaking letter from bank manager to DOE stating that both DPR's are same. These kinds of letters should not be accepted and entertained by DOE at face value, but must be checked independently. While collecting the DPR/FR from banks and other agencies, all DPR/FR pages should be counter signed by Banks and other agencies so that the real DPR/FR given to other parties by the PP/Consultant is same as the one submitted to DOE	The DOE has completed validation in accordance with current Validation and Verification Standard	One of the Project Party is a Bank who have financed the project and have carried due diligence of feasibility Report. DOE has carried out validation as per VVS 02.0
DPR/FR values must be probed fully. DOE must take a written undertaking from the PP/Consultant about the list of parties to whom this DPR/FR is submitted and for what purposes. Then DOE should cross check with all the parties and confirm that the same DPR/FR is submitted to all the parties correctly without any changes. DOE must not accept any reports and undertakings from PP/Consultant. DOE must make independent evaluation and use totally different parties without informing the PP or Consultant to cross check the facts	The DOE has completed validation in accordance with current Validation and Verification Standard	DOE has carried out validation as per VVS 02.0 _{/B02/}
DOE to write to the party who prepared the DPR/FR which is submitted to the banks and other agencies and the same is verified against the one submitted to the DOE by PP/Consultant	The DOE has completed validation in accordance with current Validation and Verification Standard	DOE has carried out validation as per VVS 02.0 _{/B02/}
DOE must not entertain this project any more if found the DPR/FR is tampered with at any point in time. PP cannot give different DPR's and FR's. They must submit only the one given to Banks and other agencies while obtaining loans and decision making time	The DOE has completed validation in accordance with current Validation and Verification Standard	DOE has carried out validation as per VVS 02.0 _{/B02/}
		DOE has carried out

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<p>Has the PP considered the CDM revenues while envisaging the project? Without CDM the project was not viable, is it right? This project is having a debt component? Then how bankers or lenders gave the loan? Have the bankers or lenders considered the CDM revenues while agreeing to give loan to this project? If not this project should be rejected right away by DOE by terminating the contract forthwith. If yes, where is the proof? What is the date of the evidence document from bank? Is this document printed now a day or earlier? DOE to independently check the same. If the document is available from Bank it must be checked from all angles so that it is genuine and not forged and date changed by putting back dated. This is normally done, DOE to be aware of this please. Please check the communication the PP had during that time with banks, emails and postal receipts and the weights and dates mentioned on the receipts. Do not believe in courier bills and receipts since these can be cooked up easily. Insist on government owned postal service receipts only. If the project is fully equity project then on what basis the PP has invested full equity in to the project while considering the CDM revenue? DOE to check the same in detail and bring out the facts. Is there any past record of this PP to invest or not to invest at returns what he is talking about in this project? Proper evidences must be reviewed and investigated out by the DOE and take decision on the project based on established facts. Do not ask documents from PP, DOE to collect the same from different sources to do independent evaluation</p>	<p>Investment and financing decisions have been made including consideration of CDM revenues and the DOE has validated this in accordance with current Validation and Verification Standard</p>	<p>validation as per VVS 02.0_{/B02/}</p>
<p>Is the project equipment purchased second hand equipment or sourced from cheap foreign sources? If yes, the issue must be probed by DOE since invoices will invariably be inflated</p>	<p>Project equipment was purchased new. The DOE has completed validation in accordance with current Validation and Verification Standard</p>	<p>It is a Greenfield new project. DOE has carried out validation as per VVS 02.0_{/B02/}</p>

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and forged. Total project costs mentioned by PP will not be the same as originals. Hence no additionality. These facts must be probed in full by DOE by checking all documents and money transactions along with bank statements and certified accounts by a legally acceptable financial analyst		
<p>From DOE side which auditor has done marketing and business development for acquiring this business of validating this project? With whom he or she was co-ordinating at PP or CER buyer? The same person who has done the marketing and business development to acquire the business do validation or participate in any manner what so ever in the validation process? One cannot do like that. It is against the accreditation rules and norms followed since ages. DOE should send auditors from different offices or countries to do this validation audit. DOE must take care of impartiality and accreditation rules. Due to the targets set by the DOE managements auditors are doing marketing and meeting clients and giving promises that the project will be taken care. Is it acceptable and fair? This must be stopped. No auditor should do marketing. Only non-auditing staff should do marketing. DOE to ensure the same please</p>	<p>The DOE representative doing sales and marketing was Adam Simcock. The person conducting the validation was Sunil Kathuria, who is independent from and has not been influenced by any commercial interests. Sunil Kathuria was not involved in any marketing or sales activity and was not known to the PP until after execution of the validation contract. The validation has been conducted in accordance with EB requirements</p>	<p>DOE has carried out validation as per VVS 02.0_{/B02/}</p>
<p>If applicable only: Is these machines, equipment was a part of any bundle of CDM activity envisaged and developed earlier. DOE to check the same through independent sources also. Once some bundles are non-additional and getting negative validation from a DOE, PP is rolling out the same project as an individual project which is not a CDM project at all. DOE to verify the same from independent sources and also take undertaking in the form of an</p>	<p>The project had not previously been considered as part of a bundled activity. The DOE has completed validation in accordance with current Validation and Verification Standard</p>	<p>DOE has carried out validation as per VVS 02.0_{/B02/}</p>

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affidavit from the PP's that any misrepresentation or false statement with respect this would attract strict legal action from UNFCCC and DOE. Furthermore the registered project must be de-registered in case of any future findings contradicting the submissions made by the project owner.		
DOE to be more careful so that this is a genuine CDM project. What is the exact project cost? The project cost is covering what? Each value considered must be validated with proof. The machinery is second hand purchased or fresh and new from an OEM? In either case DOE to check all the quotations, proposals, purchase orders, invoices, way bills, transport bills, proof of payments like bank statements. DOE to check with banks by way of written confirmation the amount transacted, to whom the money is paid, when the money is paid, is the party paid is the correct party as shown in the purchase orders. It may so happen that the values, party names, dates are fabricated and misrepresented in this project. DOE should terminate their contract for this project immediately. This is the only way out to protect the value of CDM process. If the PP is purchasing second hand or second quality equipment and inflating the purchase order values and invoices, this must be probed thoroughly and real values to taken for additionality calculation. Then I'm sure the additionality is not there at all in such a situation	Detailed information regarding project CAPEX and OPEX have been provided to the DOE for validation. The DOE has completed validation in accordance with current Validation and Verification Standard.	DOE has carried out validation as per VVS 02.0 _{/B02/}
How is the base line defined in this project? Is Base line hypothetically defined with no proper evidences and proper justification? In such case, DOE cannot take the base line as suggested by the PDD. Please check that there are real emission reductions beyond the	The baseline identification is covered in the PDD in accordance with the methodology. The DOE has completed validation in accordance with current Validation and Verification Standard	DOE has carried out validation as per VVS 02.0 _{/B02/}

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<p>real and factual base line. It may so happen that this project qualifies for no CER's. DOE cannot assume values and things as giving by this PP. Whatever values are considered throughout the project in all documents including the real DPR (not the one prepared for CDM, the one given to the banks and others), they must be validated, verified and double checked. Do not ask PP for DPR. Ask the parties who have been given DPR by the PP. Get directly from the bank and others by each page of the DPR and Feasibility report signed. Such document can be considered as a real DPR or FR. UNFCCC CDM process cannot be degraded by fabricating and misinterpreting the project base line and additionality</p>		
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APPENDIX A

VALIDATION PROTOCOL

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TABLE 1 MANDATORY REQUIREMENTS

Requirement	Reference	Conclusion
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reductions commitment under Art. 3.	Kyoto Protocol Art.12.2	OK
2. The project shall assist non Annex I Parties contributing to the ultimate objective of the UNFCCC.	Kyoto Protocol Art.12.2	OK
3. The project shall have the written approval of voluntary participation from the designated national authority of each Party involved.	Kyoto Protocol Art.12.5aCDM Modalities and Procedures §40a	OK
4. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the Host Country thereof.	Kyoto Protocol Art.12.2CDM Modalities and Procedures §40	OK
5. In case public funding from Parties included in Annex I is used for the project activity, these Parties shall provide an affirmation that such funding does not result in a diversion of official development assistance (ODA) and is separate from and is not counted towards the financial obligations of these Parties.	Decision 17/CP.7CDM Modalities and Procedures Appendix B §2	OK
6. Parties participating in the CDM shall designate a national authority for the CDM.	CDM Modalities and Procedures §29	OK
7. The Host Party and the participating Annex I Party shall be a Party to the Kyoto Protocol.	CDM Modalities and Procedures §30/31a	OK
8. The participating Annex I Party's assigned amount shall have been calculated and recorded.	CDM Modalities and Procedures §31b	OK
9. The participating Annex I Party shall have in place a national system for estimating GHG emissions and a national registry in accordance with Kyoto Protocol Article 5 and 7.	CDM Modalities and Procedures §31b	OK
10. Reduction in GHG emissions shall be additional to any that would occur in the absence of the project activity, i.e. a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity.	CDM Modalities and Procedures §43	OK
11. The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change.	Kyoto Protocol Art.12.5b	OK
12. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, shall be submitted, and, if those impacts are considered significant by the project participant(s) or the Host Party, an environmental	CDM Modalities and Procedures §37c	OK

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Requirement	Reference	Conclusion
impact assessment in accordance with procedures as required by the Host Party shall be carried out.		
13. If required by the Host Country, an analysis of the environmental impacts of the project activity is carried out and documented.	CDM Modalities and Procedures §37c	OK
14. Comments by local stakeholders shall be invited, a summary of these provided and how due account was taken of any comments received.	CDM Modalities and Procedures §37b	OK
15. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for a minimum of 30/45 days, and the project design document and comments have been made publicly available.	CDM Modalities and Procedures §40	OK
16. Baseline and monitoring methodology shall be previously approved by the CDM Methodology Panel.	CDM Modalities and Procedures §37e	OK
17. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances.	CDM Modalities and Procedures §47	OK
18. Provisions for monitoring, verification and reporting shall be in accordance with the modalities described in the Marrakech Accords, and relevant decisions of the COP/MOP.	CDM Modalities and Procedures §37f	OK

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TABLE 2 REQUIREMENTS CHECKLIST

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
A Description of Project Activity						
A.1 Title of the project activity						
A.1.1.	Title of the project activity, revision number and date of PDD (section A.1). State the clearly identifiable title of the project activity, the version number and the date of the PDD.	/01/ & /02/, /B02/	DR	Title of the project “Golden Sugar 30MW High energy efficient combined heat and Power System in Appapa Lagos Nigeria” is clearly mentioned in PDD Version 01 dated 07/06/2012.	OK	OK
A.1.2	Does the project comply with the applicable requirements for completing the PDDs?	/01/ & /02/, /B02/,/B04 /	CC	Yes the project complies “Guidelines for project design document (CDM-PDD) and the proposed new baseline and monitoring methodologies (CDM-NM)” ver. 1.0. EB 66, Annex. 08	OK	OK
A.2 Description of the proposed project activity						
A.2.1	Does the PDD contain an accurate description of the project activity and provide the reader with a	/01/ & /02/,/26,/2	DR, I	The project is a large scale Greenfield	CAR-1	

³ MoV: DR document review, I interview, CC cross checking

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Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
	clear understanding of the precise nature of the project activity and the technical aspects of its implementation? How was the design of the project assessed?	7/45/,/63/,/64/ /B03/ /B02/,/B04/ /		<p>project involving installation and commissioning of gas turbines based on natural gas in a Greenfield sugar refinery. The purpose of the proposed project activity is to supply steam and power requirement of greenfield sugar refinery and the surplus power will be supplied to project customers located adjacent to greenfield sugar refinery. Start date of project activity is 19/07/2011 and it is expected to be completed by December, 2012.</p> <p>The project design was reviewed by Reviewing the Technical Feasibility report (TFR) prepared by by "Booker Tate" The report was further reviewed by "IPRO Industriprojekt GmbH"</p>	CAR-2	OK

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Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
				<p>The Projects Generation capacity is comprising of two nos. of turbine of is 14.40MW and Generator is rated at 18000 KVA at 0.8pf. This was validated through Name plate details specifications and acceptance reports of Turbine and generators .The description of Steam generation activity is missing in section A1.</p> <p>CAR-1 & CAR-2 were issued on incorrect Turbines capacity, missing details of steam generation, and National sustainable development criteria. The Final PDD has been corrected to include the details. For Details refer Table-3</p>		
A.2.2	Does the project activity involve alteration of existing installations? If yes, have the differences between pre-project and post-project activity	/01/ & /02/,/26,/27/39/,/40/,	DR, I	The project activity is a Greenfield project and does not involve	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
	been clearly described in the PDD?	/45/ /B03/ /B02/,/B04 /		alteration. Of any existing installations		
A.2.3	Is the project location clearly defined?	/1/,/B02/ www.googleearth.com	DR	The PDD does not state Physical /Geographical location of the project clearly the location The Final PDD has been corrected to include the details. . This now complies with EB 66, Annex. 08. For Details refer Table-3	CAR-3	OK
A.3 Technologies and /or measures						
A.3.1	Does the description in the PDD include technologies and measures to be implemented by the project activity including the list of facilities, systems and equipment that will be installed by the project activity?	/01/ & /02/,/09/ /26/,/27/, /28/,/29/, /39/,/45/	DR, I	Description in sec. A.3 of PDD sufficiently describes the technology to be employed in the proposed project activity along with the list of equipments to be installed in project activity. The list is complete in clearly identifying the quantities of Steam & Power supplied to	GL-1	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
				refinery and industrial customer separately There were inconsistencies in The technical specification of Heat recovery Boiler system is between two sets of reviews. hence a clarification was sought . PDD has been revised to include the clear specs. For Details refer Table-3		
A.4 Parties and project participants						
A.4.1	Have the Parties and project participants participating in the project been listed in tabular form in Section A.3 and are they consistent with the information detailed in Annex 1 of the PDD?	/01/ & /02/ , /49/, /50/ /51/, /B02/ /B01/	DR, I	Nigeria is the Host Party and Golden Sugar Company Limited and Standard Bank Plc are the project participants. Information is consistent in section A.4 and Annex 1 of PDD. Golden sugar is a Public Limited Company registered in Nigeria. This was validated through company registration	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
				certificate. Standard bank is a company registered under law of England and Wales.		
A.4.2	Do all participating Parties fulfil the participation requirements as follows: (a) Party has ratified the Kyoto Protocol (b) Party has a Designated National Authority	/01/ & /02/ , ,/49/, /50/ ,/51/, /B02/ ,/B01/	DR	<p>Nigeria and United Kingdom are the parties identified and Nigeria is participating (Host country). Nigeria has ratified Kyoto Protocol on 10/12/2004 and The DNA is represented through the "Federal Ministry of Environment" as per the UNFCCC website.</p> <p>The project is not a unilateral project and Annex 1 party, Switzerland–England is another party to the project. Switzerland–England has ratified Kyoto protocol on 09/07/2003 and the DNA is represented through "The Federal Office for the Environment" Environmental Agency as per the UNFCCC</p>	CI-2	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
				website. CL-2 further sought clarification on change of Annex-1 Party. Standard Bank Has submitted a letter explaining the situation why they couldn't get the Swiss approval. CL-2 is resolved		
A.4.3	Have the letters of approval have been issued?	/01/ & /02/ , ,/49/, /50/ ,/51/, /B02/ ,/B01/	DR	Letter of approvals & MOC were earlier not submitted earlier . The same have been submitted. On review of LoAs it was discovered that Switzerland has been replaced by the United Kingdom. A further clarification was raised and the project responded through a document explain the reason for change.. DoE has accepted the explanation. For Details refer Table 3	CL-2	OK
A.4.4	Do the letters of approval meet the following requirements? (a) LoA confirms that the Party has ratified the	/01/ & /02/ , ,/49/, /50/	DR	Both LOAS confirm the following a) Yes b) Yes	CL-2	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
	<p>Kyoto Protocol;</p> <p>(b) LoA confirms that participation is voluntary</p> <p>(c) The LoA confirms that the project contributes to the sustainable development of the Host Country?</p> <p>(d) The LoA refers to the precise project activity title in the PDD</p> <p>(e) The LoA was received directly by the DNA of the PP</p> <p>In case of doubt regarding the authenticity of the LoAs, describe how it was verified that the letter of approval is authentic.</p>	/51/, /B02/ /B01/		<p>c) Yes</p> <p>d) Yes</p> <p>e) PPA</p> <p>LOAs have been compared with other LOAs issued by the same DNAs</p>		
A.4.5	Have all private/public project participants been authorized by a Party to the Kyoto Protocol?	/01/ & /02/ , /49/, /50/ /51/, /B02/ /B01/	DR	The names of the Golden Sugar Limited (GSL) and Standard Bank PLC (SB) along with their respective countries are mentioned in the table Golden Sugar is a public limited listed company in Nigeria and Standard Bank PLC is a bank registered under law of England and Wales.	OK	OK
A.5 Public funding of project activity						
A.5.1	If public funding from Parties included in Annex I is used for the project activity, have these Parties	/01/ & /02/, /B02/	DR, I	The PP has affirmed that no diversion of	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
	provided an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of these Parties?	/15/,/16/,/36/,/37/,/73/		official development assistance will be used for this project. This is validated through written confirmation submitted by GSL and also through loan agreement between GSL & SB		
B.1 Application of selected approved baseline and monitoring methodology						
B.1.1	Does the project activity apply an approved methodology and the correct version thereof?	/1/,/B02/,/B03/,	CC, DR, I	The project has applied "Greenfield cogeneration facility supplying electricity and steam to a greenfield Industrial Consumer and exporting excess electricity to a grid and /or project customers(s)" AM102 ver. 1.0 of 02/03/2012	OK	OK
B.2 Applicability criteria of the methodology/tools						
B.2.1	How was it validated that the project activity complies with the applicability criteria?	/1/,/B02/,/B03/,/14/,/	CC, DR, I	The purpose of the proposed project	CAR-4	OK

VALIDATION REPORT

Checklist Question	Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
	15/,19/,/27 /,/52/,/73/		<p>activity is to supply steam and power requirement of Greenfield sugar refinery and the surplus power will be supplied to project customers located adjacent to Greenfield sugar refinery..This was validated through review of the of the TEFR study report, Physical inspection during site visit of Greenfield Industrial Customer i.e Sugar Refinery unit and Project customer i.e “Flour Mill PLC” however PDD does not elaborate on how each criteria of applicability is achieved by the project</p> <p>A CAR was raised because the PDD was not complying with the Paragraph 77 of VVS explaining how projects qualifies against each applicability conditions</p>		

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
				of applied methodology .version 2.0 . PP ahs corrected the same in Final PDD Refer Table-3 for the details		
B.3 Project boundary						
B.3.1	Is the project boundary area clearly defined and in accordance with the applied methodology?	/1/,/B02/,/B03/,/14/,/15/,19/,/27/,/52/,/73/	DR, I	In sec. B.3 of the PDD, flow diagram of the project boundary physically delineating the project activity indicates that heat and electricity generated in project facility will be supplied to Greenfield industrial consumer and surplus electricity will be supplied to project customers adjacent to project activity.. This was validated through site visit, ,systems specifications, and existing power generation records and equipments installed at project customer's premises.	OK	OK
B.3.2	What are the project's system boundaries (components and facilities used to mitigate GHGs)?	/01/ & /02/, /1/,/B02/	DR, I	As per methodology AM0102, the project boundary	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
		,/B03/,/73/		encompasses the site of the project facility and the site of the project customers. The project is not connected to the grid will not export power to grid.. This was validated through grid disconnection records and the power purchase agreement between GSCL and project customer.		
B.3.3	Which sources are identified for the project? Does the identified project boundary cover all possible sources linked to the project activity?	/1/,/B02/, /B03/	DR, I	<p>Project Emission are associated with the project activity whereas no leakages are related to this project. All sources of baseline emission and project emission are identified</p> <p>Project emissions on account of fossil fuel consumption at the project site for the generation of electric power and heat and for auxiliary loads related to the generation of electricity power and heat. All of the natural</p>	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
				gas consumed at the project facility is included in the project emissions calculations		
B.3.4	Does the project involve other emissions sources not foreseen by the methodologies that may question the applicability of the methodology? Do these sources contribute by more than 1% to the estimated emission reductions of the project?	/1/,/B02/, /B03/	DR, I	The project involves all emissions sources as indicated/ foreseen by the methodologies that may question the applicability of the methodology. The project emission also associated with the project activity due to auxiliary electricity consumption. As project emission sources contribute by more than 1% of the total estimated emissions, these sources included in the project boundary.	OK	OK
B.4 Baseline scenario identification						
B.4.1	Which baseline scenarios have been identified? Is the list of the baseline scenarios complete?	/1/,/B02/, /B03/,/B1 1/,/B/B12/, /B13/,/11/, /46/,/60/,/6 1/,/62/,/63/	DR, I	The project is a large scale project involving installation and commissioning of gas turbines based on natural gas in a	CAR-5	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
		, /64//69/, /70/, /72/		<p>greenfield sugar refinery. The purpose of the proposed project activity is to supply steam and power requirement of greenfield sugar refinery and the surplus power will be supplied to project customers located adjacent to greenfield sugar refinery.</p> <p>CAR-5 was raised as As Combined Tool to identify the baseline scenario and demonstrate additionality” ver. 4.0 tool was not followed to determine alternate scenarios. Additionally the assessment of barriers is not carried out as per EB50 Annex 13,</p> <p>PDD has been subsequently Revised</p>		
B.4.2	How have the other baseline scenarios been	/1/,/B02/	DR,I	During barrier analysis	OK	OK

VALIDATION REPORT

Checklist Question	Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
eliminated in order to determine the baseline?	,/B03/,/B11/,/B/B12/,/B13/,/11/,/46/,/60/,/61/,/62/,/63/,/64/,/69/,/70/,/72/		<p>all the scenario depending on following were eliminated</p> <p>a) Use of biomass & renewable energy resources for generating steam and electricity</p> <p>b) Scenario depending on Nigerian electricity grid</p> <p>The use of Biomass for generation of steam and electricity is not an established practice in Nigeria in Industrial sector. Nigerian government have long term "Nigerian Biomass Energy plans" to use biomass for generating energy</p> <p>http://cgpl.iisc.ernet.in/site/Portals/0/Publications/Presentations/EGM/10_Nigeria-egm.pdf</p>		

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
				There is acute shortage of electricity in the country and as result of that a large number of Nigerian do not have access to the power.. This was validated through information available in the public domain http://www.eia.gov/cabs/nigeria/pdf.pdf		
B.4.3	What is the baseline scenario? Is the determination of the baseline scenario in accordance with the guidance in the methodology?	/1/,/B02/,/B03/,/B11/,/B/B12/,/B13/,/11/,/46/,/60/,/61/,/62/,/63/,/64//69/,/70/,/72/	DR,I	The most plausible baseline scenario identified is that, the Greenfield industrial consumer would have been supplied with power from a stand alone reference power plant implemented at about the same capacity as the project plant. The Greenfield industrial consumer would have been supplied with steam	CAR-6 CI-3	OK OK

VALIDATION REPORT

Checklist Question	Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
			<p>from a standalone reference boiler implemented at about the same capacity as the steam generation capacity of the project plant</p> <p>The project customer would have continued to be supplied with electricity from its own captive natural gas fired power plant</p> <p>A CAR -6 was raised as PDD did not demonstrate how Procedure for identification of reference energy plant was applied for determination of Greenhouse reference captive power plant and boiler and also did not substantiate the information .</p> <p>In addition CL-3 was raised oh how the scenarios take into account relevant</p>		

VALIDATION REPORT

Checklist Question	Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
			national and/or sectoral policies, macro-economic trends and political aspirations		
			See table-3 for details.		
B.4.4	Has the baseline scenario been determined using conservative assumptions? Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	/1/,/B02/,/B03/,/B11/,/B12/,/B13/,/11/,/46/,/60/,/61/,/62/,/63/,/64/,/69/,/70/,/72/	DR, I See above in B.4.4	CL-3	OK
B.5 Additionality determination					
B.5.1	What tool does the project use to assess additionality? Is this in line with the methodology?	/01/ & /02/,/B02/,/B03/,/B05/,/B07/	DR, I "Combined tool to identify the baseline scenario and demonstrate additionality" ver. 4.0 has been used to assess additionality which is in line with applied methodology AM 0102.	OK	OK
B.5.2	What is the project additionality mainly based on?	/01/ & /02/,/B02/,	DR, I Project additionality is mainly based on finding alternate	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
		/B03/,/B05 //,/,/B07/		scenario after barrier analysis. For each of scenario an investment analysis is carried out and most economically attractive scenario is chosen		
B.5.3	Prior consideration of CDM					
B.5.3.1	What is the starting date of the proposed project activity?	/01/ & /02/, /B02/, /B03/,/B05 /,/B07/ /31/,/32/, /33/./38/		Starting date of project activity is 19 th July , 2011 which is the date of first payment toward payment of USD 1,641,207 of equipment for the project facility which is in line with CDM Glossary of terms; version 6.. This was validated through the bank payment advice of the above value and company's ledger of that date where value of. 251022610.65 NGN and the midpoint weekly currency conversion rate for the week July 18-24, 2011 on http://www.oanda.com/currency/historical-rates/	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
B.5.3.2	What is the evidence for serious consideration of CDM prior to the time of decision to proceed with the project activity?	/01/ & /02/ /B02/ /B03/,/B05 /,?B07/ /31/,/32/ /33/,/38/ /06/,17/ /20/	DR, I	The start date of project activity is prior to the date of publication of the PDD for global stakeholder's consultation and after the date 2 nd Aug. 2008. PP has submitted prior CDM Consideration form to the UNFCCC and Host country DNA on 10 th Feb. 2011 which is prior to the Start date of project activity i.e. 19 th July 2011. This is in compliance to paragraph Para 27 of CDM Project standard, ver. 1.0.	OK	OK
B.5.3.3	What initiatives were taken by the project participants from the starting date of the project activity to the start of validation in parallel with the physical implementation of the project activity?	/01/ & /02/ /B02/ /B03/,/B05 /31/,/32/ /33/,/38/ /06/,/17/ /20/,/29/ /37/,/B07/	DR, I	PDD does not list any details of initiatives taken by the project participant. CAR-7 was issued to include the chronology of events right from the conception of project till proposed date of commissioning. PDD was revised to include	CAR-7	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
				the same. See Table-3 for details		
B.5.3.4	Does the timeline of the project confirm that continuous actions in parallel with the implementation were taken to secure CDM status?	/01/ & /02/, /B02/, /B03/,/B05 /31/,/32/, /33/,/38/, /06/,/17/, /20/,/29/, /37//B07/	DR, I	See above in CAR-7	CAR-7	OK
B.5.4	Investment analysis					
B.5.4.1	What is the analysis method used to determine whether the proposed project activity is not (a) the most economically or financially attractive; or (b) economically or financially feasible, without the revenue from the sale of certified emission reductions?	/01/ & /02/, /11/, /14/,/15/, /28/,/29/, /30/,/35/, /37/,/38/, /40/,/41/, /42/,/55/, /56/,/57/ /58/,/59/, /60/,/61/62 / /B02/,/73/ /B03/,/B05 /,/B07/,	DR, I	"Guidance on the assessment of investment analysis", ver. 5.0 has been used to determine most economically attractive scenario.	OK	OK
B.5.4.2	What financial indicator is used?	//01/ & /02/,	DR, I	Project IRR has been chosen as financial	Ok	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
		/02/,/11/, /14/,/15/, /28/,/29/, /30/,/35/, /37/,/38/, /40/,/41/, /42/,/55/, /56/,/57/ /58/,/59/, /60/,/61/62 / /B02/,/73/ /B03/,/B05 /,/B07/,		indicator to do the investment comparison analysis		
B.5.4.3	Cross-check of main parameters used in the financial analysis: electricity generation, electricity tariff, investment costs, operating and maintenance costs, taxes, other costs. (The main parameters can be changed for the different project category.)	/01/ & /02/, /11/, /14/,/15/, /28/,/29/, /30/,/35/, /37/,/38/, /40/,/41/, /42/,/55/, /56/,/57/ /58/,/59/, /60/,/61/62 / /B02/,/73/ /B03/,/B05 /,/B07/,	DR	Validation of Investment analysis has been carried in line with EB 62 Annex-5 However A CAR-8 was raised to Provide a revised Financial sheet with the following corrections Stating the source/references of each every input value used in Investment review.. Please also Correct the generation capacities	CAR-8	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
				of electricity and steam & Correct the references of some of the cells linked to external files. PP has provided the revised sheet and CAR-8 stands resolved.		
B.5.4.4	Sensitivity analysis: have the key parameters contributing to more than 20% of the revenue/costs during operating or implementation been identified?	/01/ & /02/, /11/, /14/, /15/, /28/, /29/, /30/, /35/, /37/, /38/, /40/, /41/, /42/, /55/, /56/, /57/, /58/, /59/, /60/, /61/62 / /B02/, /73/ /B03/, /B05 //B07/	DR	The key parameters, capex, gas price and power tariff which can contribute upto 20% of the revenue/costs has been identified for sensitivity analysis	OK	OK
B.5.4.5	Sensitivity analysis: is the range of variations is reasonable in the project activity?	/01/ & /02/, /11/, /14/, /15/, /28/, /29/, /30/, /35/	DR	Yes, the range of variation +10 to -10% used is reasonable for the project activity.	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
		/37/,/38/, /40/,/41/, /42/,/55/, /56/,/57/ /58/,/59/, /60/,/61/62 / /B02/,/73/ /B03/,/B05 / /B07/				
B.5.4.6	Have the key parameters been varied to reach the benchmark and the likelihood of this happening been justified to be small?	/01/ & /02/, /11/, /14/,/15/, /28/,/29/, /30/,/35/, /37/,/38/, /40/,/41/, /42/,/55/, /56/,/57/ /58/,/59/, /60/,/61/62 / /B02/,/73/ /B03/,/B05 / /B07/		NA		
B.5.5 Barrier analysis						
B.5.5.1	Are the barriers identified complimentary to a potential investment analysis?	/01/ & /02/,/43/, /52/,/53/,	DR,I	Additionally has been demonstrated based on Investment analysis.	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
		/63/,/64/, /65/,/66/, /69/,/72/ /B02/,/73/ /B03/,/B05 / /B07/		Technological barriers also discussed which is complimentary to investment analysis references and supporting documents for technological barriers have been submitted. The same have for validation.		
B.5.5.2	How were the investment barriers assessed to be real? How does CDM alleviate the investment barriers?	/01/ & /02/,/43/, /52/,/53/, /63/,/64/, /65/,/66/, /69/,/72/ /B02/,/73/ /B03/,/B05 / /B07/	DR, I	Based on “Combined tool to identify the baseline scenario and demonstrate additionality” ver. 4.0, three alternative scenario identified and based on IRR comparison of all three scenarios, most economically attractive scenario identified and by comparison of IRR, it has been arrived that project implemented without CDM is not economically feasible .	OK	OK
B.5.5.3	Is the project activity prevented by the investment barriers and at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/01/ & /02/,/43/, /52/,/53/, /63/,/64/, /65/,/66/, /69/,/72/	DR, I	Yes, the project activity is prevented by the investment barriers and there is at least one possible alternative which is feasible under	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
		/B02/,/73/ /B03/,/B05 / /B07/		the same circumstances.. This was also validated through /		
B.5.5.4	How were the technological barriers assessed to be real? How does CDM alleviate the technological barriers?	/01/ & /02/, , /03/,/5/, /13/,/15/, /42/,/43/,	DR, I	Technological Barrier has been put forward or demonstrated, through barriers to their implementation		
B.5.5.5	Is the project activity prevented by the technological barriers and is at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/01/ & /02/,/43/, /52/,/53/, /63/,/64/, /65/,/66/, /69/,/72/ /B02/,/73/ /B03/,/B05 /	DR, I	Technological Barrier has been included in the PDD however supporting documents or any reference material was not submitted hence a CL-4 was raised. Subsequently PDD was revised to include that.	CL-4	OK
B.5.5.6	How were the barriers due to prevailing practise assessed to be real? How does CDM alleviate the barriers due to prevailing practice?	/01/ & /02/,/43/, /52/,/53/, /63/,/64/, /65/,/66/, /69/,/72/ /B02/,/73/ /B03/,/B05 /	CC, DR, I	See above in B.5.5..5	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
B.5.5.7	Is the project activity prevented by the barriers due to prevailing practice and is at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/01/ & /02/,/43/ /52/,/53/ /63/,/64/ /65/,/66/ /69/,/72/ /B02/,/73/ /B03/,/B05 /	CC, DR,	Refer B.5.5.5 above	OK	OK
B.5.5.8	How were the other barriers assessed to be real? How does CDM alleviate the other barriers?	/01/,/43/ /52/,/53/ /63/,/64/ /65/,/66/ /69/,/72/ /B02/,/73/ /B03/,/B05 /	CC, DR,	Technological barriers and investment barriers has been put forward to demonstrate additionality but supporting references and documents has not been provided for validation. CL-4 was raised. Subsequently PDD was revised to include that	CL-4	OK
B.5.5.9	Is the project activity prevented by the other barriers and is at least one of the possible alternatives to the project activity is feasible under the same circumstances?	/01/ & /02/,/43/ /52/,/53/ /63/,/64/ /65/,/66/ /69/,/72/ /B02/,/73/ /B03/,/B05 /	CC, DR,	The other barriers mentioned relates to lack of policy & facilities on use of other renewable sources	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
B.5.6 Common practice analysis						
B.5.6.1	What are the geographical scopes and scope of technology of the common practice analysis?	/01/ & /02/,/B02/ /B03/,/B05 / ,/11/ /15/,/60/ /61/,/62/ /63/,/B11/ /B12/,/B13 /,/B14/,/B1 5/,/B16/	DR	CAR-9 was raise das ddiscussion on common practice is not in line with applied tool and not appropriate. . PDD has been revised as common practice have been stated in PDD Refer Table-3	CAR-9	OK
B.5.6.2	How many similar non-CDM-projects exist in the region within the scope?	/01/ & /02/,/B02/ /B03/,/B05 / ,/11/ /15/,/60/ /61/,/62/ /63/,/B11/ /B12/,/B13 /,/B14/,/B1 5/,/B16/	DR	Since the company is in food sector. It has mainly relied on the similar projects in the food sector. Coca Cola Nigeria has installed one CHP . This was validated through the following information available in public domain. http://www.environmentalleader.com/2010/04/08/coca-cola-bottler-moves-forward-with-chp-projects/ http://www.cospp.com/articles/2011/05/nbc-to-build-65-mw-chp-plant-in-nigeria.html	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
				See above in B.5.6.1		
B.5.6.3	What is the data source(s) used for the common practice analysis?	/01/ & /02/,/B02/, /B03/,/B05 / ,/11/ /15/,/60/, /61/,/62/, /63/,/B11/, /B12/,/B13 /,/B14/,/B15/,/B16/	CC, DR	Data sources used for common practice analysis was not provided.(See above in B.5.6.1) PDD has been revised as common practice have been stated in PDD Refer Table-3	OK	OK
B.5.7 Conclusion on the additionality assessment						
B.5.7.1	What is the conclusion with regard to the additionality of the project activity?	/01/ & /02/,/B02/, /B03/,/B05 / ,/11/ /15/,/60/, /61/,/62/, /63/,/B11/, /B12/,/B13 /,/B14/,/B15/,/B16/	DR	Conclusion of additionality has been demonstrated on the basis of Combined tool of Additionality & baseline scenario Version 04 and EB 62 Annex 5	CAR-5 CAR-6 CAR-7 CAR-8 CAR-9 CL-3 CL-4	OK
B.6 Calculation of GHG emission reductions						
B.6.1 Baseline emissions						
B.6.1.1	Are the calculations documented according to the approved methodology and in a complete and transparent manner?	/01/ & /02/,/02/, /13/,/14/, /26/,/27/	DR,I	Baseline emission is calculated according to approved methodologies and	Ok	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
		/B02/,/B03 / /73/		tools. Excel spread sheet of baseline emission has been provided Validation but the information references and rationales were missing. in the sheets Hence a CAR-10 was issued. Subsequently the Spreadsheet has been revised Refer tTable-3 for details		
B.6.1.2	Have conservative assumptions been used when calculating the baseline emissions and are the uncertainty estimates properly addressed?	/01/ & /02/ /02, /13/,/14/ /26/,/27/ /B02/,/B03 / /73/	DR	conservative assumptions been used when calculating the baseline emissions and are the uncertainty estimates properly addressed?	OK	OK
B.6.2 Project emissions						
B.6.2.1	Are the calculations documented according to the approved methodology and in a complete and transparent manner?	/01/ & /02/ /02, /13/,/14/ /26/,/27/ /B02/,/B03 /	DR	See above in B.6.1.1	OK	OK

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Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
		/73/				
B.6.2.2	Have conservative assumptions been used when calculating the project emissions and are the uncertainty estimates properly addressed?	/01/ & /02/ /02, /13/,/14/ /26/,/27/ /B02/,/B03 / /73/		See above in B.6.1.1	CA-10	OK
B.6.3 Leakage						
B.6.3.1	Are the calculations documented according to the approved methodology and in a complete and transparent manner?	/01/ & /02/ /02, /13/,/14/ /26/,/27/ /B02/,/B03 / /73/	DR	As per the applied methodology no leakage is to be considered	OK	OK
B.6.3.2	Have conservative assumptions been used when calculating the leakage and are the uncertainty estimates properly addressed?	/01/ & /02/ /02, /13/,/14/ /26/,/27/ /B02/,/B03 / /73/	DR	As per the applied methodology no leakage is to be considered	OK	OK
B.6.4 Emission reductions						
B.6.4.1	Has the methodology been correctly applied to calculate the emission reductions and can this be replicated by the data provided in the PDD and supporting files to be submitted for registration?	//01/ & /02/ /02/,/02, /13/,/14/ /26/,/27/ /B02/,/B03	DR	See above in B.6.1.1	CAR-10	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
		/				
		/73/				
B.6.5 Data and parameters that are available at validation and that are not monitored						
B.6.5.1	How were the parameters available at validation verified?	/01/ & /02/ /02,/03/ /13/,/14/	DR, I	The values used for reference plants in the section B.6.2 could not be validated as the reference sources were missing (See CAR- 6 above).	CAR-6	OK
B.7 Monitoring plan						
B.7.1 Data and parameters monitored						
B.7.1.1	Does the monitoring plan described in the PDD comply with the requirements of the methodology?	/01/ & /02/ /02, /13/,/14/ /26/,/27/ /65/,/67/ /68/ /B02/,/B03 / /73/	DR, CC	Yes, the monitoring plan described in the PDD complies with the requirements of the methodologies AM 0102	OK	OK
B.7.1.2	Does the monitoring plan contain all necessary parameters and are they clearly described?	//01/ & /02/ ,/02, /13/,/14/ /26/,/27/ /65/,/67/ 4.1.2 /68 /	DR	Description of the monitoring plan in sec. B.7.2 was not in line with Annex 8 of EB66. CAR-11 was issued and PP was requested to include metering	CAR-11	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
		4.1.3 /B0 2/,/B03/ 4.1.4 /73 /		details of monitoring frequency, recording frequency calibration frequency of measuring instruments, accuracy class for all the parameters need to be monitored..PDD was subsequently revised to include the details Refer Table-3		
B.7.1.3	Is the monitoring frequency adequate for all monitoring parameters? Is it in line with the monitoring methodology?	/01/ & /02/ /02, /13/,/14/ /26/,/27/ /65/,/67/ /68/ /B02/,/B03 / /73/	DR,I	See above in B. 7.1.2	CAR-11	OK
B.7.1.4	Is the recording frequency adequate for all monitoring parameters? Is it in line with the monitoring methodology?	/01/ & /02/ /02, /13/,/14/ /26/,/27/ /65/,/67/ /68/ /B02/,/B03 / /73/	DR	See above in B. 7.1.2	CAR-11	OK
B.7.2 Monitoring of sustainable development indicators/environmental impacts						
B.7.2.1	Is the monitoring of sustainable development	/01/ & /02/		Yes the environment	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
	indicators/ environmental impacts warranted by legislation in the host country?	,/02, /07/,/09/ /65/,/67/ /68/ /B02/,/B03 / /73/		certificate issued to GSCL includes monitoring of following <ul style="list-style-type: none"> There shall be impact mitigation monitoring by ministry in collaboration with other regulatory authorities. There shall be full implementation of Environment management plan of the project. 		
B.7.2.2	Does the monitoring plan provide for the collection and archiving of relevant data concerning environmental, social and economic impacts?	/01/ & /02/ ,/02, /07/,/09/ /65/,/67/ /68/ /B02/,/B03 / /73/		The Monitoring Plan did not include that how the conditions stated in environment certificate No. 000262 dated 05/08/2010 will be monitored and complied with. A CL-5 was raised. Please refer Table-3 for details	CL-5	OK
B.7.2.3	Are the sustainable development indicators in line with stated national priorities in the host country?	/01/,/02, /07/,/09/ /65/,/67/ /68/ /B02/,/B03		The Federal Ministry of environment have given clearance to the project clearly indicates that the project is in	Ok	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
		/73/		line with national priorities in host country.		
B.7.3 Management, quality assurance and quality control						
B.7.3.1	How has it been assessed that the monitoring arrangements described in the monitoring plan are feasible within the project design?	/01/ ,/02, /07/,/09/, /65/,/67/ /68/ /B02/,/B03 / /73/ /,	DR,I	The description of monitoring arrangements in the monitoring plan is in line with methodology	OK	OK
B.7.3.2	Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?	01/ ,/02, /07/,/09/, /65/,/67/ /68/ /B02/,/B03 / /73/	DR	Quality assurance procedure identified for Roles and Responsibility for day to day records handling and storage was not submitted CL-6 was raised. . A documented procedure was submitted.	CL-6	OK
B.7.3.3	Are the data management and quality assurance and quality control procedures sufficient to ensure that the emission reductions achieved by/resulting from the project can be reported ex post and verified?	01/ ,/02, /07/,/09/, /65/,/67/ /68/ /B02/,/B03 / /73/	DR, I	See above in B.7.3.3	CL-6	OK

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Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
B.7.3.4	Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later?	01/ ,/02/ /07/,/09/ /65/,/67/ /68/ /B02/,/B03 / /73/	DR,I	See above in B.7.3.3	CL-6	OK
C. Duration of the project activity and crediting period.						
C.1 Start date of project activity						
C.1.1	What is the expected starting date of the project activity and how has been determined? When was the first construction activity?	/01/ & /02/ /,/31/,/32/ /33/,/B02/ /B03/ /73/	DR,I	The project start date is 19/07/2011 (Date of first payment toward purchase of equipment) Which is in line with CDM glossary of terms, ver. 6.0. This was validated through the bank payment advice of the above value and company's ledger of that date where value of. 251022610.65 NGN and the midpoint weekly currency conversion rate for the week July 18-24, 2011 on http://www.oanda.com/currency/historical-rates/	OK	OK
C.1.2	What is the expected operational lifetime of the	/01/ &		The expected	Ok	OK

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Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
	project activity? Is it reasonable?	/02/,/B02 /28/		operational life time for the project is 20-25 years. This has been confirmed by Technical Director of the Flour Mills PLC. This was validated through the document provided by FMPLC as well as http://www.nrel.gov/docs/fy00osti/27715.pdf		
C.2 Start date of crediting period						
C.2.1	What is the expected starting date of the proposed project activity? Does the crediting period start eight weeks after the request for registration?	/01/ & /02/ ,/B02/	DR, I	The start date of project activity 19/07/2011 and the crediting period activity is 01/07/2012 01/01/2013 or the date of registration whichever is later.	OK	OK
C.2.2	What is the length of the crediting period? Is it clearly defined and reasonable?	/01/ & /02/ ,/B02/	DR,I	Renewable crediting period of 7 years opted for the project.	OK	OK
D. Environmental Impact						
D.1.1	Has an analysis of the environment impacts of the project activity been undertaken? Is it clearly and sufficiently described in the PDD?	/B02/,/01/ & /02/ /05/,/06/ /07/,/08/ /09/,/10/ /24/,/25/	DR	Analysis of Environmental Impact have been explained clearly and distinctly The PDD identifies components, type of impact, mitigation measures & residual	OK	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
				impact for each stage of project Viz. <ul style="list-style-type: none"> • During site preparation • During Construction • During Operation. 		
D.1.2	Will the project create any adverse environmental effects? Are transboundary environmental impacts considered in the analysis?	/B02/,/01/ & /02/, /05/,/06/, /07/,/08/ /09/,/10/ /24/,/25/	DR, I	Project has in place the mitigation program in the form of Environmental Management programs which have been implemented. As a result of mitigation actions the residual impacts will be low. Yes trans boundary impacts has been considered in the project boundary in the form of transportation of material during all three stages as listed above.	OK	OK
D.1.3	Is the analysis of the environmental impacts required by the legislation of the Host Country? If yes, has the EIA has been approved by local Government? Does the approval contain any conditions that need monitoring?	/B02/,/01/ & /02/, /05/,/06/, /07/,/08/ /09/,/10/ /24/,/25/	DR,	Since the project is a part of Greenfield Sugar Refinery, the Environmental Impact is required to be assessed as per Environmental Impact Assessment Act No. 86	OK	OK

VALIDATION REPORT

Checklist Question	Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
			<p>of 1992, sec. 64, No. 13. EIA has been approved and issued a certificate dated 19/08/2010 by the Federal Ministry of Environment Nigeria for a project to proceed ahead</p> <p>Yes the certificate states the following conditions conditions</p> <ul style="list-style-type: none"> • There shall be impact mitigation monitoring by ministry in collaboration with other regulatory authorities. • There shall be full implementation of Environment management plan of the project. <p>GSLC has developed and implemented Environment Management systems as per ISO1`4001:2004. Under this system</p>		

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
				EMPs have been implemented. The results of EMPs are planned to be monitored and continually improved.		
D.1.4	Is the project in line with the current environmental legislation in the Host Country?	/B02/,/01/ & /02/, /05/,/06/, /07/,/08/ /09/,/10/ /24/,/25/	DR,	Yes the project is in line with current environmental legislation	OK	OK
E. Local stakeholder consultation						
E.1.1	Were the local stakeholders invited by the PP prior to the publication of the PDD to the UNFCCC website?	/B02/,/01/ & /02/, /05/,/06/, /07/,/08/ /09/,/10/ /24/,/25/ /03/	DR	As per PDD the validation of local stakeholder consultation held on 12 th December 2009. Validation of same (as per paragraph 139 of VVS 2.01) could not be completed as GSPLC has not submitted the requisite documents to the DOE. However Validation team was able to interact with local stakeholder during site visit as listed on the page X of the report..The stake	CL-7	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
				<p>holders expressed their joy over the new Greenfield plant on following accounts.</p> <ul style="list-style-type: none"> • Creation of new jobs. • Enhanced power availability • Company's CSR policy. and support in community development healthcare, traffic management, education <p>CL-7 was raised requesting PP submit all documents relating to stakeholder consultation meeting viz list of invitees, List of participants, Minutes of meetings, Comments received and how the same were responded same were responded . The PDD has been revised to include the comments See details in Table -3</p>		
E.1.2	Were the local stakeholders invited to comment	/B02/,/01/	DR, I	See above in E.1.1	CL-7	OK

VALIDATION REPORT

Checklist Question		Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
	on the proposed project activity?	& /02/, /05/,/06/, /07/,/08/ /09/,/10/ /24/,/25/ /03/				
E.1.3	Is the summary of the comments received from the stakeholders, provided in the PDD complete?	/B02/,/01/ & /02/, /05/,/06/, /07/,/08/ /09/,/10/ /24/,/25/ /03/	DR	See above in E.1.1	CL-7	Ok
E.1.4	Has due account been taken by the project participants of any stakeholder comments received?	/B02/,/01/ & /02/, /05/,/06/, /07/,/08/ /09/,/10/ /24/,/25/ /03/	DR, I	See above in E.1.1	CL-7	OK
E.1.5	If a stakeholder consultation process is required by regulations/laws in the Host Country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	/B02/,/01/ & /02/, /05/,/06/, /07/,/08/ /09/,/10/ /24/,/25/ /03/	DR, I	As per the Nigerian government EIA Act No. 86 of the year 1992 the Federal Ministry of Environment invited public comments on the EIA report submitted by GSLC. The commenting period allowed was between 19 th Oct-16 th Nov.2009. Subsequent to this . Federal	OK	OK

VALIDATION REPORT

Checklist Question	Reference	MoV ³	Comments	Draft Conclusion	Final Conclusion
			Ministry of Environment Nigeria issued a certificate dated 19/08/2010 for the project to proceed ahead		

TABLE 3 RESOLUTION OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
<p>CAR-1</p> <ul style="list-style-type: none"> a) The capacity of Turbines mentioned in PDD is not matching with its name plate details at project site. b) During site visit it was confirmed the project will supply electricity to the other divisions of “Flour Mills Nigeria” besides flour mill as mentioned in section A.1 of PDD. Please include all major divisions. c) Section A1 of the PDD does not have any details of the steam generation system installed as part of project activity. 	A.2.1	<p>a) The text and table in section A.3 have been revised to reflect the actual turbine capacities of 14.4MW each.</p> <p>b) The text in section A.1 has been revised to include a description of the other divisions of FMN. The revised text reads: “The remaining power-generation capacity will be earmarked for the sale of electricity to Flour Mills of Nigeria PLC (the project customer), for its flour mill operations located adjacent to the sugar refinery site, comprising flour and rice milling as well as cement, fertilizer and port operations.</p>	<p>PDD Revised and corrected OK☑.</p> <p>PDD Revised and corrected OK☑.</p> <p>Further Response by DOE The revision of PDD is not correct. There are two Nos. HRSG while PDD states only “a”. Please correct. In</p>

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Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>Flour Mills of Nigeria PLC is a conglomerate operating in three distinct yet closely integrated categories: Food, Agro- Allied and Logistics Support and other subsidiaries. The electricity supplied from the project activity to the group will be distributed from a common main serving each of the Apapa divisions.”</p> <p>c) Section A.1 has been revised as follows (additions in blue): “The energy requirement of the refinery includes process steam and power. Waste heat at the exhaust of each of the gas turbines will be recuperated and passed through a Heat Recovery Steam Generator (HRSG) to produce low pressure to generate steam that will be utilized in the refinery. The installed capacity of the HRSG will be 110 tonnes of steam/hour.”</p> <p>Further Response by PP</p> <p>The statement on the numbers of HRSG in Sections A.1 and A.3 has been revised to clearly reflect the fact that there are 2 HRSG (one attached to each turbine, HRSG-1 and HRSG-2). The HRSG-1 it has been clarified, has been designed for a steam capacity of 30 tonnes/hr, from heat</p>	<p>section A3 also Nos of HRSG in “ Steam capacity “are not mentioned correctly</p> <p>Further Response by DOE</p> <p>The sectioned PDD has been revised and capacities of Steam generating systems have been transparently included in section A</p> <p>OK☑.</p>

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Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		recuperation only, while HRSG-2 which is connected to the second turbine unit has been designed to produce up to 110 tonnes/hr of steam from a combination of heat recuperation and auxiliary firing. It has also been clarified that this arrangement has been put in place to ensure that the steam production of the CHP is adequate to meet the steam demand of the refinery at all times. These editing has been reflected in Sections A.1. and A.3. of the PDD	
<p>CAR-2</p> <p>National sustainable development criteria provided by Nigerian DNA has not been referred in the PDD. PP requested to explain in detail how proposed project activity fulfils the indicators of sustainable development in Nigeria.</p>	A.2.1	<p>Section A.1 of the PDD has been revised as follows (additions in blue):</p> <p>“There is no specific document dedicated to spelling out the sustainable development goals that must be achieved by CDM Projects in Nigeria. The Vision 20:2020 document of the Federal Government of Nigeria has served as, and remains the basis for, sustainable development goals and targets for development in Nigeria.^{Footnote} For CDM Projects in Nigeria, the Vision 20:2020 document provides frameworks for sectoral sustainable development. Specifically, a key requirement in the Nigerian Vision 20:20 Document for the</p>	<p>PDD revised and corrected OK. DOE validates that the information through the supporting document “FGN, Nigeria Vision 20:2020: The Final Implementation Plan (2010-2013), Volume II-Sectoral Plans and Programmes, May 2010”</p> <p>OK <input checked="" type="checkbox"/></p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>Nigerian Manufacturing Sector is that investment in the sector must contribute to creating an enabling operating environment that allows for substantial improvement in efficiency, productivity and profitability of the sector (see pages 97-108). This project contributes to sustainable development in Nigeria by promoting the use of an advanced and energy-efficient technology for providing power and steam to enterprises in the industrial sector (food manufacturing). Given the high energy efficiency of the project activity (compared to the norm in the sector), the project satisfies a key thrust of the Vision 20:20, as well as the key target of significant improvement in productivity of the manufacturing activity, through the achievement of higher energy use efficiency. The project increases experience in the country with combined heat and power (CHP) technologies, reduces waste of natural gas as a national resource, and – by promoting the efficient use of natural gas – reduces emissions, thereby reducing both global and local environmental impacts.”</p> <p>Footnote: FGN, Nigeria Vision 20:2020: The Final Implementation Plan (2010-</p>	

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Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		2013), Volume II-Sectoral Plans and Programmes, May 2010 Reference: NV2020 NIP Volume II.pdf	
<p>CAR-3</p> <p>a) In sec. A.2.4, location of the project activity is not in line with, Guidelines for project design document (CDM-PDD) and the proposed new baseline and monitoring methodologies (CDM-NM) ver. 1.0. EB 66, Annex. 08.</p> <p>b) The geo coordinates mentioned in PDD are incorrect and could not be validated through Google earth</p>	A.2.3	<p>a) As per the guidelines referred to in this request, the description of the location of the project activity has been revised to include two maps: a local map showing the location of the facility in Apapa and another map indicating the proximity of Apapa to Lagos, Nigeria. The following text has been added: “The project is located in Apapa, Nigeria.”</p> <p>b) The geo-coordinates have been slightly adjusted to reflect those indicated using Google Maps. A Google Maps file has been provided to enable validation of the location. Reference: GSC Power Plant.kml</p>	<p>The PDD has been revised to include location as per EB 66, Annex. 08. <input checked="" type="checkbox"/></p> <p>The geo stationary coordinates have been confirmed through Google earth OK <input checked="" type="checkbox"/></p>
<p>CAR-4</p> <p>As per Paragraph 77 of VVS version 2.0 PP is required to provide information in PDD,</p>	B.2.1	The text in section B.2 has been replaced with a table where the applicability conditions of the meth are	Applicability conditions have been defined as per AMS 0102 Version 01.0.0 and against each criteria. It

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
<p>how projects qualifies against each applicability conditions of applied methodology.</p> <p>PP is also requested to submit documentation / references/supporting evidences that have been used to justify each of the applicability criteria.</p>		<p>juxtaposed against the actual situation for the proposed project. References to supporting documentation have been provided.</p>	<p>has been demonstrated how the project meets each of the same. DOE accepts the revisions made in PDD along with the references mentioned. CAR closed</p> <p>OK☑.</p>
<p>CAR-5</p> <p>Application of “Combined Tool to identify the baseline scenario and demonstrate additionality” ver. 4.0 tool is not carried out as follows:-</p> <p>Identifying relevant alternative scenarios in the applicable geographical area as per sub step 1a.</p> <p>PDD does not elaborate how the alternate scenarios are consistent with the mandatory applicable laws and regulations.</p> <p>Outcome of step 1b is not clearly tabulated</p>	B.4.1	<p>Relevant alternative scenarios in the applicable geographical area i.e. Nigeria, has been included in Step 1a. For example where we were unable to find 5 possible candidates in Nigeria for the boiler with a not more than 5 years vintage in the food sector, the geographical boundary has been extended to Ghana</p> <p>A discussion on how the identified scenarios are consistent with mandatory applicable laws and regulations has been included in Step 1b;</p> <p>We did not need to include a table as the outcome of step 1b is simply that all the identified scenarios satisfied mandatory laws and regulations of the nation. The laws and regulations, which is the NERC guideline for commerce in the sector has been made available to the DOE.</p> <p>IV. EB50 Annex 13 is a guideline on</p>	<p>Relevant alternative scenarios in the applicable geographical area as per sub step 1a. of the methodology have been identified covering the five</p> <p>(d) Alternatives for meeting the electricity demand of the Greenfield Sugar Refinery in the absence of the project activity;</p> <p>(e) Alternatives for meeting the heat/steam demand of the Greenfield Sugar Refinery in the absence of the project activity;</p> <p>(f) Alternatives for meeting the electricity demand of each of the project customer in the absence of the project activity.</p> <p>OK☑</p> <p>DOE validates that the identified scenarios in relation to above are</p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
The identification & assessment of barriers is not carried out as per EB50 Annex 13		the use of barrier analysis to determine whether or not a project activity is additional. In this PDD, we demonstrate the Additionality of the project scenario using investment analysis, not barrier analysis (see Section B5). However, technological barriers are used in the PDD to eliminate alternative baseline scenarios (see Section B.4). This is done following the <i>Combined tool to identify the baseline scenario and demonstrate additionality</i> . The original text combined steps 2a and 2b of this tool. The text has been revised to clearly separate the steps. In accordance with EB50 Annex 13, barriers to the project scenario are not used exclusively to eliminate the project scenario from consideration.	consistent with NERC guidelines Additionality of the project is carried out using Investment analysis. Technological barriers are used in the PDD to eliminate alternative baseline scenarios. OK☑
CAR-6 The PP has not demonstrated in PDD How Annex 1 of methodology AM0102 “Procedure for identification of reference energy plant” was applied for determination of Greenhouse reference captive power plant and boiler. PP is requested to substantiate key assumptions and rationales used in the procedure. The same references shall be also required	B.4.3	How the procedures described in Annex 1 of AM0102 was applied to determine the Reference Power Plant and Boiler has now been explicitly included in B.4 of the PDD. Key assumptions and rationales used in the procedure have been explicitly included in Section B.4 References has been provided in the revised PDD for the following values used in B.6.2:	The PDD has been revised to include Annex 1 of methodology AM0102 “Procedure for identification of reference energy plant” was applied for determination of Greenhouse reference captive power plant and boiler. The section B.6.2 tabulates all the assumptions in section ZB.6.2 OK☑

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
for the values used B.6.2		<p>EGcap,m, - 3.039 MW Is the capacity of a single Unit of the Reference Power Plant, while 10 of such units will be needed to fulfil the baseline capacity (See Table 2 of the PDD)</p> <p>HGcap,m is – 16 tonnes/hr is the size of a unit of the Reference Boiler while 6 Units will be required to supply same quantity of steam as the project facility (See Table 4 of the PDD)</p> <p>Y_m the year of commissioning of both the Reference Power and Boiler plants were determined from the data collected for the Reference plant determination and presented in Tables 2 and 4 of the PDD for the Power plant and boiler respectively</p> <p>Clear sources of all the other values presented in B.6.2 are included in the section</p>	
<p>CAR-7</p> <p>Please include the chronology of events right from the conception of project till proposed date of commissioning.</p>	B.5.3.3	<p>A chronology of events for the purpose of documenting prior consideration of the CDM in the development of this project has been added to section B5 of the PDD.</p> <p>Reference:</p> <p>Please replace the following file submitted to you on September 14th. A small error was discovered and has been corrected. The revised version</p>	<p>Chronology of events for the CDM development of this project has been added to section B5 of the PDD however following discrepancies are observed.</p> <p>Year of submission of prior consideration is not correct.</p> <p>It is not clear why there was such a large time gap between appointment of CDM consultant (January 2011)</p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>has been submitted with the other new supporting documents accompanying this form.</p> <p>A4. Project_Schedule.pdf</p> <p>Further Response by PP</p> <p>The year of submission of the Prior Consideration has been revised to Feb. 2011, instead of the Feb 2012 that was mistakenly typed in.</p> <p>The large time gap between the appointment of the CDM Consultant (Jan. 2011) and development of the first version of the PDD (June 2012) can be attributed to the following:</p> <p>As soon as the CDM Consultant was appointed it was determined that there was no applicable registered UNFCCC methodology for the project;</p> <p>The CDM Consultant developed a New Methodology (NM0352), which was submitted to the UNFCCC Secretariat in April 2011 and eventually approved as AM0102 in February 2012. The development of the Draft PDD commenced immediately and was completed in June 2012.</p> <p>The development of NM0352, its subsequent approval as AM0102 and the use of the approved methodology to develop the PDD has now been added to the chronology of events in</p>	<p>and development of first version of PDD (June 2012). Please clarify</p> <p>Further Response by DOE</p> <p>The chronology has been revised to include the timeline relating to approval of methodology ,</p> <p>OK☑</p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		the revised PDD.	
<p>CAR-8</p> <p>Validation of Investment analysis could not be carried out due to incomplete information. PP need to provide revised Financial sheet with the following corrections</p> <p>Stating the source/references of every input value used in Investment review.</p> <p>Correcting the technical life of equipment as per the Certificate issued by Technical director.</p> <p>Correcting the generation capacities of electricity and steam</p> <p>Correcting interlinking of some of the cells to external files.</p> <p>Including the fair value of assets in the cash flow at the end of assessment period.</p>	B.5.4.3	<p>The validation can now be carried out as the Financial sheet has been revised.</p> <p>A Sheet named “Data Entry Sheet” has now been included in the Investment Analysis spread sheet. The sheet contains all the inputs used in the analyses and their sources have been specified in that sheet. Furthermore, the sheets where these values have been used have been linked to the “Data Entry Sheet”.</p> <p>The life of equipment has now been changed from 15 to 25 years in the Investment Analyses spread sheet</p> <p>The generation capacity of electricity is now 2X14.4 MW, while steam supplied to Sugar Refinery is 80 tonnes/hr</p> <p>All the relevant cells are now linked to the sources of the data through the Sheet <Data Entry Sheet></p> <p>The Investment analysis is now carried out for 20 years and the fair value of the assets at the 20th year has been added to the net cash flow</p>	<p>As per paragraph 120 (a) all parameters and values used in investment analysis needs to be checked for accuracy and suitability. Hence the values used needs to be substantiated with evidences and also must include rationales in the PDD why the values chosen are most appropriate.</p> <p>DOE could not complete the validation of investment analysis (IA) on account of following</p> <p>No evidence , rationales and supporting documents have been provided for the values used in complete spread sheet “GS Financial Analysis”</p> <p>4.1.5 The investment cost is required to be broken-up into major equipment costs, required construction work, and installation have not been used in the investment analysis as per methodology AM0102 version 01</p> <p>Local costs used in “Power Plant Total Costs in “CAPEX Summary” have no evidences to support the values used.</p> <p>The values of CAPEX CHP-1 & CHP-</p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>of that year.</p> <p>Reference: OPEX.pdf is referred to in the financial analysis spread sheet.</p> <p>The Investment analysis spread sheet has now been thoroughly revised. All the parameters and values used have been checked for accuracy and suitability. All the values of the parameters have now been supported with documentary evidences to show their appropriateness. The following are key responses to the issues raised by the DOE:</p> <p>Supporting documents with explanatory notes have now been provided for all the values used in the spread sheet <GS Financial Analysis – Baseline and Additionality – 20121129.xls>. Specifically, all input parameters are documented in the Sheet <Data Entry Sheet> where the values and sources of the data are presented.</p> <p>As shown in the document <Power Plant Capital Cost rev 11 (F).pdf>, the investment cost has been broken into categories including: the equipment (whose details are presented in a Proforma document); construction</p>	<p>2 are not matching with the values used in “CAPEX Summary</p> <p>What is the justification GS Management Decision-Valuation Decision to charge 60% of the PPA tariff for Electricity Consumed by GS</p> <p>Where the values are provided by GS then it should be substantiated that the same are in line with the prevalent values used in the country at the time of investment decision and are the most appropriate and conservative?</p> <p>Further Response by DOE</p> <p>AS Per chronology included in the revised PDD It is not clear what is the Date of investment decision (DID)? It should be clearly identified in the chronology so that the Investment analysis can be based on that date.</p> <p>The values used in the investment analysis should be the values available on DID and not thereafter. e.g. Cost Of Electricity. Natural gas and inflation trends. Please review all values used in investment analysis with above reference.</p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>work and installation and commissioning costs.</p> <p>Local costs used in the pdf document mentioned in (II) above are transparently elucidated and documentary evidence of those that has been implemented will be made available to the DOE.</p> <p>The values of the CAPEX of CHP-1 and CHP-2 presented in the supporting document have now been made to be consistent with values used in the spread sheet,</p> <p>The value of the electricity supplied to the Refinery has now been revised. The approach used here is that GS will charge the Refinery for the electricity supplied at the rate recommended by the regulatory body NERC. The idea here is that any competitors Refinery located in areas where grid electricity supply may be better than average, will not have a competitive advantage over the GS facility, which will also enjoy a similar tariff even though the electricity is NOT from the grid.</p> <p>Wherever relevant and possible we have provided evidences about the conservativeness and country universal usage of some parameter values used in the analysis.</p>	<p>The calculation of annual value of natural gas is not correct in complete investment analysis, hence the determined IRRs are not correct</p> <p>Please provide evidences for the reference Plant values obtained from "Reference Plant Owners used on the "Data Entry Sheet" tab of the investment analysis.</p> <p>Further Response by DOE</p> <p>The Date of Investment decision has been defined in the chronology of the events.</p> <p>. The key input values in the investment analysis that relate to this issue: a) the electricity tariff and escalation rate applied for Golden Sugar; b) the electricity tariff and escalation rate applied for Flour Mills Nigeria (the project customer), and; c) the natural gas price and escalation rate. These were all available to Golden Sugar prior to making their final investment decision in July 2011. The is evidenced by the dates of the documentation and evidence</p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>Further Response by PP</p> <p>1. The date of the final investment decision applied in the investment analysis was July 2011, which was indicated in the chronology in the PDD as follows:</p> <p>“Project start – determined by first payment for equipment for the CHP plant.”</p> <p>Evidence of this payment was provided to the DOE for validation. To make this abundantly clear, we have edited the PDD to now read:</p> <p>“July 2011: Project start (date of final investment decision) – determined by first payment for equipment for the CHP plant.”</p> <p>2. There are three key input values in the investment analysis that relate to this issue: a) the electricity tariff and escalation rate applied for Golden Sugar; b) the electricity tariff and escalation rate applied for Flour Mills Nigeria (the project customer), and; c) the natural gas price and escalation rate. These were all available to Golden Sugar prior to making their final investment decision in July 2011. The is evidenced by the dates of the documentation for these inputs, as follows:</p>	<p>submitted.</p> <p>All values have been chosen appropriately and are in line with investment decision.</p> <p>. Evidences for the data collected from reference plant database owners are provided in the form of copies of email correspondence in the attached PDF. Have been provided. The reference plant data has been also substantiated with the evidences from Manufacturer/ and existing plant owners.</p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>a) The electricity tariff assumption and the tariff escalation rate for Golden Sugar were based on a decision issued by the Nigerian Electricity Regulatory Commission (NERC) on July 1 2008, in which electricity tariffs were published for the period from July 1, 2008 through June 30, 2013 (See: http://www.nercng.org/index.php/document-library/Tariff-Charges--and--Market-Rules/ and MYTO 2008-2013 NERC.pdf). This document was available at the time of the final investment decision and was used to determine both the Golden Sugar tariff and the tariff escalation rate.</p> <p>b) The electricity tariff for the project customer was finalized in the power purchase agreement between Golden Sugar and Flour Mills Nigeria (FMN), dated August 1st, 2011. However, this final signed contract was the result of prior negotiations between the two companies. FMN wrote a letter to Golden Sugar dated June 27th 2011 (i.e. prior to the DID) confirming their intention to buy power from the project and confirming their acceptance of the electricity price and their understanding that the price would increase over time. This letter should have been in the documentation sent</p>	

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>for validation previously but may have fallen through the cracks. A scanned copy is attached here. As is praxis in the sector, the escalation rate used for the project customer is the same as the escalation rate used for the national grid. (see item (a), above).</p> <p>c) The natural gas price was based on a decision by the Natural Gas Company of Nigeria during the last quarter of 2010. This was documented in a letter published by their MD on 29 November 2010, which provided gas prices for 2010 through 2014. This letter was provided to the DOE for validation. The escalation rate for the price of natural gas was also based on the data provided in this letter.</p> <p>3. The calculation of the annual value of natural gas has been corrected. The resulting change in the IRRs does not affect the additionality of the project. We are waiting to update the PDD until item 4 is resolved, so that we do not change the same text twice.</p> <p>4. Evidences for the data collected from reference plant database owners are provided in the form of copies of email correspondence in the attached PDF. However, the owner of the boiler established as the reference plant boiler provided us with technical</p>	

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>information but was unwilling to release the financials (CAPEX and OPEX) in writing (this information was only provided verbally). To resolve this problem we have requested and been promised current CAPEX and OPEX data from the equipment manufacturer. When it arrives (expected no later than December 19th, the investment analysis will be revised accordingly (only 2 input cells will change, but this will affect the IRR results). The PDD will also be revised to reflect the new inputs and results.</p> <p>References: PDD form05 Golden Sugar_rev 121212.doc MYTO 2008-2013 NERC.pdf FMN Letter of Intent to Purchase Power from GSC.docx GS Financial Analysis - Baseline and Additionality_Dec 17 2012.xlsx REF Plant correspondence.pdf</p>	
<p>CAR-9</p> <p>Discussion on common practice is not in line with applied tool and not appropriate. Please correct and provide all supporting references</p>	B.5.6.1	<p>The text in section B5 under Step4, Common Practice, has been revised to read as follows (additions in blue): In March 2012 a project team visited Nigeria and performed a survey of energy facilities in the food industry. At that time, only two industrial</p>	<p>The Common Practise of not having many CHP Plants have been validated through following link. In 2009 there was no CHP Plant in Nigeria</p> <p>http://www.iea.org/stats/balancetable.asp?COUNTRY_CODE=NG</p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>operators with heat and power demand were identified to have installed cogeneration facilities. The first, at Dangote Foods Limited, cannot strictly be said to be a CHP as a substantial portion of excess steam produced by the facility is dumped (wasted), as there are no markets for the steam from nearby facilities. Coca Cola Nigeria recently (2011) also installed a CHP. However, the capacity of this plant is only 4MW.</p> <p><small>Footnote 2</small> In accordance with the <i>Guidelines on Common Practice</i> (EB69 Annex), the applicable capacity or output range for evaluating common practice in the use of CHP technology for this project is +/-50% of the total design capacity or output of the proposed project activity (28.8MW). Hence the range of CHP capacities relevant for this common practice analysis is 14.4 – 43.2MW. There are no CHP plants within this capacity range installed in the food sector in Nigeria. As a result of this analysis we conclude that the Golden Sugar CHP facility is first-of-its-kind (<i>i.e.</i> not common practice) in the food sector in Nigeria, but it is also clear that efficient applications of CHP in the food sector cannot be considered common practice in Nigeria.</p>	<p>The information provided was validated by DOE through the following link http://www.cospp.com/articles/2011/05/nbc-to-build-65-mw-chp-plant-in-nigeria.html</p> <p>Hence Common Practise is addressed in revised PDD</p> <p>CAR closed <input checked="" type="checkbox"/></p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>Footnote 1: Proprietary information from Coca Cola Nigeria documenting the capacity of this CHP plant has been provided to the DOE for validation.</p> <p>Footnote 2: First of its kind here refers to the Guidelines definition (EB69 Annex 7) that: "The project is the first in the applicable geographical area that applies a technology that is different from technologies that are implemented by any other project, which are able to deliver the same output and have started commercial operation in the applicable geographical area before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of the proposed project activity, whichever is earlier. The project will not claim first-of-its-kind as an additionality criterion because the selected project crediting period is renewable.</p>	
<p>CAR-10 Validation of Baseline emissions & Emission reduction calculation could not be completed for following reasons:- Lack of information references for input values used in the sheets. "GS Emission</p>	B.5.6.2	<p>The emission reduction calculation file has been revised as follows: a,b) All inputs that were derived from the financial analysis have been updated. These have been inserted as numbers rather than links to the</p>	<p>The revised file have been reviewed and it needs following correction</p> <p>Spread sheet opening sheet should be the summary sheet consisting clearly of Baseline emissions, Project</p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
<p>Reduction Calculations Final.xls", & "Calculation - Specific CO2 Content Natural Gas".</p> <p>There are some cells which are linked with external files. Please ensure that there is no linking of cells with any other external file</p> <p>For calculating project emissions It is not cleared why option A is a preferred approach</p>		<p>financial analysis spread sheet (GS Financial Analysis - Baseline and Additionality - Final_C.xlsx). Their source locations (filename, sheet name and cell numbers) have been provided. The file "Calculation – Specific CO2 Content Natural Gas" is no longer in use. The references for data previously sourced from this file have been updated.</p> <p>c) Option A is selected as the project scenario because it has the highest return on investment and, therefore, is the most conservative scenario. The use of Option A for the project emissions calculation is an outcome of this selection.</p> <p>References: GS Emission Reduction Calculations Final 30052012 rev 291012.xlsx GS Financial Analysis - Baseline and Additionality - Final_C.xlsx</p> <p>The ER spread sheet has been revised as follows: The opening sheet is now the summary sheet that provides summaries of: baseline emission; project emissions; leakage emissions and emission reduction, as suggested</p>	<p>emissions leakages and emission reductions.</p> <p>The values used from the external spread sheet should be consolidated on one sheet and then linked</p> <p>Please revise the PDD to include justification.</p> <p>Further Response BY DOE The spread sheet is delinked and values are validated. However the total Estimated amount of annual average GHG emission reductions in PDD is incorrect Please correct the PDD</p> <p>Further Response BY DOE The PDD had been corrected <input checked="" type="checkbox"/></p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>by the DOE.</p> <p>All the values used from the external spread sheet are now consolidated in a Sheet titled as <Data from GS Financial Analysis></p> <p>Further Response BY PP</p> <p>Response 12-12-12:</p> <p>The annual average GHG emission reductions have been corrected on pages 1 and 2 of the PDD to match the value calculated in the spread sheet.</p> <p>Reference:</p> <p>PDD form05 Golden Sugar_rev 121212.doc</p>	
<p>CAR-11</p> <p>PP requested to include metering details , monitoring frequency, recording frequency calibration frequency of measuring instruments, accuracy class for all the parameters .in section B.7.1 of PDD</p>	B.7.1.2	<p>Metering details, monitoring frequency, recording frequency, calibration frequency of measuring instruments for all parameters has now been included in section B7.1 of PDD.</p> <p>The Tables in Section B.7.1 of the PDD has been revised by adding the frequency of calibration and including the standards that will be utilized for the calibration.</p>	<p>The Details have been added in the revised PDD however. The frequency of calibration is not stated clearly. In case we have any national standard or Manufacturer's recommendation stating the same then it should be included in the PDD</p> <p>The Tables in Section B.7.1 of the PDD has been revised by adding the frequency of calibration and including the standards that will be utilized for the calibration. The PDD has been revised☑</p>
CL-1	A.3.1	On October 15 th 2010 the MD of	The response does not answer the

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
<p>The technical specification of Heat recovery Boiler system is 110 T/ hr at 10 bar .While the Peer Review report dated 22/10/2010 issued by IPRO Industrieprojekt GMBH assumes the boiler capacity of 30T/H at 10 bar.</p> <p>Please clarify why such large discrepancy exists and what were the basis of enhancing the capacity of the project by 100% over the “Booker Tete” Technical Feasibility report</p>		<p>Golden Sugar requested the German engineering firm IPRO Industrieprojekt GmbH to perform a technical peer review of the of the Booker Tate feasibility study for the Golden Sugar refinery. Amongst the conclusions drawn by IPRO – provided to Golden Sugar in a letter dated October 22nd 2010 – was a recommendation that the energy system for the refinery be re-sized (i.e. a second gas turbine and heat recovery boiler), in order to ensure that it would efficiently meet the full steam requirements of the refinery. This solution would result in excess power that could be sold to Flour Mills of Nigeria PLC. The MD of Golden Sugar decided to act on this proposal, and indicated as much to the Golden Sugar Board of Directors on October 29th 2010. This process of revising the design of the energy system resulted in the discrepancy noted in this CL. The references provided below (amongst the scanned documents sent to Carbon Check on September 14th 2012) document the sequence of events recounted here.</p> <p>References: A. Booker Tate Technical review of Golden Sugar Company refinery project Nigeria Final Report.pdf</p>	<p>clarification sought</p> <p>Further Response BY DOE</p> <p>The PP has been revised the PDD with clear description of HRSG and capacities.</p> <p>The response to clarification has been accepted</p> <p>OK☑</p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>B. Request for Peer Review-Technical Review of the Golden Sugar Refinery Project Nigeria - Booker Tate - September 2010 - 15 Oct 2010.pdf</p> <p>C. 2010-10-22 Letter to Golden Sugar Company.pdf</p> <p>D. GSC Internal Memo 29 Oct 2010.pdf</p> <p>Further Response BY PP</p> <p>The following clarification on the discrepancy observed by the DOE vis-a-vis the steam production capacity of the project plant:</p> <p>Each of the two turbines is fitted with a Heat Recovery Steam Generator. There are therefore 2 HRSG (HRSG-1 and HRSG-2). HRSG-1 which is attached to Turbine-1 has a design steam production capacity of 110 tonnes of steam/hour. This capacity is made up of 30 tonnes of steam/hour produced from heat recuperation while the balance 80 tonnes/hour is produced through supplementary firing. HRSG-2 is attached to the exhaust of Turbine-2 where it produces 30 tonnes/hour of steam from heat recuperation alone. The design has been developed to ensure that the steam requirement at the sugar refinery is met with the highest</p>	

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		energy efficiency.	
<p>CL-2</p> <p>Following documents have not been submitted for validation:-</p> <ol style="list-style-type: none"> Host Country approval (LoA) from both the parties Nigeria and Switzerland Modalities of Communication 	A.4.3	<p>I. Scans of the Host Country Letter of Approval were submitted to Carbon Check on October 14th 2012. See file references below.</p> <p>II. The Modalities of Communication form is in the process or preparation and signature by GSC and Standard Bank and will be submitted by courier directly to Carbon Check.</p> <p>References: Loa Golden sugar P1 001.jpg LoA Golden Sugar P2 001.jpg</p> <p>Further Response BY PP The LOA of United Kingdom has been submitted</p> <p>Further Response BY PP At the time of webhosting Standard bank thought of getting the approval from Switzerland. They changed the plan when they were made aware that they must be domicile of that country. Hence they applied for LoA from UK</p>	<p>Host country approval dated 04th October has been submitted and the same have been validated as per 45-52 of VVS 02</p> <p>The authenticity of the DNA Letter have been Verified by the most latest registered project #6672 in Nigeria. The DNA approval letter for the same was issued on 26th April 2012.</p> <p>The signatory for both approvals are same.</p> <p>Further Response BY DOE The LOA of Switzerland has not been submitted.</p> <p>Further Response BY DOE In the web hosted version of PDD the Annex-1 party was Switzerland Please explain why it was changed?</p> <p>Further Response BY DOE DOE accept clarification OK <input checked="" type="checkbox"/></p>
<p>CL-3</p> <p>The 'scenario A' in table 2 of PDD does not list B2 scenario. How the same has been chosen as a baseline scenario. Please clarify</p>	B.4.3	<p>B2 is the status quo power generation onsite at the industrial customer's site. As long as GS is ready to supply electricity to the industrial customer at</p>	<p>Please submit the documentary evidence to substantiate the tariff of 24Naira/ unit & also submit evidence that the same tariff is used in billing</p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
How does 'scenario A' sufficiently take in to account relevant national and/or sectoral policies, macro-economic trends and political aspirations?.		<p>the agreed PPA, whether the electricity is from the CHP or from a reference plant implemented by GS, the industrial customer will not operate the status quo scenario as long as it can get the electricity from GS, given the fact that electricity from GS will be cheaper (at the agreed PPA). Therefore all combinations of the scenarios involving: P1 and B2; P3a and B2 and P3b and B2 can be eliminated, thus eliminating B2,</p> <p>Also, alternative P3a can only be combined with alternative H2 and B9 as it is the only alternative whereby the power demand (at the same level as in the project) by the industrial consumer can be supplied fully come from the power facility implemented by GS. Similarly, alternative P3b can only be combined with H2 and B10 as it is only alternative B10 that can allow partial supply of electricity from GS and from the industrial customers onsite facilities.</p> <p>The fact that Scenario A involves the generation of energy using more efficient technology system compared to status quo alternatives in the sector has been shown in an earlier section to be in line with Vision 20:2020 of the Federal Government of Nigeria.</p>	<p>the other divisions of Flour mill.</p> <p>Evidence submitted OK☑</p> <p>OK☑</p>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		Documentary evidence <Cost of electrical energy from Onsite Power Gen at FMN_2012.pdf> has now been provided to support the electricity charge for all units connected to the onsite generation. The Group Technical Director who is in charge of all technical issues relating to all the Business Unit and as stated in his letter the charge of Naira 24/KWh is what is charged for the account of all subsidiaries receiving power from the onsite facility.	
CL-4 Please provide all reference documents to substantiate technical barriers faced by the project	B.5.5	<p>The following References has been added as footnotes in the PDD to corroborate the technical barriers discussed:</p> <p>Footnote 10: Provides some discussion of barriers to renewable energy)</p> <p>Footnote 11: Provides more discussions on non - use of renewable energy in Nigeria</p> <p>Footnote 12:Section 3.6.6 especially Fig.13 where wind speed in the Southwest of Nigeria was characterized as being below 4 m/sec at 80m, considered as not optimal for economic wind power development---</p> <p>Document made available to the</p>	The references have been provided and validated by DOE. CAR is closed.☑

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>Validating DOE); NOTE GS Project is located in SW Nigeria</p> <p>Footnote 13: Op cit footnote 12 - also looked at the potentials for other renewable energy and concluded their low penetration. For example, only Northeast Nigeria has a solar DNI above 4.1 KWh/m2/day considered as the economic threshold for CSP and most Photovoltaic power technologies. Even then these technologies have high upfront investment costs that will make them not comparable to most gas fired power plants.</p> <p>Footnote 15: On Page 29 of the cited reference, it is stated that consumers, especially firms connected to the grid spend additional investment funds to mitigate unreliable supply of electricity from the grid</p> <p>Footnote 16: Provides further evidences of unreliable supply of grid electricity</p> <p>Footnote 17: Page 26 of the cited reference provided information on an enterprise survey carried out on Nigerian industries connected to the national grid that reported power outage incidences of more than 320 days in a year as further evidence of high unreliability of grid power</p>	

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		supplies These evidences have been submitted to the DOE for validation (see folder CL4).	
CL-5 Please clarify How the conditions stated in environment certificate No. 000262 dated 05/08/2010 will be monitored and complied with.	B.7.2.2	Please refer to the Environmental Management Plan for this project. This document was amongst the soft-copy files send to Carbon Check on September 14 th 2012. Reference: B2. Golden Sugar EMP.pdf	Review of Golden Sugar EMP.pdf has been carried out. CL stands resolved <input checked="" type="checkbox"/>
CI-6 a) Please submit a detailed Quality assurance procedure with clear role and responsibilities and also defining how the monitoring of each parameter will be carried out on daily basis. b) Procedure also must include details of data recording frequency, calibration frequency of measuring instruments, and accuracy class for all the parameters. c) In addition it should also determine how the data is stored, crosschecked and compiled, including the emergency preparedness measures available for each parameter.	B.7.3.2	a-c) Please refer to the references listed below. References: CDM Monitoring Plan _QA_QC_.pdf Course Training Elements.pdf Schematics showing monitoring points & devices1.pdf The monitoring procedure has been revised to include personnel who will be responsible for specified roles. The revised plan is attached; <CDM Monitoring Plan (QA_QC).pdf>	A monitoring procedure has been submitted but the procedure lacks clarity in describing clear roles and responsibilities. Procedure has this information hence OK <input checked="" type="checkbox"/> Procedure has this information hence OK <input checked="" type="checkbox"/>

VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
<p>CL-7</p> <p>Validation of local stake holder consultation could not be carried out as per paragraph 139 of VVS 02.0 GSCL. PP is requested to submit all documents relating to stakeholder consultation meeting viz list of invitees, List of participants, Minutes of meetings, Comments received and how the same were responded</p>	E.1.1	<p>The relevant documents on the Stakeholders forum are now made available to the DOE. They include:</p> <p>The Presentation on the project made by the GS Management;</p> <p>A write-up summarizing the Stakeholders Consultation Forum;</p> <p>Signed attendance lists;</p> <p>A copy of the advert for the holding of the Forum in a national daily;</p> <p>Stakeholder Forum meeting pictures</p> <p>The list of Stakeholders questions/comments and the responses provided by the Management of GS were included in Table in E.3 of the PDD.</p> <p>Reference:</p> <p>See Folder F (F1) in folder submitted previously: <GCSL Nigeria to Mar. Sunil></p> <p>The summary of the responses to comments received during the Global is kept in the PDD, in line with the latest Guidance for completing the PDD and a separate copy of the responses to the comments raised by the stakeholders has been prepared</p>	<p>Documents relating to stakeholder consultation meeting :- list of invitees, List of participants, Minutes of meetings, Comments received and how the same were responded</p> <p>The PDD has been revised to include the comments received</p> <p>PP's response to comments received during Global stake holder consultation needs to be submitted to DOE separately (Not to be included in PDD)</p> <p>Further Response BY DOE</p> <p>The response submitted is not related to Global stake holders comments. The comments were posted on following webpage and need to be responded on separate sheet</p> <p>http://cdm.unfccc.int/Projects/Validation/DB/CCKBPR1W7BHQ44LB9ZPE3J0L5HHR52/view.html</p> <p>Further Response BY DOE</p> <p>The PP's response to Global stakeholders comments are accepted.</p>

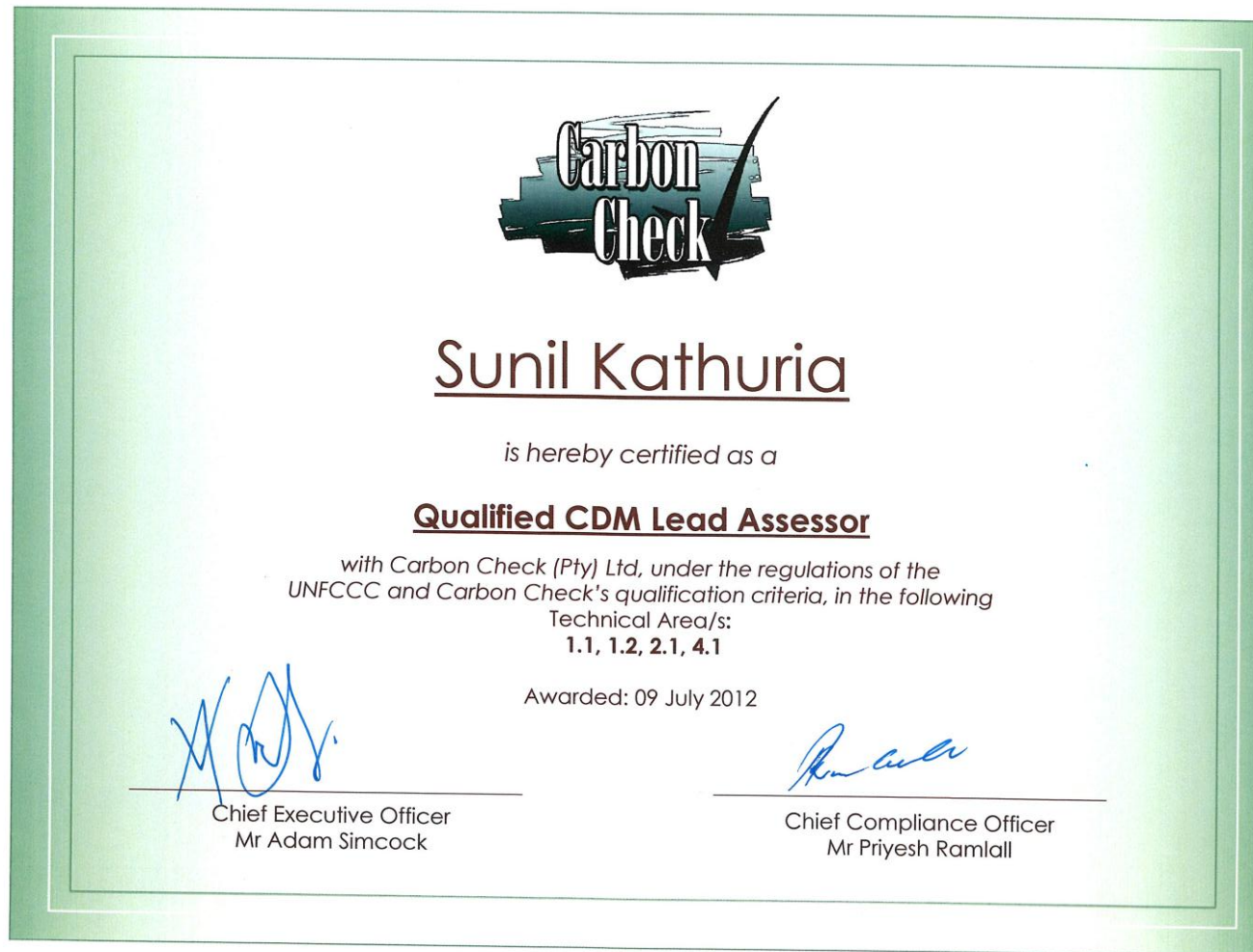
VALIDATION REPORT

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Validation Conclusion
		<p>as a separate document for submission to the DOE.</p> <p>See <Response to Comments Stakeholders Consultation.pdf></p> <p>Further Response BY PP</p> <p>Our understanding is that it is the responsibility of the DOE to provide documentation showing how global stakeholder comments have been taken into account the validation process. Excerpt from EB 50 Report Annex 48, under the heading "C. Submission and treatment of public comments":</p> <p>"16. DOEs shall acknowledge receipt of all comments submitted and made available to them via the UNFCCC CDM website and take account of such comments in conducting validation of the proposed CDM project or programme of activities."</p> <p>To support this effort we have provided the attached file.</p> <p>Reference: Global Stakeholder Consultation Comments 121212.docx</p>	Ok <input checked="" type="checkbox"/>

TABLE 4 FORWARD ACTION REQUEST

Forward action request	Reference to Table 2	Response by project participants	Validation Conclusion

Appendix B
Certificate of Competence







Pankaj Kumar

is hereby certified as a

Qualified CDM Assessor

*with Carbon Check (Pty) Ltd, under the regulations of the
UNFCCC and Carbon Check's qualification criteria, in the following
Technical Area/s:*

1.1, 1.2, 3.1, 4.5, 13.1

Awarded: 29 February 2012

Chief Executive Officer
Mr Adam Simcock

Chief Compliance Officer
Mr Priyesh Ramlall

