VALIDATION REPORT

Eco Biodiversity Sdn Bhd

METHANE CAPTURE FROM POME FOR ELECTRICITY GENERATION IN BATU PAHAT

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Date of Issue:	Project Number:
08/09/2008	CDM.VAL1214
Project Title:	Organisational Unit:
Methane capture from POME for electricity generation in Batu Pahat	SGS UKL Climate Change Programme
Revision Number:	Client:
02	Eco Biodiversity Sdn. Bhd.

Summary:

SGS India Pvt. Ltd., an affiliate of SGS United Kingdom Ltd. has made a validation of the CDM project activity "Methane capture from POME for electricity generation in Batu Pahat", on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria. The project falls under small scale category and under sectoral scope 13 Waste handling and disposal and 1 Energy Industries (Renewable/ Non-renewable sources).

The scope of validation is the independent and objective review of the project design document, baseline study and monitoring plan and other relevant document of the project. The information in this document is reviewed against the criteria defined in the Marrakech Accords (Decision 17) and the Kyoto Protocol (Article 12) and subsequent guidance from the CDM Executive Board.

The overall validation process, from Contract Review to Validation Report & Opinion, was conducted using internal procedures (UK.PP.12 issue 3 dated 19/01/2007).

The first output of the validation process is a list of Corrective Actions Requests and New Information Requests (CAR and NIR), presented in Annex 3 of this document. Taking into account this output, the project proponent revised its project design document.

In summary, it is SGS's opinion that the proposed CDM project activity correctly applies the baseline and monitoring methodology as mentioned in approved methodology adopted for the proposed project activity and meets the relevant UNFCCC requirements for the CDM. The project activity has also received the host country approval from Malaysia and Annex 1 country approval from Japan; which indicates that the project activity meets the relevant host country criteria.

Subject:	**Indexing Terms**
CDM Validation	
Team Members:	
Sanjeev Kumar – Lead Assessor Vikrant Badve – Assessor Amargit Singh – Local Assessor Kaviraj Pradhan – Expert	
Technical Reviewer: Name: Irma Lubrecht Date: 5th March 2008, 4th April 2008, 9th Sep 2008	☒ No Distribution (without permission from the Client or responsible organisational unit)
Authorized Signatory: Siddharth Yadav	☐ Limited Distribution
Date of Final Decision: / Number of Pages: 9th September 2008 / 44	☐ Unrestricted Distribution

Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CO2	Carbon Dioxide
COP/MOP	Conference of parties serving as the meeting of parties to Kyoto Protocol
CPO	Crude Palm Oil
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EIA	Environment Impact Assessment
GHG	Green House Gas(es)
GWh	Giga Watt Hour
I	Interview
IPCC	Intergovernmental Panel on Climate Change
ISHC	International Stakeholder Consultation
kWh	Kilo Watt Hour
LoA	Letter of Approval
MNES	Ministry of Non Conventional Energy Sources
MoV	Means of Verification
MP	Monitoring Plan
MW	Mega Watt
MT	Metric Tonne
NIR	New Information Request
NOC	No Objection Certificate
PDD	Project Design Document
POME	Palm Oil Mill Effluent
PTM	Pusat Tenaga Malaysia (Malaysia Energy Centre)
RM	Malaysian Currency
UNFCCC	United Nations Framework Convention for Climate Change

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1. Introduction

1.1 Objective

Eco Biodiversity Sdn. Bhd. has commissioned SGS-UKL to perform the validation of the project: "Methane capture from POME for electricity generation in Batu Pahat" with regard to the relevant requirements for CDM project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Certified Emission Reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

1.2 Scope

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

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

1.3 GHG Project Description

Project Description:

The proposed CDM project activity is located in Batu Pahat, Malaysia. The project activity includes installation of four (4) biogas tank digesters with advanced system for methane recovery from the wastewater. The palm oil mill at present uses open lagoon system to treat wastewater generated from the Crude Palm Oil (CPO) mill operated by Bell Palm Industries Sdn. Bhd. (BPI).

The biogas produced from the wastewater will be captured and used to generate electricity using biogas fuelled engine. The electricity generated from the project activity will be supplied to the Malaysian national grid. The project activity will therefore reduce emissions of greenhouse gases (GHG) from two sources: avoidance of methane emissions from the current open lagoons treatment system, and displacement of grid electricity with less carbon-intensive electricity by supplying the electricity generated from the project activity to the National Grid.

The project was planned to be implemented in two phases. In first phase two biogas digesters with 2 MW (4 x 500kW) of electricity generation capacity will be installed and later in the second phase 2 biogas digesters with 1 MW (2 x 500kW) of electricity generation capacity will be added. It was forecasted that the project will complete the installation by 2011; while the first phase of the project will be operational by 1st May 2008.

Baseline Scenario:

Under the baseline scenario, there would have been on-site methane emissions from the wastewater from POME and there would have been more off-site emissions from burning of fossil fuel for power generation to meet the national grid demand.

With Project Scenario:

The project activity entails avoiding the on-site methane emissions by capturing the same through methane digesters. The captured methane will be used for power generation at the plant site. The power generated will be supplied to the national grid. Thus the project activity results in the reduction of GHG emissions through avoiding on-site methane emissions and supplying less carbon intensive electricity generated using renewable source, to National grid.

Leakage:

As per the methodology AMS III H version 05 and AMS I D version 11; applicable for the project activity, leakage is to be considered if the energy generating equipment is transferred from another activity or if the existing equipment is transferred to another activity. However this is not the case with the present project activity. The project activity involves installation of new equipments for methane capture and power generation; same was validated during the site visit and hence leakage due transfer of equipment is not being considered for present project activity.

1.4 The Names and Roles of the Validation Team Members

Name	***Role***
Sanjeev Kumar	Lead Assessor
Vikrant Badve	Assessor
Amargit Singh	Local Assessor
Kaviraj Pradhan	Expert

Statement of Competence of team members are attached at Annex IV.

2. Methodology

2.1 Review of CDM-PDD and Additional Documentation

The validation is performed primarily as a document review of the publicly available project documents. The assessment is performed by trained assessors using a validation protocol.

A site visit is usually required to verify assumptions in the baseline. Additional information can be required to complete the validation, which may be obtained from public sources or through telephone and face-to-face interviews with key stakeholders (including the project developers and Government and NGO representatives in the host country). These may be undertaken by the local SGS affiliate. The results of this local assessment are summarized in Annex 1 to this report.

2.2 Use of the Validation Protocol

The validation protocol used for the assessment is partly based on the templates of the IETA / World Bank Validation and Verification Manual and partly on the experience of SGS with the validation of CDM projects. It serves the following purposes:

- it organises, details and clarifies the requirements the project is expected to meet; and
- it documents both how a particular requirement has been validated and the result of the validation.

The validation protocol consists of several tables. The different columns in these tables are described below.

Checklist Question	***Means of Verification (MoV)***	***Comment***	***Draft and/or Final Conclusion***
The various requirements are linked to checklist questions the project should meet.	*Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.*	*The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.*	*This is either acceptable based on evidence provided (**Y**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **New Information Request (NIR)** is used when the validation team has identified a need for further clarification.*

The completed validation protocol for this project is attached as Annex 2 to this report

2.3 Findings

As an outcome of the validation process, the team can raise different types of findings

In general, where insufficient or inaccurate information is available and clarification or new information is required the Assessor shall raise a **New Information Request (NIR)** specifying what additional information is required.

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR).** A CAR is issued, where:

I. mistakes have been made with a direct influence on project results;

II. validation protocol requirements have not been met; or

III. there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be verified.

The validation process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a NIR may result in a CAR. Information or clarifications provided as a result of an NIR may also lead to a CAR.

Observations may be raised which are for the benefit of future projects and future verification or validation actors. These have no impact upon the completion of the validation or verification activity.

Corrective Action Requests and New Information Requests are raised in the draft validation protocol and detailed in a separate form (Annex 3). In this form, the Project Developer is given the opportunity to "close" outstanding CARs and respond to NIRs and Observations.

2.4 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment Team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

3. Determination Findings

3.1 Participation Requirements

The host Party for this project is Malaysia. Malaysia has ratified the Kyoto protocol on 4th September 2002. A Letter of Approval from Host country DNA was not submitted by the project proponent. CAR (1) was raised asking project proponent to submit the Letter of Approval from Host country DNA. In initial response project proponent has clarified that Eco-Biodiversity will not be a project participant for this project activity but they will act as project co-ordinator for this project. Project proponent has provided a letter of authorisation for Eco biodiversity in this regard, a copy of same was provided to validator for reference. The PDD was revised accordingly to version 2 which reflects Bell Eco Power Sdn. Bhd. as project participant from host country and Mitsui & Co. as annex 1 participant. In further response to CAR (1) project proponent has provided Letter of Approval (LoA) from Malaysian DNA (ref.NRE(S)62.120.010.001.002/012Jld 4(56) dated 26th February 2008). The LoA was issued to Bell Eco Power Sdn. Bhd. The LoA was checked for the project proponent's name and project activity name, the same was found inline with the PDD and hence CAR (1) was closed.

Initially in the PDD version 1 project proponent mentions that Netherlands will be the Annex 1 party for the project activity but the details regarding the party have not been provided in the PDD section A.3. Hence NIR (2) was raised and project proponent was asked to provide the details and LoA from the Annex 1 party. In initial response to NIR (2) project proponent has clarified that Mitsui & Co. from Japan will be the Annex 1 party for the project activity, same was mentioned in the revised PDD version 2. Japan has ratified the Kyoto Protocol on 4th June 2002. Project proponent has provided LoA from Japan (dated 31st March 2008) in Japanese as well as in English, which was checked for the name of Annex 1 party involved in the project activity and the project activity name. These details were found inline with the PDD version 2 dated 11th March 2008. Thus NIR (2) was closed.

3.2 Baseline Selection and Additionality

The project has applied baseline as mentioned in the small scale methodology AMS III H version 5 for Methane recovery in wastewater treatment and AMS I D version 11 for Grid connected renewable electricity generation; as per Appendix B of the simplified modalities and procedures for small-scale CDM project activities.

The project activity avoids on-site methane emissions from the open lagoon system used for treatment of wastewater generated from the palm oil mill. The methane will be captured using the biogas digesters. The captured methane will be used to generate electricity which will be supplied to the national grid and thus the same amount of electricity generation from fossil fuel is saved. The most likely baseline scenario for the project activity is methane emissions to the atmosphere from the present open lagoon system and meeting the power requirement of national grid through burning more fossil fuel at the power generating stations. This was mentioned under section B.4 of the PDD version 2. Project proponent has provided the design drawings for the present lagoon system which was used to verify the maximum depth of the lagoons. The depth for the present open lagoon system as per design details and actual physical verification at site is 3 meters which fulfils the applicability criteria under AMS III H version 5. The COD values for the effluent and influent waste water during the baseline scenario was checked with reference to the lab analysis reports and reports submitted to Ministry of Environment. It was validated from the document named" Study on Grid Connected Electricity Baselines in Malaysia" dated April 2006 and available on weblink - http://cdm.eib.org.my/upload/articles1016,article,1151393608,CDM%20Baseline%20Malaysia.pdf ; that Malaysian national grid is fossil fuel dominated grid and baseline emission factor was calculated conservatively for the same. Thus it was concluded that project activity is not a most likely baseline scenario; same was validated during the site visit and found acceptable. The current practice of using an open lagoon system for wastewater treatment was considered as baseline scenario for the project activity.

The project activity is not having any other credible and realistic alternative scenario apart from the project activity. The project activity refers guidelines as mentioned in EB 35 Annex 34 while discussing the project additionality. The project activity has adopted the Investment barrier to demonstrate the additionality of the present project activity. In addition to this project proponent has also mentioned prevailing practice at the

CPO mills in Malaysia for the treatment of wastewater generated from the CPO mills. In order to get all the related documents on the basis of which the project was demonstrated as additional to the baseline scenario, CAR (7) was raised.

The investment analysis was adopted to show the present project activity is additional to the baseline scenario. The investment analysis gives the project IRR and cash flow sheet for project activity with and without consideration of CDM revenue. The investment analysis was prepared by the company's finance manager. All the assumptions like, revenues from CER sell, operation and maintenance cost, depreciation, Electricity consumption by the project activity and other expense and evidence to data used like revenue from sell of electricity plant capacity, project cost, finance cost; for investment analysis was checked by the Assessor during site visit. Evidence for project cost, finance cost, revenue from sell of electricity, plant capacity was provided by the project proponent and same was accepted after cross-check with the original documents; while standard values are used for operation and maintenance cost and other costs, which was confirmed with company records during site visit.

The project activity has been financed by Bell Palm Industries a parent company of Bell Eco Power Sdn. Bhd. (project proponent) through stakeholders' loan. The investment analysis sheet was prepared by the Finance Manager of Bell Palm Industries. The important assumptions like interest rate, period of financing, loan term and moratorium period was considered from the Bell Palm Industries records. The letter from Bell Palm Industries which mentioned the assumptions used in financial analysis was provided by the project proponent and same was accepted after a discussion with the project proponent for the financing structure for the project activity and the past records of the company. Referring to this letter and the internal records of the company, DOE found that the assumptions mentioned in the letter were correct.

The benchmark considered for this project activity was 8% interest rate which was chargeable to loan amount. The interest rate which was considered by the project proponent was checked with the Bankers of the project company i.e. Alliance Bank. The bank provided credit facility to company at 8.25% (6.75% BPLR + 1.50% base lending rate) in August 2006. Letter (Ref. SBDC/BSJ/01/06/LO dated 3rd August 2006) regarding the same was submitted by the project proponent. Thus PP's consideration of 8.0% rate of interest on internal finance is accepted by DOE.

Period of investment analysis considered for the project activity was 21 years; which is project's lifetime period and also the contract period as per PPA for the project activity. The selection of project lifetime for IRR analysis is inline with the guidance on investment analysis version 02. The project's lifetime of 21years was validated against the technology description and feasibility report study while tenure for the contract period with the electricity board was validated from a draft version of the contract during the validation site visit and same was executed and finalized on 3rd June 2008.

The investment cost was referred from the letter (dated 13th December 2007) from project consultant Eco-bio diversity Sdn. Bhd. to the project proponent. This letter was provided to DOE during validation process and same was found accepted after discussion with project consultant.

The PPA for the project activity is under execution and same was not signed while this report was under preparation. But the rate of sale of electricity was confirmed with the project proponent as 0.21 RM per kWh and same was substantiated by letter from Tenaga Nasional Berhad (Ref. TNB (B) /HEKO/PSTK/9/1/36, Dated – 19th September 2007). The same rate was used in investment analysis and thus accepted.

Project proponent has revised the PDD which includes detailed information regarding the sensitivity analysis for the project activity. The sensitivity analysis was checked for the sensitivity range of the parameters considered for sensitivity analysis. The results of sensitivity analysis are as follows

Factor	**IRR for project activity**				
	-20%	**-10%**	**Base case**	**+10%**	**+20%**
Fluctuation in investment cost	5.65%	3.52%	1.65%	0.00%	-1.47%
Fluctuation in operating cash outflows	7.46%	4.61%	1.65%	-1.46%	-4.77%

The results of the sensitivity analysis indicate that even under most feasible conditions i.e. reduction of project investment cost and reduction in operating cash outflows by 20% the IRR for the project activity was not crossing the required benchmark of 8%. The range of sensitivity parameter was found accepted and inline with the UNFCCC requirement and thus accepted by DOE.

The investment analysis sheet mentions that the project cash flow without consideration of any other revenue than sale of electricity are very weak giving the project IRR as 1.65% which is very low when compared with the internal interest rate of 8.0% which was charged internally against internal finance and considered as benchmark for the investment. While the project cash flows with consideration of CDM revenue in addition to the revenue from sale of electricity are giving the project IRR as 15.47%; this is more than the benchmark considered at 8.0% by the project proponent. The internal benchmark for any kind of investment was set at 8.0% by the project proponent and same was found acceptable after reviewing the company records and undertaking from Bell Palm Industries Sdn. Bhd; a parent organisation of Bell Eco Power Sdn. Bhd. Hence it is concluded that the project activity without CDM revenue is additional to the baseline scenario and CDM revenue is helping to improve the project returns and this make the project activity economically attractive. Thus CAR (7) was closed.

Project proponent also mentioned in PDD that they will go for implementation of the project activity only after successful registration of the project activity as the IRR without CDM funds is very low compared to the benchmark considered for the investment. The project was not implemented till the date and is a future project activity; in view of this the start date for the project activity was not as per the CDM glossary of terms as financial closure was not done for the project activity and thus no purchase order was raised. Thus DOE considered the first initiative taken by PP i.e. PDD preparation date i.e. 13/06/2007 as start date of the project activity.

Project proponent has also provided prevailing practice for wastewater treatment carried out by the other CPO mills in host country. NIR (4) was raised as in PDD version 1 the references to the prevailing practice were not mentioned and thus making it difficult to verify the information. In response to NIR (4) project proponent mentioned in revised version of the PDD that there are 399 CPO mills in Malaysia and as in June 2007 no palm oil mill has installed a biogas recovery system on a commercial basis and all the mills are using conventional way of wastewater treatment. NIR (4) was closed after the information provided in revised PDD was checked from the following web-links http://www.mpob.gov.my/, http://www.psipw.org/abdulahmadabstracts.html and found acceptable. The same web-links were mentioned in the PDD version 2 on page 14.

Thus it is concluded that the project activity is an initiative taken by the project developers and without CDM revenue it is financial not an attractive option but CDM revenues make the project activity financially viable.

It was also checked that neither project proponent nor the industry have any obligation to upgrade the present wastewater treatment system; as the present open lagoon system fulfils the conditions set by host country Ministry of Environment. This was validated after reviewing the wastewater analysis results of CPO mill; carried out by the industry and a government approved third party. It is mandatory for the palm oil mills in host country to carry out the wastewater analysis by government approved agency and submit the results to the Ministry of Environment while renewing the operations consent.

The decision to go ahead with the project activity was an initiative taken by the industry and the project proponent towards sustainable development; though the project was not financially attractive without CDM revenues. Hence the present project activity of Methane capture from POME for electricity generation in Batu Pahat is an additional project activity to the baseline scenario.

3.3 Application of Baseline Methodology and Calculation of Emission Factors

The project has applied baseline methodology as mentioned in the small scale methodology AMS III H version 5 for Methane recovery in wastewater treatment and AMS I D version 11 for Grid connected renewable electricity generation; as per Appendix B of the simplified modalities and procedures for small-scale CDM project activities.

The project proponent's claim of project activity being a small scale project activity was checked by the assessor during the site visit. CAR (5) was raised as section B.2 in PDD version 1 was referring to an estimated amount of emission reductions from AMS III H only while describing that the project activity follows the criteria of emission reduction less than 60ktCO_2. In response to CAR (5) project proponent corrected the

mistake and mentioned that the total emission reductions from the project activity while describing the criteria. It was checked from the emission reductions calculations sheet that the total emission reductions from the project activity are below small scale limit of 60kt CO_2. CAR (5) was closed. A copy of the technical specifications of the power generating station proposed at the factory site was provided by the project developer which was checked for the total power generation capacity at factory site which was found to be 2 MW during first phase and 3 MW after completion of the second phase. Project activity is methane capture from the CPO mill wastewater and using same for power generation applicability. The Assessor through the physical check during site visit and document review; confirms that the proposed project is not a debundled component of a large scale project. Thus project activity satisfies small scale project activity limit which is acceptable.

CAR (6) was raised as PDD version 1 does not provide clear information on the baseline emission factors used to calculate the emission reductions from the project activity. In response to CAR (6) project proponent mentions in revised version of PDD the references for the emission factors used in emission reduction calculation spreadsheet. This was found acceptable when checked with the revised version of PDD and excel spreadsheet for emission reduction calculation. Hence CAR (6) was closed.

The project activity has used baseline emission factor for grid as given in the database created by host country DNA. The database can be referred through http://cdm.eib.org.my/upload/articles1016,article,1151393608,CDM%20Baseline%20Malaysia.pdf. The database mentions 0.631 kg CO_2/kWh as emission coefficient for the region as per ACM0002. The baseline emission factor was calculated using the procedure and guidelines given in AMS I D para 9 (a) and thus acceptable. While the emission factor for methane emissions (i) on account of inefficiency of the wastewater treatment and presence of degradable organic carbon in treated wastewater; (ii) from the decay of the final sludge generated by the treatment systems (iii) on account of inefficiencies in capture and flare system and (iv) resulting from dissolved methane in the treated wastewater was referred from the AMS III H version 5. Thus the emission factors used for calculating the estimated amount of emission reduction from the project activity were validated and found acceptable. Project proponent has also submitted emission reduction spreadsheet giving the detailed calculations of the emission reductions claimed by the project activity. The emission reduction calculation spreadsheet was checked for the assumptions and data used for the calculations. The same was verified during the site visit and found acceptable.

3.4 Application of Monitoring Methodology and Monitoring Plan

The present CDM project activity uses monitoring methodology as mentioned in the small scale methodology AMS III H version 5 for Methane recovery in wastewater treatment and AMS I D version 11 for Grid connected renewable electricity generation; as per Appendix B of the simplified modalities and procedures for small-scale CDM project activities. The PDD clearly mentions that leakage is not considered for present project activity; as methodology AMS III H version 5 and AMS I D version 11 mentions, leakage due to project activity will be considered when there is an equipment transfer from one place to another. Since for this project activity; project proponent has shown technical specifications sheet for the equipments to be purchased for the project activity. Thus leakage was not considered for the project activity accepting that there is no equipment transfer from one place to other place. Also same will be checked during the verification of the project activity. All the equipments used in the project activity are purchased new. This was acceptable and validated after having a discussion with the project proponent.

PDD version 1 section B.6.2 mentions the parameters used for baseline preparation. CAR (8) was raised as the monitoring plan given in section B.6.2 does not provide clear information regarding the efficiency of the methane flare system. In response to CAR (8) project proponent has revised the PDD section B.6.2 and mentioned that as per AMS III H version 5 default value of flare system efficiency i.e. 90% will be considered for the calculations. This was found acceptable and inline with AMS III H version 5. Thus CAR (8) was closed. The data monitored for the baseline preparation was checked during the site visit and same was found acceptable.

CAR (9) was raised as section B.7.2.does not mentions the responsibility for the data monitoring, reporting and archiving. In response to CAR (9) project proponent clarified in data monitoring, reporting and archiving responsibility under section B.7.2.which was found accepted. Thus CAR (9) was closed. The monitoring plan provided under section B.7.2 PDD version 2 was acceptable with reference to the monitoring methodology and project activity requirement.

3.5 Project Design

The PDD version 1 of the present project activity was prepared in accordance with the guidelines version 04 for completing CDM-SSC-PDD and template version 03 for CDM-SSC-PDD also the methodology version of AMS III H version 5 and AMS I D version 11 used for project activity was correctly applied to the project activity.

NIR (3) was raised as the PDD version 1 does not provide clear information on the location details of the project activity under section A.4.1.4. The location details are required to identify and locate the project activity location. In response to NIR (3) project proponent in version 2 of the PDD clearly mentions the longitude and latitude of the project activity location. This was verified and found acceptable. Thus NIR (3) was closed.

It was found that section C.1.1 PDD version 01 indicated 01/04/2008 as the start date for the project activity, which will be the commercial operation start date for the project activity. The same was corrected to the date when first version of the PDD was prepared. This was found accepted. The crediting period start date for the project activity will be 01/04/2008 or a date of registration of project activity which ever is later. This was found acceptable.

The project boundary given in version 01 of the PDD was not clear and project proponent was asked to elaborate the same, CAR (10) was raised for the same. In response the CAR (10) project proponent has elaborated the project boundary which now distinguishes clearly on the phase 1 and 2 installations. PDD version 2 was checked for the revised project boundary which is acceptable.

Operational lifetime of the project activity was mentioned as 21 years which was found acceptable after reviewing the project technology details mentioned in the purchase order of the project activity. During the discussion with the project proponent it was clarified by the project proponent that the project technology will not be substituted by other or more efficient technology as the project activity itself is one of the most efficient technologies available for capturing methane. This was acceptable.

Project proponent in the PDD mentioned that project activity has not received any public funding from parties listed in Annex 1. This was further substantiated by an undertaking from the project proponent. This was acceptable.

3.6 Environmental Impacts

The project proponent in the PDD had mentioned that EIA was not required to be carried out for the project activity as the present project activity does not fall under the Prescribed Activities listed under the Environmental Quality order 1987. This claim was found acceptable after review project activities listed under Environmental Quality order 1987 and the letter from Environment ministry on 'No EIA requirement'.

3.7 Local Stakeholder Comments

The project activity is methane capture from POME for electricity generation in palm oil mill. The project proponent has identified local population, factory employees, representatives from Malaysian palm oil board and representatives from Malaysian Ministry of Environment, project consultant and technology suppliers as local stakeholders for the project activity.

The PDD mentioned that a meeting/ workshop was called for local stakeholder consultation on 31st May 2007 and local stakeholders were informed by letter of invitation for the local stakeholder meeting. The comments from local stakeholders were answered during the workshop. There was no negative comment identified from the local stakeholder regarding the project activity. This information was cross-checked during the review of local stakeholder consultation process at the time of site visit and the comments were found acceptable. Project proponent has provided a video recording of the local stakeholder consultation meeting.

4. Comments by Parties, Stakeholders and NGOs

In accordance with sub-paragraphs 40 (b) and (c) of the CDM modalities and procedures, the project design document of a proposed CDM project activity shall be made publicly available and the DOE shall invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This chapter describes this process for this project.

4.1 Description of How and When the PDD was Made Publicly Available

The PDD and the monitoring plan for this project were made available on the SGS website http://www.sgsqualitynetwork.com/tradeassurance/ccp/projects/project.php?id=315 and were open for comments from 4th August 2007 until 2nd September 2007. Comments were invited through the UNFCCC CDM homepage.

4.2 Compilation of all Comments Received

The project was up loaded for International stakeholder consultation (ISHC) for a period of 30 days and received no comment. Also no adverse comment identified during review of local stakeholder consultation process during the site visit.

Comment number	*Date received*	*Submitter*	*Comment*
1			

4.3 Explanation of How Comments Have Been Taken into Account

No adverse comment was received for the project activity.

5. Validation Opinion

SGS has performed a validation of the project: "Methane capture from POME for electricity generation in Batu Pahat". The Validation was performed on the basis of the UNFCCC criteria and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

Using a risk based approach, the review of the project design documentation and the subsequent follow-up interviews have provided SGS with sufficient evidence to determine the fulfilment of the stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM.
SGS has received confirmation by the host Party that the project activity assists it in achieving sustainable development.

By installing a wastewater treatment plant with methane capture system and a grid-connected 3 MW power generating station using the captured methane the project will lead to avoidance of methane emissions to the atmosphere and displacement carbon-intensive electricity by the electricity from a renewable source and thus the project results in reductions of greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change. A review of the barrier analysis involving investment barrier and barriers due to prevailing practice associated with project activity demonstrates that the proposed project activity was not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. The project is in construction stage and will start operations on 1st May 2008 as per the discussions with the project developer. The project will likely achieve the average estimated amount of emission reductions of 47,893 tCO_2 per year.

The validation is based on the information made available to SGS and the engagement conditions detailed in the report. The validation has been performed using a risk based approach as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence SGS can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

6. List of Persons Interviewed

Date	*Name*	*Position*	*Short description of subject discussed*
19/09/2007	Mr. Ooi Kah Soon	Project Technology Supplier	Project activity technical specifications and offer for the project activity
19/09/2007	Mr. Tan Bee Wah	Project Technology Supplier	Project activity technical specifications and offer for the project activity
19/09/2007	Mr. Williams Kho	CDM – Consultant	CDM-SSC-PDD preparation, Baseline and baseline emission factor for the project activity, project additionality
19/09/2007	Mr. Rattanachai	CDM – Consultant	CDM-SSC-PDD preparation, Baseline and baseline emission factor for the project activity, project additionality
20/09/2007	Mr. Jeffrey Khoo Kah Hock	Company Secretary	Financing for the project activity and no ODA confirmation for the project activity
20/09/2007	Mr. Lee Che Chaun	Group Engineer	Baseline scenario and prevailing practice for the project activity in host country

7. Document References

Category 1 Documents (documents provided by the Client that relate directly to the GHG components of the project, (i.e. the CDM Project Design Document, confirmation by the host Party on contribution to sustainable development and written approval of voluntary participation from the designated national authority):

/1/ Letter of Approval from Host Country dated 26th February 2008

/2/ Letter of Approval from Annex 1 participant dated 31st March 2008

/3/ Modalities of communication dated 11th March 2008

/4/ PDD version 1 dated 13th June 2007

/5/ PDD version 2 dated 11th March 2008

/6/ Excel spreadsheet for emission reduction calculations

/7/ Excel spreadsheet for Financial Calculations

/8/ PDD version 3 dated 05th September 2008

Category 2 Documents (background documents used to check project assumptions and confirm the validity of information given in the Category 1 documents and in validation interviews):

/1/ Baseline Emission factor for electricity supply to grid as per AMS I-D. Refer http://cdm.eib.org.my/upload/articles1016,article,1151393608,CDM%20Baseline%20Malaysia.pdf

/2/ Translated version of Letter dated 30th July 2007; from Ministry of Environment reg. Exemption from EIA for present project activity

/3/ Sample copies of Log book records for the baseline of the project activity

/4/ Sample copies of Lab Analysis reports for wastewater analysis

/5/ Purchase Order copy for the project activity

/6/ Technical specification for the project activity

/7/ Letter to local stakeholders for local stakeholder consultation meeting

/8/ Video of local stakeholder consultation meeting

/9/ Letter of Financing for the project activity (Dated – 21st Jan 2008)

/10/ Letter from Tenaga Nasional Berhad – Evidence against Electricity price offered to project activity (Ref. TNB (B) /HEKO/PSTK/9/1/36, Dated – 19th September 2007)

/11/ Environmental reports submitted prior project activity to Ministry of Environment by the project proponent

/12/ Evidence against the assumption used in investment analysis (letter dated 21st Jan. 2008)

/13/ Evidence against the project cost (letter from project consultant dated 13th December 2007)

A.1 Annex 1: Local Assessment

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. To get copy Host Country Approval (HCA) letter and Annex 1 participation letter from Project Proponent.	PDD	DR	Project proponent has provided LoA from host country as well as from Annex 1 participant which was found accepted after checking for the name of the project participants from host country and annex 1 country and name of the project activity.	Y	Y
2. No ODA has been used for this project and to be confirmed during site visit.	PDD Annex 2	DR	Project proponent has submitted letter from Company Director regarding funds availability under ODA for the project. The document submitted was acceptable.	Y	Y
3. Evidence for local stakeholder consultaion workshop.	PDD	DR	A copy of letter written to concern local stakeholders for the project activity was provided and found acceptable. These letters were checked during the review of local stakeholder consultation meeting at site visit.	Y	Y
4. Local stakeholders' comments are required to be verified for any adverse comment. MoM of local stakeholder consultation meeting Due account of stakeholder comments received required to be verified.	PDD	DR	The revised PDD version 2 mentions the comments from local stakeholders during the consultation meeting. There were no adverse comments identified in local stakeholder consultation process. This was verified with the video tape and also during local stakeholder consultation review during the site visit.	Y	Y
5. Project design engineering documents from the technology supplier are required to be checked.	PDD	DR	Purchase specifications for project activity were obtained and verified for the project capacity and other technoical details mentioned in the PDD. The documents were found acceptable.	Y	Y
6. Requirement of EIA for the project activity is to be checked for the project	PDD	DR	EIA requirement for the present project activity was	Y	Y

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
activity.			checked with Ministry of Environment notification provided by the project proponent and same was checked against the guidelines by the Ministry.		
7. The monitoring plan required to be checked.	PDD	DR	The project activity was yet to start the operation and hence the monitoring plan for the project activity was not available during the validation site visit.	Y	Y
8. Calibration certificates for the equipments used for data recording are required to be checked.	PDD	DR	The project activity was yet to start the operation and hence the calibration certificates were not available.	Y	Y
9. Quality Assurance (QA) and Quality Control (QC) procedures set by project proponent for data monitoring.	PDD	DR	QA and QC procedure for data monitoring was verified during site visit. Sample copies of present data monitoring and analysis system were checked and found acceptable.	Y	Y
10. Power purchase agreement between Government and Project proponent.	PDD	DR	The power purchase agreement for the present project activity is under negotiation. The per unit rate of electricity sale was referred from purchase rates offered by the Tenaga Nasional Berhad power company with whom project proponent is negotiating the power purchase agreement.	Y	Y
11. Evidence for grid emission factor and diesel emission factor.	PDD	DR	The baseline emission factor used for grid in present project activity was referred from web-link provided below; http://cdm.eib.org.my/upload/articles1016,article,1151393608,CDM%20Baseline%20Malaysia.pdf and baseline emission factor for methane recovery was used as per the AMS III H version 5. This was acceptable.	Y	Y
12. Financial analysis for the project activity with assumptions used in calculation.	PDD	DR	The financial analysis spreadsheet was obtained and verified for the assumptions used in the	Y	Y

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			calculation of financial indicator. The IRR calculations were found acceptable.		
13. Evidence for the prevailing practice.	PDD	DR	The evidence for prevailing practice mentioned in the PDD was checked with the report available with Economics and Industry Development Division, Malaysian Palm Oil Board (MPOB), August 2007 http://www.mpob.gov.my	Y	Y
14. Calculation spreadsheet for baseline and project emission reductions during project crediting period.	PDD	Calculation check	Emission reduction calculations from the project activity due to supply of power from renewable source to national grid and recovery of methane from wastewater was checked and found acceptable.	Y	Y
15. Training module / material used during training programme for the employees.	PDD	DR	Project proponent mentioned that the training for the project activity will be provided by the technology supplier and same was mentioned in the purchase order. The purchase order for the project activity was checked for same and found acceptable.	Y	Y
16. Modalities of communication		DR	Project proponent has provided the letter of Modalities of Communication. The letter is acceptable.	Y	Y

A.2 Annex 2: Validation Protocol

Table 1 Participation Requirements for Clean Development Mechanism (CDM) Project Activities (Ref PDD, LETTERS OF APPROVAL AND UNFCCC WEBSITE) ALL CDM PROJECT ACTIVITIES

REQUIREMENT	Ref	MoV	Comment	Draft finding	Final Concl
1.1 The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3 and be entered into voluntarily.	PDD	DR	Project will assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3. Section A.3 identifies Japan as Annex 1 party in the project activity.	Y	Y
1.2 The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof, and be entered into voluntarily.	PDD	DR	The project activity is likely to contribute to sustainable development. Letter of approval from Host Country (Malaysia) Designated National Authority (DNA) and Annex 1 country (Japan) DNA to be submitted by the project proponent. Also provide LoA from Annex 1 country and mention the complete details of the Annex 1 project participant.	Pending CAR1 NIR2	Y Y CAR1 closed Y NIR2 closed
1.3 All Parties (listed in Section A3 of the PDD) have ratified the Kyoto protocol and are allowed to participate in CDM projects	PDD/UNFCCC Web-site	DR/ UNFCCC Web-site	Project is bilateral and Host country Malaysia has ratified the protocol on 4th September 2002 and is allowed to participate. The web link is http://maindb.unfccc.int/public/country.pl?country=MY Annex 1 country Japan has ratified the protocol on 4th June 2002 and allowed to participate. The web link is http://maindb.unfccc.int/public/country.pl?country=JP	Y	Y
1.4 The project results in reductions of GHG emissions or increases in sequestration when	PDD	DR	The project activity will capture methane generated from the wastewater treatment process and generate electricity.	Y	Y

REQUIREMENT	Ref	MoV	Comment	Draft finding	Final Concl
compared to the baseline; and the project can be reasonably shown to be different from the baseline scenario.			The electricity thus generated will be used to substitute diesel for start up and back up genset system and will be sold to the regional grid system to replace same amount of electricity from regional grid; which is dominated by fossil fuel based thermal power plants. The project activity is claiming carbon credits on account of methane recovery in wastewater treatment and electricity generation.		
1.5 Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days (45 days for AR projects), and the project design document and comments have been made publicly available	PDD	DR/UNFCCC Web-site	Yes, the project is listed on UNFCCC website from 4th August 2007 to 2nd September 2007. http://cdm.unfccc.int/Projects/Validation/DB/N6BSX076Q7MBI12IPF2NIVE8N7DUBI/view.html The project was also listed on SGS climate change website from 4th August 2007 to 2nd September 2007. http://www.sgsqualitynetwork.com/tradeassurance/ccp/projects/project.php?id=315 Number of comments received - 0	Y	Y
1.6 The project has correctly completed a Project Design Document, using the current version and exactly following the guidance	PDD	DR	Project has used current version (version 3) of PDD template applicable and followed the guidelines version 4 for preparing CDM-SSC-PDD, except pending closure of some CARs/ NIRs.	Pending	Y
1.7 The project shall not make use of Official Development Assistance (ODA), nor result in the diversion of such ODA.	PDD	DR	No ODA has identified in PDD version 1 Annex 2 and in section A.4.4. Evidence needs to be provided.	Site visit	No ODA evidence was provide and found acceptable
1.8 For AR projects, the host country shall have issued a communication providing a single definition of minimum tree cover, minimum land area value	PDD	DR	Not relevant as the project is not an AR project.	Not Applicable	Not Applicable

REQUIREMENT	Ref	MoV	Comment	Draft finding	Final Concl
and minimum tree height. Has such a letter been issued and are the definitions consistently applied throughout the PDD?					
1.9 Does the project meet the additional requirements detailed in: Table 9 for SSC projects Table 10 for AR projects Table 11 for AR SSC projects	PDD	DR	This is an SSC project which comes under category AMS III-H and AMS I-D and hence table 9 is applicable.	Y	Y
1.10 Is the current version of the PDD complete and does it clearly reflect all the information presented during the validation assessment?	PDD	DR	The version of PDD used by project proponent present all the information, except pending closure of some CARs/ NIRs.	Pending	Y
1.11 Does the PDD use accurate and reliable information that can be verified in an objective manner?	PDD	DR	The PDD uses reliable information and that can be verified in an objective manner.	Pending	Y

Table 2 Baseline methodology/ies (Ref: PDD Section B and Annex 3 and AM) Normal CDM projects only

Table 3 Additionality (Ref: PDD Section B and AM) Normal CDM projects only

Table 4 Monitoring methodology (PDD Section B and AM) Normal CDM Projects only

Table 5 Monitoring plan (PDD Annex 4) Normal CDM Project activities only

Table 6 Environmental Impacts (Ref PDD Section D and relevant local legislation) Normal CDM Project Activities only

Table 7 Comments by local stakeholders (Ref PDD Section E) All CDM Project Activities

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
7.1 Have relevant stakeholders been consulted?	PDD	DR	Yes, as per PDD version 1 section E.1 project proponent has consulted the relevant local stakeholders for the project activity.	Y	Y
7.2 Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	As per PDD version 1 section E.2 project proponent has organized a workshop on 31st May 2007 at the project activity	Site visit	Y

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			premises to conduct the local stakeholder consultation for the project activity. Evidence needs to be checked for local stakeholder consultation workshop.		Project proponent has provided evidence against the workshop conducted for local stakeholder consultation. This was accepted after a discussion with the representatives of participants of workshop
7.3 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?	PDD	DR	The project participant has consulted the local stakeholders by conducting a workshop as a requirement for CDM project. MoM of the meeting needs to be provided.	Site visit	Y Project proponent has provided evidence against the workshop conducted for local stakeholder consultation
7.4 Is a summary of the stakeholder comments received provided?	PDD	DR	The summary of the stakeholder comments is provided in PDD version 1.	Site visit	Y

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			Evidence needs to be checked.		Section E.2 was revised accordingly and evidence against local stakeholder consultation was provided by the project proponent
7.5 Has due account been taken of any stakeholder comments received?	PDD	DR	No adverse comment identified in the PDD version 1. Evidence to be checked during review of local stakeholder consultation at the time of validation site visit.	Site visit	Y No adverse comment was identified during the review of local stakeholder consultation process during site visit

Table 8 Other requirements All CDM project activities

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.1 Project Design Document					
8.1.1 Editorial issues: does the project correctly apply the PDD template and has the document been completed without	PDD	DR	The PDD template version 03 has been applied correctly for PDD of this project activity.	Y	Y

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
modifying/adding headings or logo, format or font.					
8.1.2 Substantive issues: does the PDD address all the specific requirements under each header. If requirements are not applicable / not relevant, this must be stated and justified.	PDD	DR	The PDD version 1 address all the specific requirements under each header except following; Exact location details of the project activity were not provided in section A.4.1.4. Pls. indicate longitude and latitude of project location or nearest place.	NIR3	Y Exact location details provided, NIR3 closed
8.2 Technology to be employed					
8.2.1 Does the project design engineering reflect current good practices?	PDD	DR	The project design engineering reflects the current good practices. Technical specifications of the project activity need to be checked.	Site visit	Y Technical specifications for the project activity were provided during site visit and same were found acceptable when checked with the PDD version 2
8.2.2 Does the project use state of the art technology or would the technology result in a	PDD	DR	The project activity comprises an improved version of completely stirred tank reactor (CSTR) based on the	Site visit	Y

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
significantly better performance than any commonly used technologies in the host country?			German/British design. The system ensures a reduction of atleast 90%of the COD and 80% of the BOD levels. As per PDD version 1 section B.5 out of 400 CPO (Crude Palm Oil) Mills in the host country not a single mill has installed biogas recovery system on a commercial basis. Pls. provide evidence for the prevailing practice in CPO Mills.	 NIR4	Technical specifications for the project activity were provided during site visit and same were found acceptable when checked with the PDD version 2 Y NIR4 closed
8.2.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR	As per PDD version 1 project proponent will keep operating the project activity as this was the efficient way to dispose Palm Oil Mill waste. Evidence is required for the same.	Site visit	Discussion with the project proponent and Technical

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
					specificatio ns of the project activity confirms that the project activity is the efficient way to dispose Palm Oil Mill waste and thus Project proponent will not replace the present project activity
8.2.4 Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	PDD	DR	The PDD version 1 section B.7.2 mentions that project activity supplier will conduct the training regarding the project activity maintenance and operation. Evidence is required to provide.	Site visit	Y Project Proponent has provided contract signed with the technology supplier which

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
					mentions technology supplier will provide training to the plant operators
8.3 Duration of the Project/ Crediting Period					
8.3.1 Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD	DR	Project activity starting date is defined in the PDD version 1 section C.1.1 as 01/01/2008. Evidence for the same is required.	Site visit	Y Evidence for project start date was provided by the project proponent and same was corrected in the revised PDD.
8.3.2 Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?	PDD	DR	Project proponent has selected fixed crediting period of 10 years for the project activity. It is reasonable and accepted.	Y	Y
8.3.3 Does the project's operational lifetime exceed the crediting period?	PDD	DR	As per PDD version 1 section C.1.2 the project activity's operational life time is expected to be 21 years which exceeds the crediting period of 10 years. This will be further checked during site visit.	Site visit	Y

Table 9 Additional requirements for SSC project activities only

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
9.1 Does the project qualify as a small scale CDM project activity as defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM?	PDD	DR	The project activity is methane recovery from Palm Oil Mill effluent and electricity generation using the captured methane. The PDD version 1 mentions that project activity is planning to installed 3MW of electricity generation and estimate emission reduction of less than 60ktCO_2e/year. Thus It qualify as a small scale CDM project activity as defined in paragraph 6 (c) of decision 17/CP.7. This will be further checked during the site visit. Emission reductions mentioned on page 10 under applicability criteria are not relevant. Pls. correct the same.	Site visit CAR5	Y Y CAR5 closed
9.2 The project conforms to one of the categories listed in Appendix B to Annex II to Decision 21/CP8.	PDD	DR	Yes, project activity uses AMS III-H version 5 and AMS I-D version 11.	Y	Y
9.3 The small scale project activity is not a debundled component of a larger project activity?	PDD	DR	Small scale project activity is not a debundled component of a larger project.	Y	Y
9.4 PDD has been prepared in accordance with appendix A of Annex II to Decision 21/CP8.	PDD	DR	The CDM - SSC - PDD (version 3) template is followed.	Y	Y
9.5 The project uses a simplified baseline and monitoring methodology specified in Appendix B. If not, they may propose changes to the meths or a new SSC project category.	PDD	DR	Yes, project activity uses simplifies baseline and monitoring methodology AMS III-H version 5 and AMS I-D version 11.	Y	Y
9.6 Are the emission reductions determined in accordance with the methodology described?	PDD	DR	Provide calculation spreadsheet for grid emission factor calculation. Provide yearly emission reductions calculation spreadsheet for baseline and project emissions.	CAR6	Y CAR6 closed

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			Evidence to be provided for claim of reduction in carbon emissions from project activity.		
9.7 Is there any bundling of SSC activities into one PDD? If so, does the monitoring plan consider sampling of activities? Refer to para 19 of Annex II. Also, note bundling provisions in SSC Briefing Note and SSC meths I C / I D and III D and Para 22e of Appendix B.	PDD	DR	There is no bundling of SSC activities into one PDD version 1.	Site visit	Y No bundling of SSC activities into one PDD was observed during site visit
9.8 Is EIA required by host party? If not, none is required irrespective of SHC. If yes, has one been performed consistent with local requirements?	PDD	DR	PDD version 1 section D.1 mentions that project activity does not fall under the Prescribed Activities listed under the Environmental Quality order 1987 hence no EIA was conducted for the project activity. Evidence regarding the same is required to check.	Site visit	Y Guidance document for EIA requirement was provided by project proponent. The document mentions that the present project activity does not fall under the

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
					activities listed for EIA requirement.
9.9.The project results in emission reductions that are additional in accordance with the following requirements: (Para 26) The project is additional if emissions are reduced below those in the absence of the project.	PDD	DR	The project will generate electricity from methane captured from the wastewater treatment process. The electricity thus generated will be used to substitute diesel for start up and back up genset system and will be sold to the regional grid system to replace same amount of electricity from regional grid; which is dominated by fossil fuel based power plants so emissions will reduce below those would be in the absence of the project activity.	Y	Y
(Para 27) Simplified baseline can be used; if not, baseline proposed shall cover all gases, sectors and sources listed in Annex A to the KP			The simplified baseline methodology as per AMS-III H and AMS-ID has been used for the project activity.	Y	Y
(Para 28) One or more barriers as detailed in attachment A to Appendix B to Annex II will be used to demonstrate that the project would not proceed without the CDM			The investment analysis and prevailing practice mentioned in the PDD version 1 section B.5 are not clear. Pls. provide investment analysis sheet including all the assumptions used for calculating project IRR with and with out CDM incentives. Also provide evidence against the prevailing practice in CPO mills in host country.	CAR7	Y CAR7 closed

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
				Pending NIR4	Y NIR4 closed
9.10 Leakage is calculated according to the provisions of the SSC methodologies in Appendix B.	PDD	DR	Evidence for leakage emissions need to check.	Site visit	Y Leakage was not considered for the project activity and same is acceptable.
9.11 The project boundary shall be constructed in accordance with the requirements of the SSC meths in Appendix B	PDD	DR	The project boundary mentioned in section B.3 of the PDD version 1 is not clear. Please revise the project boundary.	CAR10	Y CAR10 closed
9.12 The Monitoring plan shall be consistent with the requirements of the SSC methodology in Appendix B and shall provide for the collection and archiving of data needed to determine project emissions, baseline emissions and leakage.	PDD	DR	Monitoring plan does not mention monitoring of the efficiency of methane flare system.	CAR8	Y CAR8 closed
9.13 The monitoring plan shall present good monitoring practice appropriate to the circumstances of the project activity.	PDD	DR	Monitoring plan provided in PDD version 1 section B.7 presents good monitoring practice. Provide a copy of monitoring procedures laid by the project proponent for the project activity.	Y CAR9	Y Y CAR9 closed
9.14 If project activities are bundled, separate monitoring plan shall be prepared for each of	PDD	DR	The SSC project is not a bundled project activity.	Site visit	Y

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
the activities or an overall plan reflecting good monitoring practice will be prepared, consistent with the above requirements					Present project activity is not a bundled project activity.

Table 10 Additional requirements for AR projects – Not applicable

Table 11 Additional requirements for SSC AR projects – Not applicable

Table 12 Additional information to be verified by local assessors / Site visit

A.3 Annex 3: Overview of Findings

Description of table:

Type	Findings are either New Information Requests (NIR) or Corrective Action Requests (CAR). CARs are items that must be addressed before a project can receive a recommendation for registration. NIRs may lead to the raising of CARs. Observations are included at the end and may or may not be addressed. They are primarily to act as signposts for the verifying DOE.
Issue	Details the content of the finding
Ref	refers to the item number in the Validation Protocol
Response	Please insert response to finding, starting with the date of entry.

Rows for comments and further response will be appended to the table until the Findings has been addressed to the satisfaction of the Lead Assessor.

Date: 5th September 2007 Raised by: Vikrant Badve

No.	Type	Issue	Ref
1	CAR	Letter of approval from Host Country (Malaysia) Designated National Authority (DNA) and Annex 1 country (Netherlands) DNA to be submitted by the project proponent.	1.2
Date: 28th November 2007 [Response from project developer] Upon receiving the DVR, the finalised PDD will be submitted to the government of the host country (Malaysia) to obtain the Letter of Approval. As for Annex 1 country, now Japan, will request the Loa upon finalising the ERPA. 28th February 2008 PDD is revised to ver2 reflect the following changes 1. Eco biodiversity will not be a project participant and their details were removed from concern sections of PDD. They will continue to work as project co-ordinator. 2. Bell Eco Power Sdn. Bhd. will be the project participant from host country and Mitsui & Co. will be Annex 1 particpant.			
Date: [1st April 2008] [Comments from Assessor] Project proponent has provided LoA from Host country dated 26th February 2008 for the project activity and same was checked for the project activity name and project proponent's details. These are found inline with the PDD version 02. CAR can be closed.			
[Acceptance and close out] OK, Vikrant Badve (1st April 2008)			

Date: 5th September 2007 Raised by: Vikrant Badve

No.	Type	Issue	Ref
2	NIR	Pls. mention the complete details of the Annex 1 project participant.	1.2
Date: 28th November 2007 [Response from project developer] The details of Annex 1 project participant has been provided in the revised PDD. The Annex 1 country is Japan and the project participant is Mitsui & Co. Ltd. They will be the carbon buyer of the project.			
Date: [28th November 2007] [Comments from Assessor] Project proponent has provided LoA from Annex 1 country which was accepted as it the information mentioned therein is inline with the PDD version 2 dated 11th March 2008. NIR can be closed out.			
[Acceptance and close out] OK, Vikrant Badve, (1st April 2008)			

Date: 5th September 2007 Raised by: Vikrant Badve

No.	Type	Issue	Ref
3	NIR	Exact location details of the project activity were not provided in section A.4.1.4.	8.1.2

		Pls. indicate longitude and latitude of project location or nearest place.	
Date: 23rd October 2007 [Response from project developer] The PDD was revised (A.4.1.4) to include the location details of the project activity and also the longitude and latitude of the location was provided.			
Date: [25th October 2007] [Comments from Assessor] The revised PDD version 02 mentions the longitude and latitude of the project activity site with the other location details like distance from nearest town. NIR can be closed out.			
[Acceptance and close out] OK, Vikrant Badve (11th March 2008)			

Date: 5th September 2007 Raised by: Vikrant Badve

No.	Type	Issue	Ref
4	NIR	Pls. provide evidence for the prevailing practice in CPO Mills.	8.2.2
Date: 23rd October 2007 [Response from project developer] Evidence of the prevailing practice in CPO Mills had been provided during the site visit and discussion on 21st September 2007.			
Date: [25th October 2007] [Comments from Assessor] The evidence provided for the prevailing practise in Crude Palm Oil (CPO) mills has been checked during the site visit. Thus the information provided under section B.5 sub-heading prevailing practise is found correct and acceptable. NIR can be closed.			
[Acceptance and close out] OK, Vikrant Badve (11th March 2008)			

Date: 5th September 2007 Raised by: Vikrant Badve

No.	Type	Issue	Ref
5	CAR	Emission reductions mentioned on page 10 under applicability criteria are not relevant. Pls. correct the same.	9.1
Date: 23rd October 2007 [Response from project developer] The PDD was modified (page 10) and corrected accordingly.			
Date: [25th October 2007] [Comments from Assessor] The PDD now mentions the total of emission reductions from methane recovery as well as from supplying electricity to the grid. Thus the applicability criteria of emission reductions to be less than 60 $ktCO_2$ have been passed by the project activity. CAR can be closed.			
[Acceptance and close out] OK, Vikrant Badve (11th March 2008)			

Date: 5th September 2007 Raised by: Vikrant Badve

No.	Type	Issue	Ref
6	CAR	Provide calculation spreadsheet for grid emission factor calculation. Provide yearly emission reductions calculation spreadsheet for baseline and project emissions. Evidence to be provided for claim of reduction in carbon emissions from project activity.	9.6
Date: 23rd October 2007 [Response from project developer] The calculation for grid emission factor was provided in the PDD revised (B.4 page 12) to include as foot note No 2. The calculation spreadsheet of yearly emission reduction for baseline and project emissions was also separately provided, inclusive of the claim of reduction in carbon emission.			
Date: [25th October 2007] [Comments from Assessor] Project proponent has used ex-ante estimation of grid emission factor value as 0.631 $kgCO_2/kWh$; which is			

specified for small scale methodology AMS I-D. The value is directly referred from study on grid connected electricity baseline in Malaysia. The study is available on the following web-link; http://cdm.eib.org.my/upload/articles1016,article,1151393608,CDM%20Baseline%20Malaysia.pdf Project proponent has provided a PDF of yearly emission reduction calculation spreadsheet. The values of emission reduction as mentioned in the PDF sheet were cross-checked with the same in PDD and found acceptable. Project proponent is requested to send the excel sheet for the same to check the data traceability. Project proponent has provided evidence against the assumptions used in emission reduction calculation from the project activity. This was cross-checked and found acceptable.
Date:[5th November 2007] [Response from project developer] The excel sheet of the emission reduction calculations has been sent via email on 31 October 2007.
Date: [14th November 2007] [Comments from Assessor] Why 6% value is selected as internal use for the project activity? Pls. clarify whether term used 'internal use for project activity' is similar to auxiliary consumption? Pls. substantiate operational factor figure used in the calculation. The formula used for net electricity generation is not clear. Formula used for net supply to grid is looks to be the formula for calculating gross generation from project activity. Rest other formulae used in the calculation of emission reduction are acceptable and same are checked with section B of the PDD.
Date:[27th November 2007] [Response from project developer] The excel sheet of the emission reduction calculations has been revised to reflect the correct formulation for the Gross Electricity Generation. The term used "internal use for project activity" is actually auxiliary consumption for the pumping station motors, lighting, as well as stirrers and controls within the project boundary. For the operational factors used in the formulae for electricity generation, it was assumed the initial start-up will be slow and required fine tuning and adjustment. The generator load will be gently increased over the years until the operation is efficiently stabilised.
Date: [28th November 2007] [Comments from Assessor] The revised PDD and excel sheet for the project activity was checked for the corrected formula for Net and Gross generation of electricity from the project activity. Explanation regarding the auxiliary consumption i.e. internal use was found accepted and the evidence for same was checked during the site visit. CAR can be closed.
[Acceptance and close out] OK, Vikrant Badve (11th March 2008).

Date: 5th September 2007 Raised by: Vikrant Badve

No.	Type	Issue	Ref
7	CAR	The investment analysis and prevailing practice mentioned in the PDD section B.5 are not clear. Pls. provide investment analysis sheet including all the assumptions used for calculating project IRR with and with out CDM incentives.	9.9

Date: 23rd October 2007 [Response from project developer] The Investment Analysis in the PDD was revised (B.5 page 13) and detailed financial analysis spreadsheet had been provided.
Date: [25th October 2007] [Comments from Assessor] The excel spreadsheet provided for the financial analysis was found acceptable after having a review of the evidence provided by the project proponent regarding the assumptions used in calculation process. Excel sheet mentions the financial analysis with and without CDM funds. The IRR with CDM funds is 17.13% and without CDM funds it is 1.64%.

As per the additionality requirement for small scale project activity, it is not clear what is the benchmark used for comparing the IRR of project activity without CDM benefit by the project proponent to show the additionality of the project activity. Pls. mention the same in the additionality section of the PDD. The project proponent has provided evidence for prevailing practise barrier and same was accepted.
Date:[5th November 2007] [Response from project developer] The PDD was revised (B.5 page 13) to mention that the IRR without CDM fund is 1.64% which is below the borrowing cost of 8%, and thus it is deemed to be not financially feasible.
Date: [14th November 2007] [Comments from Assessor] The information provided above was checked with the revised PDD version 2 and excel sheet for financial analysis; and found acceptable. CAR can be closed.
[Acceptance and close out] OK, Vikrant Badve (11th March 2008)

Date: 5th September 2007 Raised by: Vikrant Badve

No.	Type	Issue	Ref
8	CAR	Monitoring plan does not mention monitoring of the efficiency of methane flare system.	9.12
Date: 23rd October 2007 [Response from project developer] The PDD was revised (B.6.2 page 19/20) to include the monitoring of the methane flare system.			
Date: [25th October 2007] [Comments from Assessor] As per para 12 of methodology AMS III-H version 5 applicable for the project activity project proponent has opted option (a) and used 90% as default value for methane flare system. This was acceptable as conservative estimate against the manufacturing specification of the project activity which mentions the system efficiency as 98%. CAR can be closed.			
[Acceptance and close out] OK, Vikrant Badve (11th March 2008)			

Date: 5th September 2007 Raised by: Vikrant Badve

No.	Type	Issue	Ref
9	CAR	Provide a copy of monitoring procedures laid by the project proponent for the project activity.	9.13
Date: 23rd October 2007 [Response from project developer] The PDD was revised (B.7.2) to include the monitoring procedure.			
Date: [25th October 2007] [Comments from Assessor] Project proponent has included monitoring responsibility of the project monitoring team. The same will be cross checked during the verification of the project activity and it will be checked that project proponent adhere to the CDM monitoring procedure for the data monitoring as mentioned in the registered PDD. CAR can be closed out.			
[Acceptance and close out] OK, Vikrant Badve (11th March 2008)			

Date: 25th October 2007 Raised by: Vikrant Badve

No.	Type	Issue	Ref
10	CAR	Project Boundary diagram mentioned in PDD version 2 is not clear. Please clarify why electricity export to the grid was kept out of the project boundary?	9.11
Date: [5th November 2007] [Response from project developer] The PDD was revised (B.3 page 11) so that the Project Boundary diagram also includes Electricity supplied from the grid to the project activity and Electricity exported to the			

grid.
Date: [14th November 2007] [Comments from Assessor] The project boundary diagram given in the revised PDD is accepted.
[Acceptance and close out] OK, Vikrant Badve (11th March 2008)

A.4 Annex 4: Statements of Competency

Statement of Competence

Name: Sanjeev Kumar SGS Affiliate: SGS India Pvt. Ltd.

Status

- Product Co-ordinator	☐	
- Operations Co-ordinator	☐	
- Technical Reviewer	☐	
- Expert	☒	

	Validation	Verification
- Local Assessor	☒	☒
- Lead Assessor	☒	☒
- Assessor /Trainee Lead Assessor	☐	☐

Scopes of Expertise

1.	Energy Industries (renewable / non-renewable)	☒
2.	Energy Distribution	☒
3.	Energy Demand	☒
4.	Manufacturing	☒
5.	Chemical Industry	☐
6.	Construction	☐
7.	Transport	☐
8.	Mining/Mineral Production	☐
9.	Metal Production	☐
10.	Fugitive Emissions from Fuels (solid,oil and gas)	☐
11.	Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	☐
12.	Solvent Use	☐
13.	Waste Handling and Disposal	☐
14.	Afforestation and Reforestation	☐
15.	Agriculture	☐

Approved Member of Staff by Siddharth Yadav Date: 16th May 2007

Statement of Competence

Name: Vikrant Badve SGS Affiliate: SGS India Pvt. Ltd.

Status

		Validation	Verification
-	Product Co-ordinator	☐	
-	Operations Co-ordinator	☐	
-	Technical Reviewer	☐	
-	Expert	☒	
-	Local Assessor	☒	☒
-	Lead Assessor	☒	☒
-	Assessor / Trainee Lead Assessor	☐	☐

Scopes of Expertise

1.	Energy Industries (renewable / non-renewable)	☒
2.	Energy Distribution	☒
3.	Energy Demand	☒
4.	Manufacturing	☒
5.	Chemical Industry	☐
6.	Construction	☒
7.	Transport	☐
8.	Mining/Mineral Production	☐
9.	Metal Production	☐
10.	Fugitive Emissions from Fuels (solid,oil and gas)	☐
11.	Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	☐
12.	Solvent Use	☐
13.	Waste Handling and Disposal	☐
14.	Afforestation and Reforestation	☐
15.	Agriculture	☐

Approved Member of Staff by Siddharth Yadav Date: 09/07/2007

Statement of Competence

Name: Kaviraj Singh Pradhan

SGS Affiliate: SGS India Pvt. Ltd.

Status

- Product Co-ordinator ☐
- Operations Co-ordinator ☐
- Technical Reviewer ☐
- Expert ☒

	Validation	Verification
- Local Assessor	☒	☒
- Lead Assessor	☐	☐
- Assessor /Trainee Lead Assessor	☐	☐

Scopes of Expertise

1. Energy Industries (renewable / non-renewable) ☒
2. Energy Distribution ☐
3. Energy Demand ☐
4. Manufacturing ☐
5. Chemical Industry ☐
6. Construction ☐
7. Transport ☐
8. Mining/Mineral Production ☐
9. Metal Production ☐
10. Fugitive Emissions from Fuels (solid,oil and gas) ☐
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride ☐
12. Solvent Use ☐
13. Waste Handling and Disposal ☒
14. Afforestation and Reforestation ☐
15. Agriculture ☐

Approved Member of Staff by: Siddharth Yadav

Date: 8th October 2007

Statement of Competence

Name: Amargit Singh SGS Affiliate: SGS Malaysia Sdn Bhd

Status

- Product Co-ordinator ☐
- Operations Co-ordinator ☐
- Technical Reviewer ☐
- Expert ☐

	Validation	Verification
- Local Assessor	☒	☒
- Lead Assessor	☐	☐
- Assessor / Trainee Lead Assessor	☒	☒

Scopes of Expertise

1. Energy Industries (renewable / non-renewable) ☐
2. Energy Distribution ☐
3. Energy Demand ☐
4. Manufacturing ☐
5. Chemical Industry ☐
6. Construction ☐
7. Transport ☐
8. Mining/Mineral Production ☐
9. Metal Production ☐
10. Fugitive Emissions from Fuels (solid,oil and gas) ☐
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride ☐
12. Solvent Use ☐
13. Waste Handling and Disposal ☐
14. Afforestation and Reforestation ☐
15. Agriculture ☐

Approved Member of Staff by: Siddharth Yadav Date: 11/06/2007