Gold Standard Passport

CONTENTS

SECTION A. Project Title

[See Toolkit 1.6]

Title: UPOIC Wastewater Treatment for Energy Generation, Krabi
Date: 09/12/2014
Version no.: 02

SECTION B. Project description

[See Toolkit 1.6]

Purpose of the project activity, reduction of greenhouse gases

United Palm Oil Industry Public Company Limited (UPOIC) has a crude palm oil mill located in Krabi Province, Thailand at approximately 814 km south of Bangkok. The mill produces Crude Palm Oil (CPO) from the Fresh Fruit Bunches (FFB) at capacity of 175,200 tonnes FFB /year, 300 days per year of operation. From the production processes, there is high organic content wastewater called Palm Oil Mill Effluent (POME) generated at approximately 0.59 m3/ton FFB[1]. This POME has Chemical Oxygen Demand (COD) of 60,000-80,000 mg/L, which is currently treated in an open lagoon system using anaerobic, facultative and polishing ponds, with a depth greater than 2 meters, without aeration. Methane is formed during the anaerobic conditions in the ponds and emitted directly to the atmosphere.

The purpose of 'UPOIC Wastewater Treatment for Energy Generation, Krabi' is to shift from traditional wastewater treatment in opened anaerobic ponds with uncontrolled release of methane to the atmosphere to a closed digester system with biogas capture using Completely Stirred Tank Reactors (CSTR) to extract and capture the methane gas from the high organic laden waste water. The captured gas will be produced electricity, which will be utilized in the palm oil factory. Surplus electricity will be fed into the national grid. Hence, the ultimate purpose of the project activity is to reduce greenhouse gases (GHGs) emissions to the atmosphere, produce electricity, and contribute to an environmentally and socially sustainable development of wastewater treatment at UPOIC.

Estimated project start date: 10/03/2008 (The construction agreement was signed by UPOIC and contractor "Know-How Transfer Co., Ltd".).

[1] 10-day measuring data at UPOIC, Krabi, June-July 2009

SECTION C. Proof of project eligibility

C.1. Scale of the Project

[See Toolkit 1.2.a]

Please tick where applicable:

Project Type	Large	Small
	☐	☑
	☐	☐
	☐	☐
	☐	☐
	☐	☐

	☐

C.2. Host Country

Thailand

C.3. Project Type

[See Toolkit 1.2.c and Toolkit Annex C]

Please tick where applicable:

Project type	Yes	No
Does your project activity classify as a Renewable Energy project?	☑	☐
Does your project activity classify as an End-use Energy Efficiency Improvement project?	☐	☑

Please specify your project type:

Biogas – the project activity is Methane recovery project, which reduces emission through methane avoidance and non-renewable fuel substitution. The biogas captured is used to generate electricity to feed into the grid.

In order to comply with Gold Standard v.2.0 Annex C – guidance on project type eligibility, the project activity is classified as a Renewable Energy project and waste handling and disposal project. The justification as per project type provided below.
Project type: Biogas (landfill gas and biogas from agro-processing, wastewater and other residues)

The project type and Eligibility Criteria as per GS Annex C	**Justify the eligibility of project activity**
Project type: Biogas • Methane recovery project activities shall be eligible for emission reductions from both methane avoidance and non-renewable fuel substitution, under the condition that at least 65% of the volume of the biogas captured, on an annual basis, is used to deliver energy services (e.g. heat, electricity).	As per the registered CDM PDD, the amount of biogas utilization of project activity is more than 65%. The biogas produced by project is estimated at 2,622,256 Nm3/year. It is expected that all of biogas capture be consumed in two sets of generator 952 kW. Hence, the biogas utilized is more than 99% of the volume captured. In addition, the electricity generated will be exported to national grid and CPO mill. Therefore, the technology applied in the project activity is designed in a way to make use of the biogas recovered for delivery of energy service purpose.
• Methane recovery activities at wastewater treatment related to Palm Oil production shall comply with all rules provided for palm oil related activities in the section above 'Electricity and/or heat, and liquid biofuels from biomass resources'.	The project involves with the treatment system for palm oil mill effluent (POME), the CPO mill has applied the RSPO process. Therefore, the project is eligible under this criterion. The following documents will be submitted for GS pre-feasibility; - A Local stakeholder consultation - A certificate of RSPO

Pre Announcement	**Yes**	**No**
Was your project previously announced?	☐	x
Explain your statement on pre announcement The project activity was not previously announced. The project proponent decided to invest the project activity in considering with CDM revenue on 10 August 2007. The project has been already registered as a CDM.		

C.4. Greenhouse gas

[See Toolkit 1.2.d]

Greenhouse Gas	
Carbon dioxide	☑
Methane	☑
Nitrous oxide	☐

C.5. Project Registration Type

[See Toolkit 1.2.f]

Project Registration Type	
Regular	☐

Pre-feasibility assessment	Retro-active projects (T.2.5.1)	Preliminary evaluation (T.2.5.2)	Rejected by UNFCCC (T2.5.3)
	☐	☑	☐

SECTION D. Unique project identification

D.1. GPS-coordinates of project location

[See Toolkit 1.6]

	Coordinates
Latitude	08° 09' 2382" N
Longitude	09° 01' 4009" W

Explain given coordinates

The project is located at 96 Moo 6, Nua Klong-Kao Panom Rd., Huay Yoong Sub-district, Nua Klong District, Krabi Province, 81130 Thailand. The location of the project site is shown in figure 1.

D.2. Map

[See Toolkit 1.6]

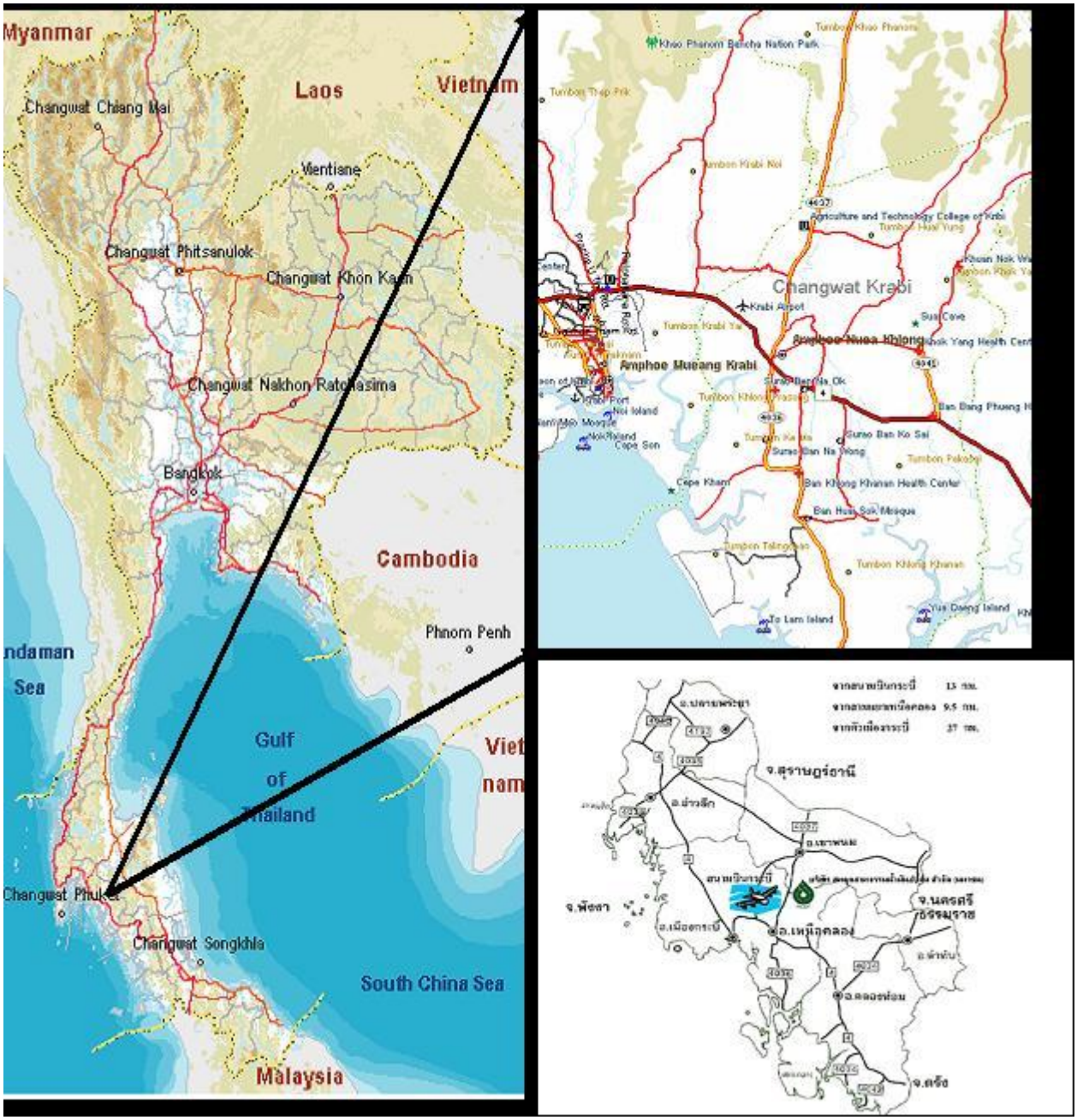


Figure 1 : Location of the Project Activity in Thailand

SECTION E. Outcome stakeholder consultation process

E.1. Assessment of stakeholder comments

[See Toolkit Annex J]

The project will apply the Gold Standard retroactive registration, version 2.0. The public consultation meeting was conducted three times; on 26 May 2008 and 9 July 2008. In the meeting, the presentation of project activity and Q&A session were organised to allow stakeholders to raise questions regarding the impacts of the project and to share opinions. Representatives from the project proponent answered questions regarding the biogas technology, climate change and the development of the project under the CDM. The minute of meetings are summarized as follow;

I. 1st – Local stakeholder consultation meeting:
Date of Meeting: 27/05/2008
Place: Meeting room of Nuaklongprachbumroon School, Nuaklong District, Krabi Province
Invitation by: letters and fax
Invitee: local people, local NGOs, academic institutions and local government authorities
Number of participants: 19

During the public consultation meeting, the project developer clarified all raised issues and provided a detailed explanation of the technology to be applied. The following responses were provided to the questions asked during the local stakeholder meeting:

Question 1: What is the objective of the meeting?
ANS: The objective is to introduce the project activity to the local people who live nearby. The participants are free to provide the comments regarding the project activity. The comments received will be considered in the project activity. UPOIC hopes that the head of community will convey the information received to the local people further. Therefore people would have a better understanding on the project activity. UPOIC will arrange another meeting in order to receive more comments/feedback from local stakeholder in the next few months.

Question 2: Does this meeting need to have a consensus agreement from stakeholder?
ANS: No. This meeting intends to introduce the description of project activity and to receive the feedback from the participants in order to improve the project.

Question 3: Please explain more detail on the biogas system and the biogas utilization. How to handle the biogas and how does the project activity help the reduction of global warming?
ANS: The existing wastewater treatment system of UPOIC is an anaerobic open lagoon system that is able to emit the methane into the atmosphere. The methane is one of green house gas (GHG) causes the global warming. The installation of new system is to capture the methane content in the biogas from wastewater treatment process. The biogas will be utilised for electricity generation purpose. The power produced will be fed into the national grid that can replace the electricity generated from fossil fuel based power plants. Thus, the project helps the GHG emission reduction and mitigates the global warm impact.

Question 4: What is the safety management of the project? How can wastewater temp be reduced? Are there any explosion risks? And will there be any wastewater leakage to underground or surface water?
ANS: The biogas system of the project is designed for palm oil wastewater treatment. The design of the biogas system is considered the safety of operation, environmental mitigation and protection. The safety management is provided in the IEE report and described in the operation manual. The operator will control the leakage of wastewater and biogas. The emergency plan will be in place. The annual maintenance will be conducted in order to ensure the operation of the project is well controlled.

The temperature of the wastewater will be reduced in the sedimentation pond. The biogas

captured will be controlled in the digesters. The biogas pressure will be monitored. The excess biogas will be flared in the enclosed in order to prevent the high pressure in the system. The digester will be lined with the cement material that prevents the wastewater leakage into the ground water. The biogas system will be covered by the PVC sheet. This will reduce the odour problem in the environment.

Other comment: The participant gave comments that the project owner should distribute more information to local stakeholders so that people can receive more knowledge about the biogas system. In addition, the documents should be prepared with easy explanation and easy to understand. They wish the project owner would invite more local people for the next consultation meeting.

II. Publication of project documents

The project documents were published and easy to access at UPOIC factory, local authority office in Krabi Province, UPOIC head office in Bangkok. The published documents were non-technical PDD and IEE report. The announcement of the project publication was conducted through the press called "Matichon" – a Thai newspaper and "Daily Express" – a local English Newspaper on 30 May 2008. The invitation letters for meeting participation and giving comments to project were sent to the local people.

III. 2nd – Local stakeholder consultation meeting:

Date of Meeting: 09/07/2008
Place: Meeting room of Nuaklongprachbumroon School, Nuaklong District, Krabi Province
Invitation by: letters and fax
Invitee: local people, local NGOs, academic institutions and local government authorities
Number of participants: 22

The following details are the question and responses that discussed within the meeting;
Question 1: The local administrative people need more information on pros and cons of the project activity.
ANS: The project owner will provide the response regarding to pros and cons of the project activity. (The response letters regarding this issue have been delivered to the local stakeholder on 5th August 2008. The evidence provided in the minute of meeting.) The details of project activity have been provided in the non-technical document that presented to the participants in this meeting.

Question 2: Are there any environmental impact from the construction and the operation of the project to the surrounding community in the long term?
ANS: During the construction period, there would be more traffic and might be dusty around the project activity area. The mitigation regarding this impact will be spraying water along the road in order to reduce the dust dispersion.
During the operation period, the wastewater treated will not be discharged to the receiving water. The impact to quality and quantity of the surface water nearby the project will be low. The project activity is located next to the existing CPO factory, there will be no change in land used or soil condition. In the long-term impact, the annual monitoring will be conducted. The project will be verified by third party in order to ensure the GHG emission reduction activity. In the case that the local people have any concern or feedback regarding the impact from the project activity, please feel free to provide them to UPOIC. This will be a part of monitoring process as well. Therefore, the project activity will be improved accordingly.

Question 3: How to make sure that there will be no environmental problem caused by the project in the future?
Recommendation: The local people may set up a committee with the factory in order to cooperate the mitigation and prevention plan for the future. In addition, this cooperation can create a good relationship between the project owner and local people.
UPOIC response: UPOIC will consider this recommendation and will try to find the way to cooperate with local people.

E.2. Stakeholder Feedback Round

Please describe/report how the feedback round was organised, what the outcomes were and how you followed up on the feedback.

The stakeholder feedback round is ongoing. The outcome will be provided into this section once the process is completed.

SECTION F. Outcome Sustainability assessment

F.1. 'Do no harm' Assessment

[See Toolkit 2.4.1 and Toolkit Annex H]

Safeguarding principles	Description of relevance to the project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
Human Rights			
1. The project respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people. The project is not complicit in Human Rights abuses.	The project is located in Krabi Province where the surroundings are palm oil and rubber plantation area. None of any cultural property is close to the biogas plant. The project does not cause human rights violation. No indigenous people would be affected by the project activity. Thus, the project risks breaching to this safeguarding principle is very low.	Low	N/A
2. The project does not involve and is not complicit in involuntary resettlement.	The resettlement is not needed due to the project activity is set up at the existing location. Therefore, it is not relevant to consider this safeguarding principle.	N/A	N/A
3. The project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage.	The project is not located close to any cultural heritage. The project takes place at an exiting location where the CPO factory has been installed since 1997. Therefore, it is not relevant to consider this safeguarding principle.	Low	N/A

Safeguarding principles	Description of relevance to the project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
Labour Standards			
4. The project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights.	Thailand has labour protection act[2]. The law entitles the employees to form labour unions or indulge in collective bargaining or other activities necessary to claim their rights and benefits. Therefore, the project activity has very low risk in breaching this safeguarding principle.	Low	N/A
5. The project does not involve and is not complicit in any form of forced or compulsory labour.	The project does not and will not involve any forced or compulsory labour[3]. Furthermore, the technology in the project activity does not involve any intensive manual labour. Therefore, it is very unlikely that the project will breach this safeguarding principle.	Low	N/A
6. The project does not employ and is not complicit in any form of child labour.	The project does not involve any child labour and is in compliance with all the necessary national/international regulations[4].	Low	N/A
7. The project does not employ and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.	The project does not and will not discriminate against individuals and employment of staffs is not based on gender, race, religion, and sexual orientation or on any other basis. In Thailand, there is labour legislation that protects against some facets of this principle[5].	Low	N/A
8. The project provides	The project will provide safe and healthy work environment. The same is also included in the operation manual for the project activity. Thailand has	Low	N/A

[2] See Labour Protection Act BE 2541 (1998) and Thai Civil and Commercial Code. More specifically, see Labour Relations Act BE 2518 (AD 1975) for rights of employees in forming trade unions. Note that as stipulated by the Act, the responsibilities of labour unions include a) participating in negotiation with employers, guild associations, other labour unions to provoke their rights and benefits; b) assist in an effort to arrange a work strike; c) clarify any unclear points on labour conflicts; and d) arrange demonstration and participate in a strike.

[3] Referring to Kingdom of Thailand Constitution, section 3 (right and freedoms of the citizens), the Thai citizens have the right to choose their jobs freely, http://www.thprc.org/book/node/16.htm

[4] See Labour Protection Act BE 2541 (1998) and Thai Civil and Commercial Code. According to the labour law, a child labour could be employed only if he has completed 15 years of age. But, in order to employ child labour below 18 years of age, the employer is required to notify it to the labour inspector regarding the employment of a child labour within 15 days from the date of joining the job. Likewise, the law restricts an employer to make a child labour below 18 years to work on public holidays and to do overtime. Further, child labour below 18 are not allowed work in certain working environments such as metal stamping, working with hazardous chemicals, and working with poisonous microorganisms.

[5] See Labour Protection Act BE 2541 (1998) and Thai Civil and Commercial Code. For example, according to the labour acts, both male and female employees must be treated equally in a working environment. However, there are certain exceptions in this case. For instance, an employer is restricted to employ female employee in such organizations engaged in mining as well as construction projects, underwater and tunnel works, and production and transportation of inflammable materials and explosives. Similarly, a pregnant female employee is prohibited from working in a plant or equipment that vibrates and is prohibited from lifting or carrying objects on her head that are more than 15 kilograms. Additionally, an employer cannot terminate a female employee when she is pregnant.

Safeguarding principles	Description of relevance to the project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe and unhealthy work environments.	the regulation on measures to ensure safety in the work place[6]. Therefore, the risk of the project activity breaching this safeguarding principle is low.		
9. The project takes a precautionary approach in regard to environmental challenges and is not complicit in practices contrary to the precautionary principle.	As per the effluent discharge regulation, it allows a maximum permissible COD level from the factory of 120 mg/L[7]. In addition, Thailand endorsed the Rio Declaration on Environment and Development in which covers the precautionary approach[8]. Therefore, it is very low risk in term of practicing contrary to the precautionary principle.	Low	N/A
10. The project does not involve and is not complicit in significant conversion or degradation of critical natural habitats, including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value, or (d)	The project is located next to the CPO milling factory. There is none of rare plants, animals or the habitats within the project boundary. The project will not result in conversion or degradation of critical natural habitats.	N/A	N/A

[6] See Labour Protection Act BE 2541 (1998). In the Act, it is stated that a National Safety Committee shall be established in order to determine guidelines for safety at work, and a private organization shall be established in order to assist, train and provide technology to all employers under the government's control. Note that under the Act, government inspector can inspect the employer's workplace; collect samples of materials or products in order to analyse the safety in the workplace; and write orders to the employer and the employee requiring them to comply with the law.

[7] Notification by the Ministry of Industry, No. 2, B.E. 2539 (1996) issued under the Factory Act B.E. 2535 (1992)

[8] "Thailand's role in the United Nations" by Permanent Mission of Thailand to the United Nations Office and other International Organizations in Geneva, http://www2.mfa.go.th/ungeneva/ThailandAndUN.aspx

Safeguarding principles	Description of relevance to the project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
recognized as protected by traditional local communities.			
11. The project does not involve and is not complicit in corruption.	Thailand is a signatory of the convention against corruption[9]. The risk of the project breaching this safeguarding principle is low.	Low	N/A

F.2. Sustainable Development matrix

[See Toolkit 2.4.2 and Toolkit Annex I]

Insert table in section C3 from your Stakeholder Consultation report (Sustainable Development matrix).

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
Gold Standard indicators of sustainable development.	If relevant copy mitigation measure from "do no harm" –table, or include mitigation measure used to neutralise a score of '–'	Check www.undp.or/mdg and www.mdgmonitor.org Describe how your indicator is related to local MDG goals	Defined by project developer	Negative impact: score '–' in case negative impact is not fully mitigated score 0 in case impact is planned to be fully mitigated No change in impact: score 0 Positive impact: score '+'
Air quality		Target 7. A: "integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources".	Air quality will be improved substantially compared to emission levels (SOx and NOx) related to fossil fuel combustion. The electricity generated by the project is exported to the national grid in which will displace electricity generated from fossil fuel fired power plants in the grid. The GHG emissions will also be reduced as a consequence of the project. Furthermore, by replacing the open	0

[9] Signatories to the United Nations Convention Against Corruption; http://www.unodc.org/unodc/en/treaties/CAC/signatories.html

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
			anaerobic lagoon with an enclosed biogas digester, the project significantly contributes to an improvement of odour emissions. This has a substantial impact on quality of life for the employees at the plant and residents living in the area close to the lagoons.	
Water quality and quantity		Target 7. A: "integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources."	**Water quality:** Water quality changes compared to release of pollutants and its impacts. The quality of the treated wastewater will be significantly improved with the implementation of the biogas system. This parameter is scored as positive. **Water quantity:** Water quantity changes in water balance and availability in ground and surface water. The project does not impact any change to the water balance or the availability in ground and surface water. The project treats the wastewater from the CPO mill factory with biogas recovery system. The amount of wastewater treated will be utilized for irrigation purpose and reused within the factory. Since, there is no significant impact, therefore, this parameter is scored	+ 0

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
			as zero.	
Soil condition		n/a	**Soil contamination, erosion:** There is no change due to this indicator. The project activity has no impact to soil contamination and erosion. Therefore, the parameter is scored as zero.	0
Other pollutants		n/a	**Level of noise:** The noise level during the implement of the project activity is under the national standard. There is no impact due to the operation of the project activity. Therefore, the parameter is scored as zero.	0
Biodiversity		n/a	**Threatened plants and animals:** There is no significant change to the livelihood of plants or animals before or after the project. Although a reduction of pathogens due to improvement in the overall effluent treatment system might be observed, with a potential benefit on plant, animal, and human health. The project will be located in the existing starch plant area. Therefore, the parameter is scored as zero.	0
Quality of employment		n/a	**Training of staff:** The project leads to employment generation in the power production unit and in the operation and maintenance of the CSTR system. The employment and training of skilled staff	0

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
			has an impact on job quality in the rural context of the project. Nonetheless, it is not convincing that such a benefit is significant enough, especially when considering that training on issues such as safety is becoming a requirement by statutory regulations; a neutral score is kept for this indicator.	
Livelihood of the poor		n/a	**Poverty alleviation:** Compared to baseline, the project will generate income through additional employment. However, as the income will affect the employees of the project, but not significantly affect the whole communities around the project, thus it will not significantly improves the livelihood of the poor in general. Therefore, the score is neutral.	0
Access to affordable and clean energy services		n/a	**Change in energy use:** There is no change in energy use due to the project activity. The surrounding communities can access and use the electricity from the existing grid, which is the same as the one that the project activity will feed the (biogas) electricity to. Therefore, the impact on this indicator is neutral.	0
Human and institutional capacity		n/a	**Education and gender equality:** The project provides training for any new employees so it does not affect the education of the local population in general. In addition, the project will recruit new employees in accordance to their	0

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
			qualifications, not gender; therefore it does not affect the livelihood and education for women in particular. This parameter is scored as neutral.	
Quantitative employment and income generation		n/a	**Number of jobs and income from employment:** The project creates additional jobs and income for the new employees. The impact on this indicator therefore is positive.	+
Balance of payments and investment		n/a	**Net foreign savings:** The project activities lead to reduction in fossil fuel consumption for electricity generation. The fossil fuel consumption for electricity generation in Thailand normally is imported. However, the project seems to have an impact on net foreign currency savings, but it is small at the wide-economy level. A neutral score is chosen for an accurate assessment for this parameter.	0
Technology transfer and technological self-reliance	-	n/a	**Training/or workshops for employees:** The project showcases an innovative way to utilise renewable energy from waste and will provide training in regards to the technology to the employees; however, since this point is already covered in the quality of employment, thus for being conservative, the indicator is scared zero.	0

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
Justification choices, data source and provision of references				
Air quality	Referring to Standard of Air Pollution from Power Plants, B.E. 2547 (2004) – for SOx and NOx from coal, http://www.diw.go.th/diw/law50/air/A7.pdf , Ministry of Industry Referring to the IEE Chapter 4 (Environmental Impact Assessment), table 4.1-2 (Limitation of Emission from the Project Activity) Referring to Standard of Air Pollution from Factories, B.E. (2006) – for SOx and NOx from fuel oil, http://www.diw.go.th/diw/law50/air/A11.pdf , Ministry of Industry Referring to Initial Environmental Examination (IEE), chapter 4 (environmental Impact Assessment), section 4 (odour).			
Water quality and quantity	IEE chapter 6 (environmental impact assessment – water pollution) IEE chapter 6 (environmental impact assessment – underground contamination)			
Soil condition	IEE chapter 6 (Environnemental impact assessment - soil pollution)			
Other pollutants	IEE chapter 6 (Environnemental impact assessment - impact on noise)			
Biodiversity	IEE chapter 2 (Project location and map)			
Quality of employment	IEE chapter 6 (Environmental impact assessment – employee training)			
Livelihood of the poor	I IEE chapter 5 (Current environmental situation – electricity consumption)			
Access to affordable and clean energy services	UPOIC Wastewater Treatment for Energy Generation, Krabi PDD, project description, A.2			
Human and institutional capacity	Local stakeholder consultation report			
Quantitative employment and income generation	Initial Environmental Evaluation (4.3 Social aspect)			
Balance of payments and investment	Referring to table 2 (Thailand Energy Balance 2009) on page XIV (please find imported crude oil)[10], and VI (chart – fuel consumption for electric generation) Thailand Energy Statistics 2009, by Department of Alternative Energy Department and Efficiency (DEDE), Ministry of Energy.			
Technology transfer and technological self-reliance	IEE chapter 6 (Environmental impact assessment – employee training)			

[10] http://www.dede.go.th/dede/fileadmin/usr/wpd/static/stat53/Thai_En_Stat_2009%28preliminary%29.pdf

SECTION G. Sustainability Monitoring Plan

[See Toolkit 2.4.3 and Toolkit Annex I]

No		GS1
Indicator		Water quality
Mitigation measure		None
Repeat for each parameter		-
Chosen parameter		COD of the wastewater at the outlet of UASB system
Current situation of parameter		Refer to the baseline situation
Future target for parameter		There is no as such future target for this parameter but to make sure that the COD entering open lagoons in the project is lower than COD entering the open lagoons in the baseline scenario.
Way of monitoring	How	COD out from the CSTR system will be measured using colorimetric method in the on-site laboratory.
	When	Please refer to the details in the monitoring section in the PDD.
	By who	Internal laboratory

No		GS2
Indicator		Quantitative employment and income generation
Mitigation measure		None
Repeat for each parameter		-
Chosen parameter		Number of people employed in the project activity
Current situation of parameter		Refer to the baseline situation
Future target for parameter		N/A
Way of monitoring	How	The HR records will be the basis on monitoring number of people employed by the project activity.
	When	Once a year
	By who	Project owner

No		GS3
Indicator		Quantitative employment and incomegeneration
Mitigation measure		None
Repeat for each parameter		-
Chosen parameter		Income of employees
Current situation of parameter		NA
Future target for parameter		The average monthly income in 2009 at Krabi province was 6,098 THB/capita[11].
Way of monitoring	How	This parameter will be monitored based on the income of employee hired by the project. The data will be referred from the administration of company.
	When	Once for each monitoring period
	By who	Project owner

Additional remarks monitoring

[11] http://service.nso.go.th/nso/nsopublish/poverty/files/52/wkk/T.%201%20whole_income_total.pdf

SECTION H. Additionality and conservativeness

This section is only applicable if the section on additionality and/or your choice of baseline does not follow Gold Standard guidance

In order to determine the baseline of the project activity, the project applies following methodologies;
AMS III.H – Methane Recovery in Wastewater Treatment
AMS I.D – Grid Connected Renewable Electricity Generation.
These methodologies are approved by UNFCCC. This is inline with requirement of the Gold Standard.

H.1. Additionality

[See Toolkit 2.3]

With the benefit of CDM revenue, the project activity could become economic viable. The investment analysis is applied in order to present the project additionality. The project activity has been demonstrated using the "Tool for the demonstration of assessment of additionality, version 05.2". Please refer to the PDD section B.5 for more information.

H.2. Conservativeness

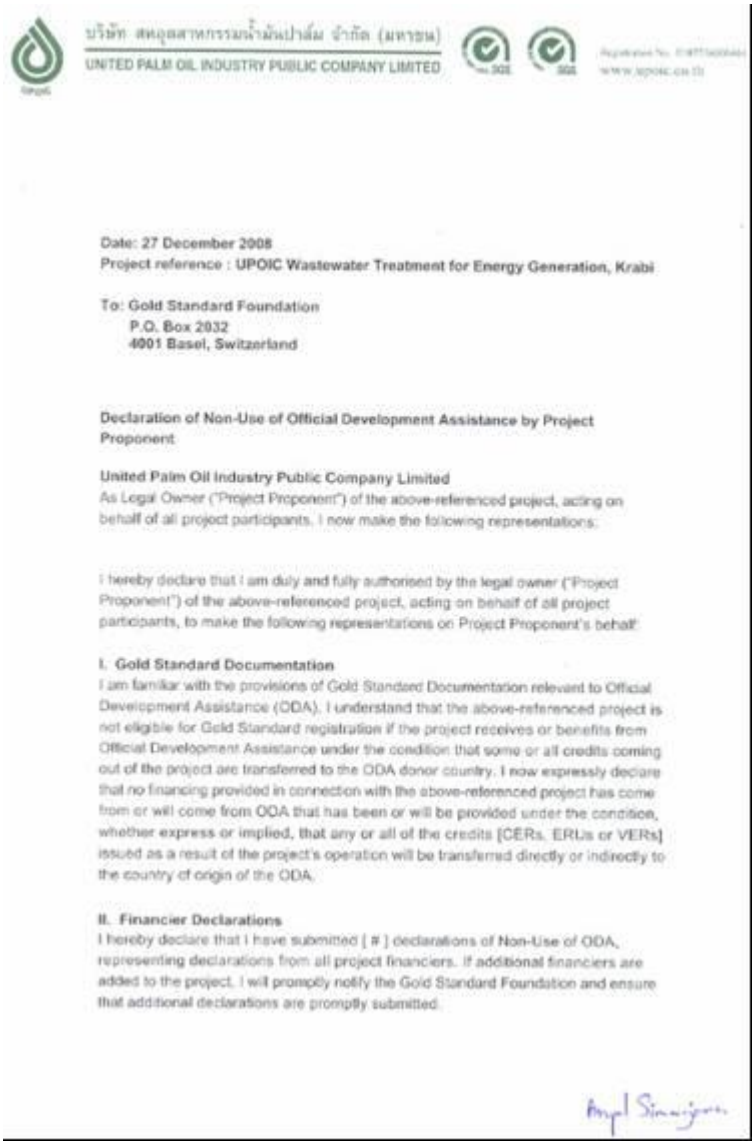
[See Toolkit 2.2]

The baseline scenario selection and the calculation of greenhouse gas emission reductions have been carried out in the most conservative manner when the methodology provided to possibilities to act.

Please refer to the PDD Sections B.3, B.4, B.5 and B.6 for more details on project boundary definition, baseline scenario selection and emission reductions calculation.

ANNEX 1 ODA declarations

No official development assistance (ODA) is used in the project activity. No loans from international financial institutions (IFIs) are included. The project will be financed through a commercial Thai Bank on local typical conditions, the Energy Conservation Promotion fund from Energy Policy and Planning Office (EPPO), and the sale of generated CERs to private investors. The ODA declaration letter from UPOIC and EPPO can be found below;



บริษัท สหอุตสาหกรรมน้ำมันปาล์ม จำกัด (มหาชน)
UNITED PALM OIL INDUSTRY PUBLIC COMPANY LIMITED

Date: 27 December 2008
Project reference : UPOIC Wastewater Treatment for Energy Generation, Krabi

To: Gold Standard Foundation
P.O. Box 2032
4001 Basel, Switzerland

Declaration of Non-Use of Official Development Assistance by Project Proponent

United Palm Oil Industry Public Company Limited
As Legal Owner ("Project Proponent") of the above-referenced project, acting on behalf of all project participants, I now make the following representations:

I hereby declare that I am duly and fully authorised by the legal owner ("Project Proponent") of the above-referenced project, acting on behalf of all project participants, to make the following representations on Project Proponent's behalf:

I. Gold Standard Documentation
I am familiar with the provisions of Gold Standard Documentation relevant to Official Development Assistance (ODA). I understand that the above-referenced project is not eligible for Gold Standard registration if the project receives or benefits from Official Development Assistance under the condition that some or all credits coming out of the project are transferred to the ODA donor country. I now expressly declare that no financing provided in connection with the above-referenced project has come from or will come from ODA that has been or will be provided under the condition, whether express or implied, that any or all of the credits [CERs, ERUs or VERs] issued as a result of the project's operation will be transferred directly or indirectly to the country of origin of the ODA.

II. Financier Declarations
I hereby declare that I have submitted [#] declarations of Non-Use of ODA, representing declarations from all project financiers. If additional financiers are added to the project, I will promptly notify the Gold Standard Foundation and ensure that additional declarations are promptly submitted.

III. Financing Plan

I agree to complete and submit a sufficiently clear and transparent financing plan for the project so that during validation the Validator can assess compliance with the Non-Use of ODA requirement.

IV. Duty to Notify Upon Discovery.

If I learn or if I am given any reason to believe at any stage of project design or implementation that ODA has been used to support the development or implementation of the project, or that an entity providing ODA to the host country may at some point in the future benefit directly or indirectly from the credits generated from the project as a condition of investment, I will make this known to the Gold Standard immediately.

V. Sanctions. I am fully aware that under Section 10 of the Gold Standard Terms and Conditions sanctions and damages may be incurred for the provision of false information related to Projects and/or Gold Standard credits.

Signed: Ampol Simarojana

Name: Mr. Ampol Simarojana

Title: Factory Director

On behalf of : United Palm Oil Industry Public Company Limited

Notification of the Energy Policy and Planning Office
Affirmation of the Financial Assistance Provided under
the Project on Biogas Technology Promotion for Industrial Facilities

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The Energy Policy and Planning Office (EPPO), in the capacity as Secretariat to the Energy Conservation Promotion Fund (the Fund), has formulated a **Biogas Technology Promotion Plan 2008-2011**. To implement the plan, a **Project on Biogas Technology Promotion for Industrial Facilities** has been initiated with a view to inviting potential industrial operators, wishing to invest in the construction of a biogas system for on-site wastewater or solid waste management, to submit proposals for funding from the Fund. The **objective** of the Biogas Technology Promotion Plan/Project is to provide financial assistance to various types of industrial facilities in order to boost wider application of biogas technology, on a voluntary basis, in Thailand. This will be a means to encourage clean energy development, which will bring about reduction of greenhouse gas emissions and also solution to environmental problems in a sustainable manner.

EPPO wishes to hereby affirm that the financial assistance provided under the **Project on Biogas Technology Promotion for Industrial Facilities** is allocated from the Fund, of which the revenue is currently from contributions pursuant to Section 24(2) of the Energy Conservation Promotion Act, B.E. 2535 (1992), as amended up to No. 2, B.E. 2550 (2007), delivered by producers of petroleum at refineries and petroleum importers for distribution within Thailand. The Fund does not receive any money or asset from the private sector, both local and overseas, or from any foreign governments or international organizations, to be used for the implementation of programs/projects under the Fund.

Announced on January 2009

V - Jirapraditkul

(Viraphol Jirapraditkul)
Director-General Energy Policy and Planning Office

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