GOLD STANDARD PASSPORT

GOLD STANDARD PASSPORT

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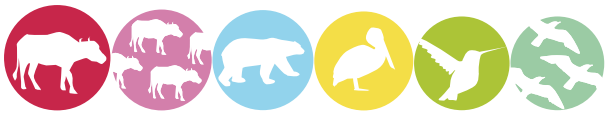

The Gold Standard
Premium quality carbon credits

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SECTION A.	Project Title

[See Toolkit 1.6]

Clean Energy One Biomass Power Plant Project

SECTION B.	Project description

[See Toolkit 1.6]

The proposed project entails the installation of a 9.4 MW power plant, which uses coconut residues as the primary fuel for power generation. The project is located in Prachuap Khirikhan Province, in southern Thailand.

Clean Energy Thapsakae Limited (previously TP Reanchai Industry Company Limited) was founded for the purpose of electricity production from biomass and electricity supply to the national grid. The project is a Greenfield project. As discussed in Section B.4, the most conservative and plausible baseline scenario corresponds to the situation in which the power would have been generated in the grid. The main biomass fuels for the project are coconut residue and coconut frond. The coconut residue is a by-product from the coconut fiber production. Coconut residue is easy to obtain in the plant area and surroundings as the main agricultural activity in Prachuap Khirikhan, Chumporn, Surat Thani and Samut Sakhon is based on coconut plantations. The biomass residues used in the project activity would have been dumped in open in the absence of the project activity.

The electricity generated will be sold to the Provincial Electricity Authority (PEA). The main channel for PEA purchases of renewable energy is the Very Small Power Producer scheme. Standardized power purchase agreements (PPAs) with EGAT (Electricity Generating Authority of Thailand) under the VSPP (Very Small Power Producers) program run for one year and are renewed annually.

The use of biomass residue as a fuel for power generation displaces an equivalent amount of grid power, which would otherwise be produced by grid connected power plants. In Thailand, grid power is comprised of a large share of fossil fuel based generation systems. The project will thus achieve GHG (greenhouse gas) emission reductions by displacing fossil-fuel electricity from the grid.

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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

[See Toolkit 1.2.b]
Thailand

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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 justify the eligibility of your project activity:

This is an electricity generation project using biomass resources. With reference to GS Annex C, the project is eligible for Gold Standard registration. This is further elaborated as here below:

- The Project is not making use of non-renewable biomass resources for power generation. The assurance that only renewable biomass fuel will be used will be done in the Sustainability Monitoring Plan.
  In the absence of the Project, the biomass resources used for power generation would have been left to decay anaerobically,. The assurance that only 'surplus biomass' will be used in the project activity will be included in the Sustainability Monitoring Plan.
- The project does not use the land currently in use for growing food crops to grow dedicated energy crops as the coconut plantation already exists in Prachuapkhirikhan Province and it is also one of the major crops[1] in the province.
- The Project is not making use of Genetically Modified Organisms.

[1] Major crops in Prachuapkhirikhan province,Office of Agriculture of Prachuapkhirikhan province, http://www.prachuap.doae.go.th/home/data_eco%20areas.php

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Pre Announcement	Yes	No
Was your project previously announced?	☐	☑

Explain your statement on pre announcement

There has been no public announcement of the project going ahead without the CDM, prior to any payment being made for the implementation of the project.

Project timeline

Date	Event
17/6/2008	Project feasibility study including CDM consideration
29/8/2008	Announcement of the project with CDM acknowledged content[2]
7/10/2008	Communication from SCB Quant Asset Management Co Ltd[3] with South Pole Carbon Asset Management
1/12/2008	MoU with South Pole Carbon Asset Management
20/12/2008	Civil engineering work start = **Project start date**
27/01/2009	Submission of the Letter of Intent to Thai DNA
18/03/2009	Financial closure of the project (Paid up capital)
02/04/2009	Submission of the Letter of Intent to the UNFCCC
10/04/2009	ERPA signed between project owner and Swiss Carbon Assets Ltd
25/08/2009	Stakeholder consultation meeting (physical meeting)
04-05/10/2009	Stakeholder consultation meeting (survey to obtain stakeholder's comments after the physical meeting)
08/01 – 06/02/2010	PDD webhosted on the UNFCCC website
26 October 2010	SFR (SD matrix discussion with stakeholders)

C.4. Greenhouse gas

[2] http://www.asia-rising.com/News_Detail.asp?id=6

[3] Now "Asia Rising Advisory Limited"

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[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	Retroactive projects (T.2.5.1)	Preliminary evaluation (eg: Large Hydro or palm oil-related project) (T.2.5.2)	Rejected by UNFCCC (T2.5.3)
	☑	☐	☐

If Retroactive, please indicate Start Date of Construction dd/mm/yyyy: 20/12/2008

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SECTION D. Unique project identification

D.1. GPS-coordinates of project location

[See Toolkit 1.6]

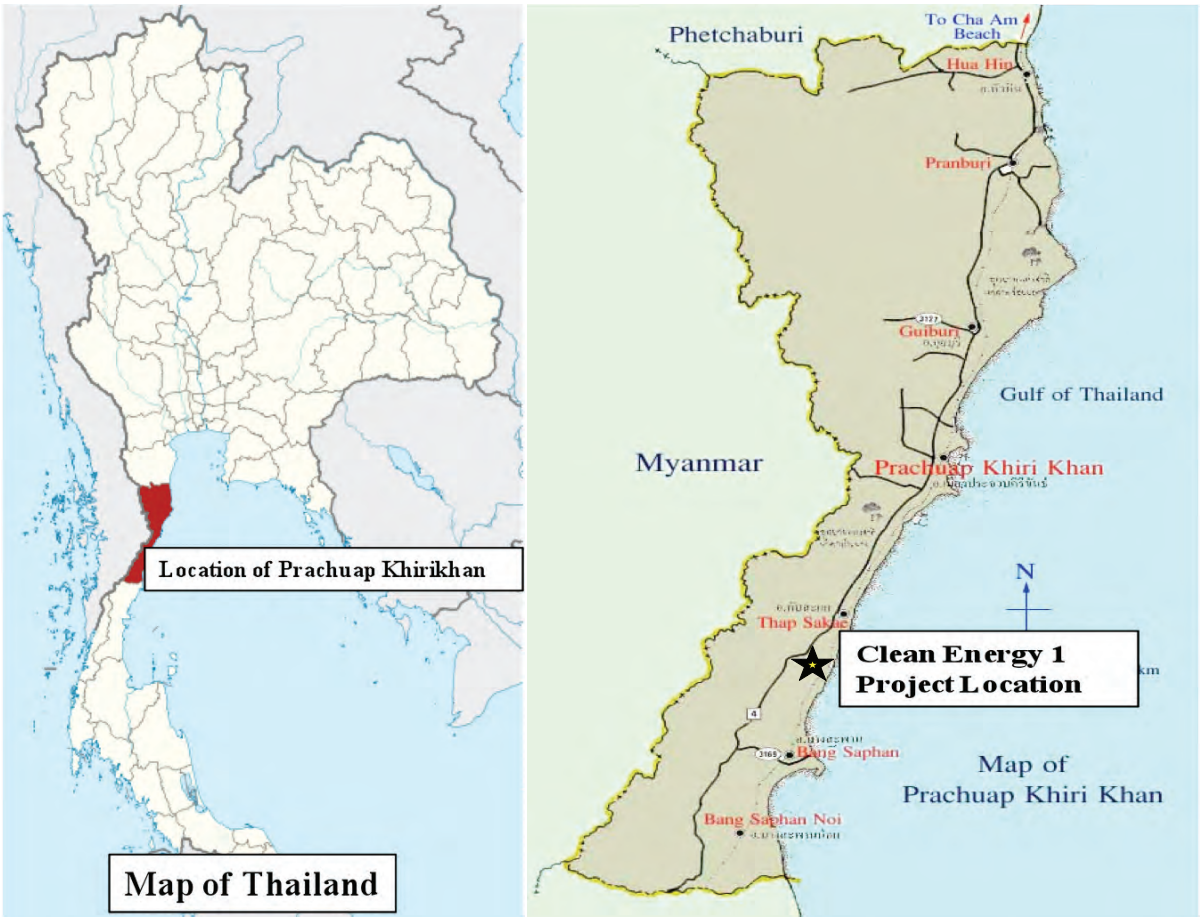
	Coordinates
Latitude	11° 36' 17" N
Longitude	99° 38' 59" E

Explain given coordinates

NA – the given coordinates are sufficient for unique project identification

D.2. Map

[See Toolkit 1.6]



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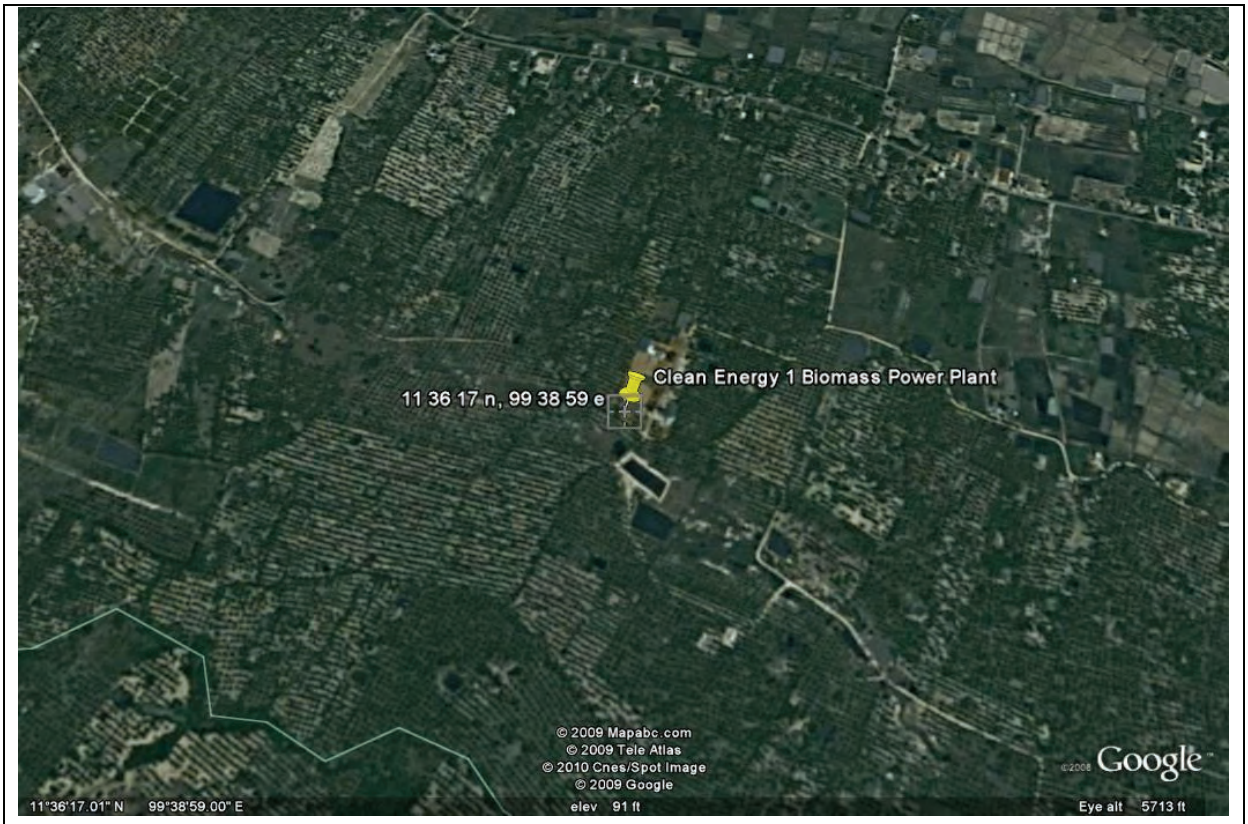

Physical address of the plant:

137 Moo3 Petchakasem Road,
Tumbon Huay Yang, Ampur Tabsakae,
Prachuapkhirikhan Province
Thailand

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SECTION E. Outcome stakeholder consultation process

E.1. Assessment of stakeholder comments

[See Toolkit Annex J]

As the project is a retroactive project, this GS passport details the stakeholder consultation which has been conducted so far as well as the comments from the stakeholders here in this section. The details in regards to the previous stakeholder consultation refer to the IEE.

The project's previous consultation activity was designed to meet the objectives – to inform and explain about the project activity, to allow stakeholders to ask questions and raise concerns, as well as suggest on how the project can be improved so that the suggestions will be put into account. The main components of the previous consultation activity of this project are from 1 to 3 below,

1. Public announcement to inform about the project activity and invitations to the consultation meeting
2. Physical consultation meeting
3. Follow-up survey (interviews & questionnaire)

The Gold Standard has its own specific requirements for conducting a consultation activity as shown in the LSC report template (Annex Q of the GS Toolkit). The presentation of details in this section shall follow the items in the template accordingly.

Design of previous consultation activity

Agenda of the meeting

Explanation of the project and biomass
Environmental impacts and open for the comments

Non-technical summary

Before the previous consultation activity, there were communications to allow stakeholders to understand what the project is about by providing short summaries about the project as part of the leaflets (during the public relation activities for the surrounding communities) and booklets (to give to the stakeholders during the meeting) in local language (Thai).

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The leaflets and booklets include the following information,

The project background in general
The objective of the meeting
Benefits to the communities
Project location
The surrounding communities to be invited to the consultation meeting
Basic facts about renewable energy and biomass
Utilisation cycle from coconuts
Q&A to explain about different aspects of the project

Short, **non-technical summary** as part of those informative materials is translated to English as follows,

Introduction – power production from biomass
Biomass is materials from plants or animals which can be used as energy sources. Mostly are from agricultural by-products or waste from agricultural industry e.g. rich husks, bagasse, coconut residue, waste from animals etc.

Biomass energy – is the energy from either plants or animal including organic waste e.g. woodchip, dry leaves, waste from animals, and household waste. Biomass is a renewable energy source which is different from fossil fuel sources.

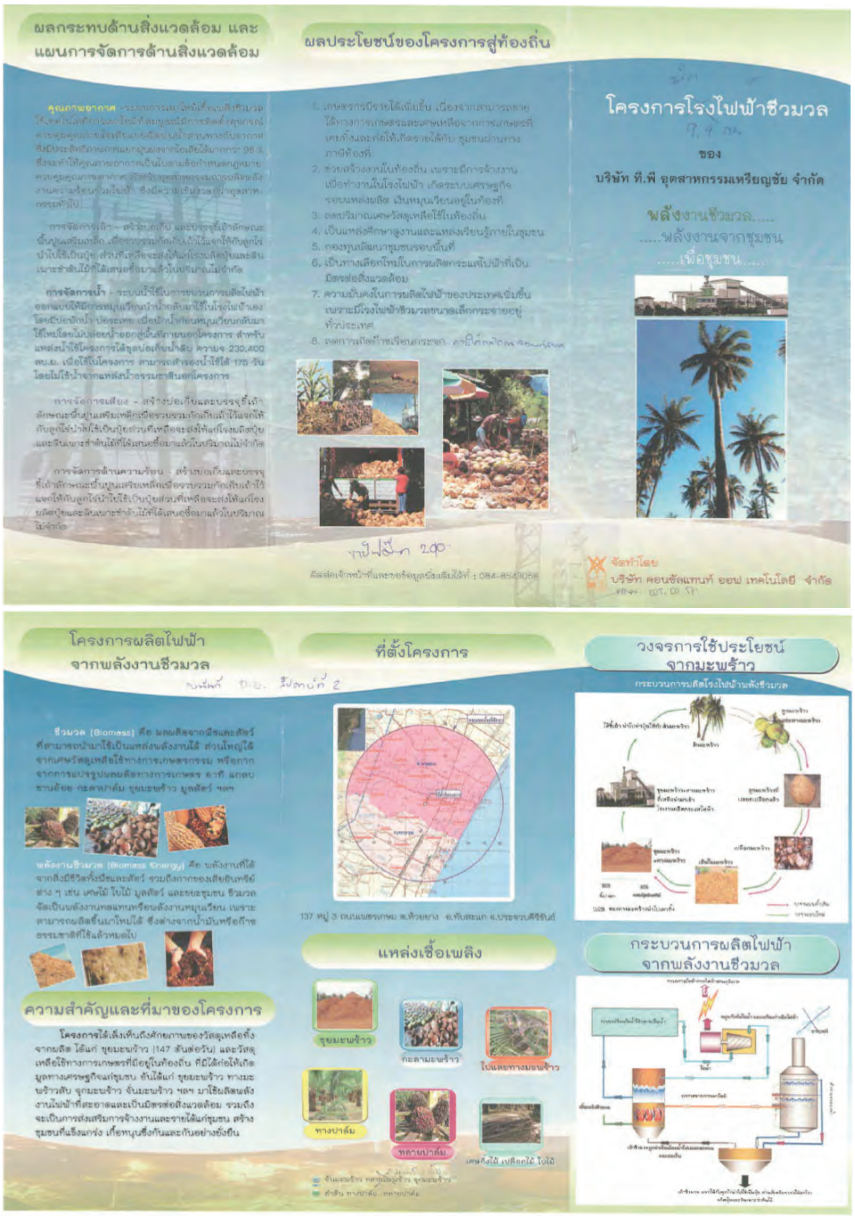
The project background
The project owner realises the potential of agricultural production waste, for example, coconut residues and other agricultural waste which did not create additional economic value for the communities e.g. coconut residue, coconut frauds etc to produce energy which is clean and environmental friendly. Such activity will also results in creating more jobs for people and sustainable communities.

The project location
137 Moo3 Petchakasem Road, Tumbon HuayYang Ampur Tabsakae, Prachuapkhirikhan Province

The areas where the communities are included in the survey to obtain opinions for stakeholders
Within 5 kilometres around the project location, which includes 14 villages

Sources of energy
Biomass from coconut

Diagram demonstrating utilisation cycle from coconuts and electricity production from biomass



Invitation Tracking Table, Individual and Public Invitations

According to the GS requirements, there should be an invitation tracking table which includes category code, organisation, invitee names, way of invitation, date of invitation and confirmation.

For this project, the invitation period started 7 weeks before the meeting day and more than one approach were used to access all stakeholders within the 5 kilometres around the project location which covers 14[4] villages. Those approaches are:

a. Invitation by car announcement through surrounding communities for local villagers from 19-24 August 2009

b. Invitation through visits for local authorities and heads of communities[5] during 17 June – 16 August 2009.

c. Invitation and briefing about the project by organizing a small meeting in each village within the areas of 5 km around the project location during 7-15 August 2009. There were in total 130 people in those invitation meetings[6].

Pictures for b and c are available in the IEE[7].

The approaches that they used showed that the project owner put more effort than only telephoning / or faxing to follow up. Those approaches are also more effective than telephoning / faxing / or only putting advertisement on a notice board as they involved directly stakeholders.

Those people / organisations invited are mostly in the categories A and B (according to the GS toolkit, category A is local people impacted by the project or official representatives and category B is local policy makers and representatives of local authorities).

Text of individual invitations

Example from the invitation letter sent to the Governor of Prachuapkhirikhan Province

Our Ref.EIA 090711/405230

20 July 2009

Objective: to ask for a meeting in order to invite you to a stakeholder consultation meeting and explain about electricity generation from biomass project of TP Reanchai Industry Company Limited

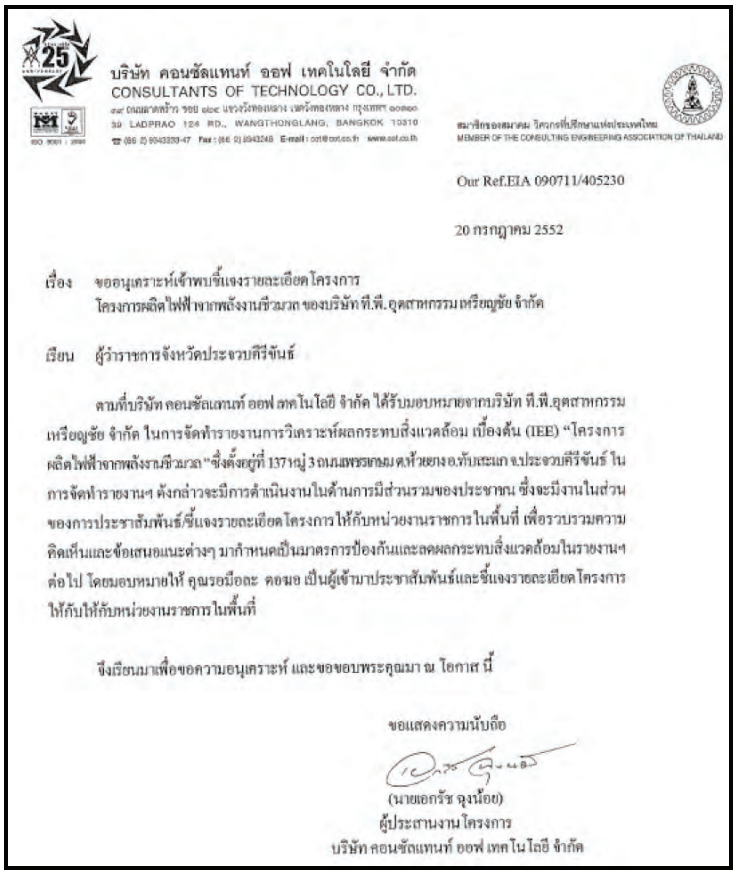
Attn: the Governor of Prachuapkhirikhan Province

As Consultants of Technology Co.,Ltd was assigned by TP Reanchai Industry Company Limited to prepare an Initial Environmental Examination (IEE) report for electricity generation from biomass project, which is located on 137 Moo3 Petchakasem Road, Tumbon HuayYang Ampur Tabsakae, Prachuapkhirikhan Province. Part of the report requires a stakeholder consultation meeting for stakeholders in order for us to gather opinions and suggestions which will be included in measures to prevent or reduce environmental impacts. Ms. Rormuela Dorkor will be a person who leads the public relations and explanation about the project activities to relevant organisations.

We therefore invite you for the meeting and thank you very much in advance for your cooperation

Yours faithfully,

Mr. Ekaraj Chungnoi
Project Coordinator
Consultants of Technology Co.,Ltd



บริษัท คอนซัลแทนท์ ออฟ เทคโนโลยี จำกัด
CONSULTANTS OF TECHNOLOGY CO., LTD.
39 LADPRAO 124 RD., WANGTHONGLANG, BANGKOK 10310

สมาชิกของสมาคม วิศวกรที่ปรึกษาแห่งประเทศไทย
MEMBER OF THE CONSULTING ENGINEERING ASSOCIATION OF THAILAND

Our Ref.EIA 090711/405230

20 กรกฎาคม 2552

เรื่อง ขออนุเคราะห์เข้าพบชี้แจงรายละเอียดโครงการ
โครงการผลิตไฟฟ้าจากพลังงานชีวมวล ของบริษัท ที.พี. อุตสาหกรรมเหรียญชัย จำกัด

เรียน ผู้ว่าราชการจังหวัดประจวบคีรีขันธ์

ตามที่บริษัท คอนซัลแทนท์ ออฟ เทคโนโลยี จำกัด ได้รับมอบหมายจากบริษัท ที.พี.อุตสาหกรรมเหรียญชัย จำกัด ในการจัดทำรายงานการวิเคราะห์ผลกระทบสิ่งแวดล้อม เบื้องต้น (IEE) "โครงการผลิตไฟฟ้าจากพลังงานชีวมวล" ซึ่งตั้งอยู่ที่ 137 หมู่ 3 ถนนเพชรเกษม ต.ห้วยยาง อ.ทับสะแก จ.ประจวบคีรีขันธ์ ในการจัดทำรายงานฯ ดังกล่าวจะมีการดำเนินงานในด้านการมีส่วนร่วมของประชาชน ซึ่งจะมีงานในส่วนของการประชาสัมพันธ์/ชี้แจงรายละเอียดโครงการให้กับหน่วยงานราชการในพื้นที่ เพื่อรวบรวมความคิดเห็นและข้อเสนอแนะต่างๆ มากำหนดเป็นมาตรการป้องกันและลดผลกระทบสิ่งแวดล้อมในรายงานฯ ต่อไป โดยมอบหมายให้ คุณรอมือละ ดอมอ เป็นผู้เข้าประชาสัมพันธ์และชี้แจงรายละเอียดโครงการให้กับให้กับหน่วยงานราชการในพื้นที่

จึงเรียนมาเพื่อขอความอนุเคราะห์ และขอขอบพระคุณมา ณ โอกาส นี้

ขอแสดงความนับถือ

(นายเอกรัช อุ่นน้อย)
ผู้ประสานงานโครงการ
บริษัท คอนซัลแทนท์ ออฟ เทคโนโลยี จำกัด

Text of public invitations

As part of the invitation process as mentioned above, there was an invitation to the local communities through District Chief Officer. This can be seen from the example of letter below,

Ref: 0517/2175
10 August 2009

Topic: About a stakeholder meeting from biomass project of TP Reanchai Industry Company Limited

Dear all,

There will be a stakeholder consultation meeting of the biomass project of TP Reanchai Industry Company, which is located at Moo 3, Tumbon HuayYang Ampur Tabsakae.

The stakeholder will be held on Tuesday 25th August 2009 from 9 am onwards at Subdistrict Administrative Organization (SAO) Office. We would like to invite you to attend the meeting and provide you comments on the project. If you are head of districts, head of villages, or local authorities of the district and sub districts, please invite the local people who live within your management area to attend the meeting as well.

Yours faithfully,

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Mr. Prachin Thansirisin
Tabsakae District Chief Officer

ที่ ปข 0517/4175 ที่ว่าการอำเภอทับสะแก
ถนนเทศบาล ซอย 1 ปข 77130

10 สิงหาคม 2552

เรื่อง การจัดเวทีเสวนากรณีการสร้างโรงผลิตไฟฟ้าจากพลังงานชีวมวลของบริษัท ที.พี. อุตสาหกรรมเหรียญชัย จำกัด

เรียน

ด้วยจังหวัดประจวบคีรีขันธ์ ให้อำเภอทับสะแกจัดเวทีเสวนา เพื่อชี้แจงทำความเข้าใจกับประชาชน ผู้นำท้องที่ และส่วนราชการที่เกี่ยวข้อง กรณีการสร้างโรงผลิตไฟฟ้าจากการพลังงานชีวมวลของบริษัท ที.พี. อุตสาหกรรมเหรียญชัย จำกัด ตั้งอยู่ที่ หมู่ที่ 3 ตำบลห้วยยาง อำเภอทับสะแก

อำเภอทับสะแก ได้กำหนดจัดเวทีเสวนาดังกล่าว ในวันอังคาร ที่ 25 สิงหาคม 2552 เวลา 09.00 น. ณ ห้องประชุม องค์การบริหารส่วนตำบลห้วยยาง อำเภอทับสะแก จึงขอเชิญท่านเข้าร่วมรับฟังการเสวนาชี้แจงตามวัน เวลา และสถานที่ดังกล่าวนี้ สำหรับกำนัน ผู้ใหญ่บ้าน และผู้บริหารองค์กรปกครองส่วนท้องถิ่น ขอให้แจ้งประชาชนในพื้นที่ทราบ และเข้าร่วมรับฟังการเสวนาชี้แจงครั้งนี้ด้วย

จึงเรียนมาเพื่อทราบ และดำเนินการ

ขอแสดงความนับถือ

(นายประจินต์ ธารศิริสิน)
นายอำเภอทับสะแก

ที่ทำการปกครองอำเภอ
ฝ่ายบริหารงานปกครอง
โทร. 032-671721

Description of other consultation methods used

Apart from the physical meeting, there was a follow-up survey between 4th – 5th October 2009,by visiting individual household to interview local people using questionnaire in order to obtain their opinions about the project.

This survey aims at providing opportunities in which the stakeholders are more comfortable to express their opinions to the interviewers directly whereas doing so in a public among the big

group of stakeholders during the physical meeting might be difficult for some villagers.

Consultation process

Participants in the physical meeting

On the 25 August 2009,
There were around 350 people attended the meeting. Pictures from the meeting showed the participants who attended the meeting.
For full pictures of the physical meeting, please refer to the IEE Picture 4.7.3.-2

The survey, which followed after the physical meeting consisted of questionnaire and interviews, has statistics data from the responses as well as the details about number of participants as follows,

The survey consists of three phases

1. Survey with relevant government organisations
2. Survey with head of communities
3. Survey with individual household in villages

Survey with relevant government organisations	
Category code	Organisation
B	Huay Yang Subdistrict Administrative Organization Sang Aroon Subdistrict Administrative Organization Tub Sakae Local Hospital Huay Yang Local Medical Centre Nuan Din Dang Local Medical Centre Hin Turn Local Medical Centre

Survey with heads of communities	
Category code	Organisation
B	19 heads of communities e.g. heads of villages, heads of sub-districts, assistants for head of sub-district

Survey with heads of communities (within 5 km around the project location)		
Category code	Village names	Number of participants
A	Baan Huay Yang village	25[8]
A	Baan Bon	25
A	Baan Tung Yao	36

A	Baan Huay Maprang	23
A	Baan Tung Kwang	24
A	Baan Chai Tha Lae	45
A	Baan Kogma	14
A	Baan Nong Pub	30
A	Baan Nam Tok Sai 1	20
A	Baan Jun Suer	16
A	Baan Rai Nai	36
A	Baan Sang Thong	18
A	Baan Yup Wai	19
A	Baan Sang Arun	30
Total	14 villages	361 participants

For pictures of survey of household, please refer to the IEE, picture 4.7.4-2

Pictures of physical meeting

For full pictures of the physical meeting, please refer to the IEE picture 4.7.3-2

The meeting was held on 25th of August 2009 at Huay Yang Subdistrict Administrative Organization office. Documentation and meeting was held in Thai (local language)

Outcome of consultation process

From the physical meeting and the following surveys, the stakeholders provided comments and questions. Those, together with the answers / explanation from the project owner are detailed below,

Summary of the comments received:

No	Comments / questions
1	What is the initial idea that stems the development of the project?
2	Who will benefit from this project?
3	How can it be assured that there is enough biomass to be fed to the power plant? If this is not possible, what is the solution?

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4	Will the Project also use coal for power production?
5	Can the local communities monitor from time to time to ensure that there will be no use of coal throughout the operation of the Project?
6	How can Project reduce the global warming problem?

Report on how due account was taken of any comments received:

No	Response from the project owner
1	Since the project developer is also in the coconut fiber business, he has seen that there is an opportunity to create value from coconut residue which has been widely left in the region. This will improve the local economic as well as the environmental situation.
2	The project will benefit the followings, 2.1 The local coconut farmers will benefit from sales of agricultural waste. They can collect agricultural residues such as coconut frond which is usually left in excess and sell to project owner. 2.2 Further, the local community will benefit from the stability of the local electricity system because the electricity generated from the project will be fed to the local substation.
3	The biomass availability analysis has been carefully conducted to ensure that there is excess supply of biomass throughout the life time of the power plant. Prachub Kririkhan has the largest area of coconut plantation in Thailand which more than 480,732 Rai[9]. Referring to the provincial agricultural department, waste from coconut processing and plantation are more than 547,488 tons a year of coconut and more than 293,304 ton a year of coconut frond (which is waste from coconut plantation). However, the project needs biomass from coconut residue only 35,983 tons and from coconut fraud only 23,983 tons a year. In addition, the project owner also has a back-up plan in case of material shortage by 1. Having a material storage with capacity of around 9,000 tons which can store material in advance for 47 days 2. In the worst case scenario, the project owner will reduce production capacity or even shut down the system, if necessary.

4	It can be confirmed here that there will be no use of coal to generate electricity. The combustion chamber and the steam boiler provided by LAWI Engineering GMbH are designed to only use biomass fuel. Moreover, the system can be damaged if there is any coal combustion in the system. With such difference in the characteristics of fuels, the use of coal in this Project will cause damage to the power plant and it would not be economically worthwhile for the project owner to do this. In addition, considering law & regulations, the company will need to ask for a permission from the provincial industry office; therefore, it is not possible to use coal in the power plant otherwise it will break the law. The company hereby gives its pledge to the local community there will be no usage of coal in this Project; if the company breaks this promise, it is willing to close down the company.
5	The local communities can monitor this from the fact that, 1. The fuels used for power generation will be monitored by government representatives, who are also responsible for ensuring that the project is in compliance with other environmental regulations. 2. The project will employ local people to work in the power plant, therefore, local people will be closely involved with the operation of the power plant and thus can scrutinize whether the project only uses biomass feedstock or not. The project owner also welcomes people from the local community to visit the power plant.
6	Basically, climate change occurred due to the Greenhouse effect. Green House Gas emission has been released too much in to the atmosphere due to the human activity, for example using of fossil fuel to produce electricity, which keeps heat inside the earth. Accordingly, after a period of time, the temperature of the earth has been rose and impacted the climate pattern. By generating electricity from biomass, which considered as a carbon neutral thanks to the photosynthesis which absorbs carbon dioxide, the project will substitute the amount of electricity which would have been produced by fossil fuel.

From the presentation slides used during the meeting, it is shown that there was a discussion about environmental impacts (e.g. air quality, noise, water, health) as well as impacts to the communities in terms of additional employment, additional income for farmers, contribution to electricity supply in the area, reducing waste in the plantation areas.

From the questionnaire used as part of survey for individual stakeholders after the physical meeting, it is shown that there were discussions about air quality, noise, water quality, health & safety and economic aspects[10].

From all the information provided above about the physical meeting and the following survey, it shows that the project owner was actively willing to identify issues the stakeholders have with the project from their perspective. Those issues also cover some sustainable development indicators as per GS requirements at least in categories of environment and economic development.

E.2.	Stakeholder Feedback Round

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

[See Toolkit 2.11]

The SFR for this meeting was done in accordance to the GS's recommendations[11]. The recommendation was that in addition to the normal SFR process, a small gathering which includes SD matrix discussion should be done.

The SFR meeting was held on 26th October 2010, 1.00 – 3.30 pm. at Prachuapgardenview Resort 99/6 Moo 11, Amphermuang, Prachuapkhirikhan province, Thailand.

1. Design of the Stakeholder Consultation Process

1.1 Agenda[12]

- Explanation of the objective of the meeting
- Explanation of the project details and progress
- Blind sustainable development exercise and Do-no-harm discussion
- Open for comments from the stakeholders, including any mitigation actions or monitoring plan, if any

The (Thai) agenda was attached to the invitation letter to the stakeholders.

1.2 Non-technical Summary

The non-technical summary was in Thai and was attached to the invitation letter to the stakeholders. The English text below demonstrates the content of the non-technical summary.

Non Technical Summary of the project "Clean Energy One Biomass Power Plant Project"
(Clean Energy Thapsakae Limited)

The project is implemented by Clean Energy Thapsakae Limited and consists in the construction and operation of a biomass power plant in order to feed the electricity to the PEA's grid (Provincial Electricity Authority. The project is located at Tambon Huay Yang, Amphur Tabsakae, Prachuapkhirikhan province.

The objective of the project is to generate electricity through sustainable means, using biomass residues instead of the traditional fossil fuels (such as coal, lignite, gas and oil) without impacting negatively on the environment. The main biomass fuels for the project are coconut residue and coconut fraud. In the past, such biomass has been left to decay, which caused impacts to the air quality and climate change.

As a consequence, the company wants to develop this project as a CDM project in which the United Nations provide financial supports in accordance to the emissions of carbon credits (CERs). The company also puts importance on benefits for the surrounding communities; therefore, it intends to develop the project at the Gold Standard, which is a standard emphasizing on sustainable development of environment and communities, income generation and reducing dependency of fuel import.

The project can contribute to sustainable development:

- Social benefits: through the use of agricultural waste, the project generates additional income for local communities for collecting, processing and supplying the biomass. The additional employment will also create

income as well as skills for people.
- Economic well-being: fossil fuel requirements of the country can be reduced.
- Environmental well-being: by displacing fossil-fuel electricity from the grid, the project will achieve Green house gas emission reductions and thus participate to the mitigation of climate change.

south pole

เอกสารสรุปโครงการสำหรับโครงการผลิตไฟฟ้าจากพลังงานหมุนเวียน
บริษัท พลังงานสะอาดทับสะแก จำกัด

รายละเอียดของโครงการ

โครงการโรงไฟฟ้าชีวมวลของบริษัท พลังงานสะอาดทับสะแก จำกัด เป็นโครงการผลิตไฟฟ้าจากชีวมวล ตั้งอยู่ที่ตำบลห้วยยาง อำเภอทับสะแก จังหวัดประจวบคีรีขันธ์ โครงการดังกล่าวมีวัตถุประสงค์เพื่อผลิตกระแสไฟฟ้า โดยใช้พลังงานหมุนเวียนจากชานอ้อยและทางมะพร้าวเป็นเชื้อเพลิงหลัก และจะส่งกระแสไฟฟ้าที่ผลิตได้เข้าระบบของการไฟฟ้าส่วนภูมิภาค (กฟภ.)

ในปัจจุบัน กระแสไฟฟ้าที่ใช้กันในชุมชนโดยทั่วไปนั้นผลิตจากเชื้อเพลิงฟอสซิล เช่นถ่านหิน ซึ่งเป็นเชื้อเพลิงที่ใช้แล้วหมดไป ก่อให้เกิดมลภาวะ อีกทั้งยังเป็นสาเหตุของภาวะโลกร้อนเนื่องจากการปลดปล่อยก๊าซเรือนกระจก เชื้อเพลิงชีวมวลที่จะนำมาใช้ในโครงการคือชานอ้อยและทางมะพร้าวเป็นชีวมวลที่เหลือจากกระบวนการผลิตเส้นใยและน้ำตาลของโรงงานที่มีอยู่ในพื้นที่ และทางมะพร้าวส่วนเป็นชีวมวลที่มีมากในแถบจังหวัดประจวบคีรีขันธ์และจังหวัดใกล้เคียง ซึ่งแต่เดิมนั้นไม่ได้มีการนำไปใช้ประโยชน์อย่างเป็นจริงเป็นจัง ทำให้มีการกองทิ้งไว้หรือเผาทิ้งเพื่อกำจัดทำให้เป็นสาเหตุของการเกิดมลพิษทางอากาศทั้งในพื้นที่และมีผลกระทบต่อสภาพภูมิอากาศโลก

ทางบริษัท ได้ตระหนักถึงความสำคัญของเรื่องดังกล่าว จึงได้วิเริ่มทำการพัฒนาโครงการนี้ผ่านกลไกการพัฒนาที่สะอาด หรือซีดีเอ็ม (CDM) ซึ่งเป็นโครงการจากทางสหประชาชาติซึ่งให้เงินทุนสนับสนุนการใช้พลังงานสะอาดตามจำนวนคาร์บอนเครดิต (CERs) หรือปริมาณก๊าซเรือนกระจกที่ลดได้จากการใช้เชื้อเพลิงชีวมวล อีกทั้งการดำเนินงานของโครงการนี้เป็นไปตามนโยบายของรัฐบาลที่ส่งเสริมให้ผู้ผลิตไฟฟ้าพลังงานหมุนเวียนขนาดเล็กมาเข้ามามีส่วนร่วมในการผลิตไฟฟ้า และส่งเสริมให้มีการใช้เทคโนโลยีที่หลากหลายในประเทศอย่างยั่งยืน นอกจากนี้ ทางบริษัทยังได้เล็งเห็นถึงประโยชน์ที่จะมีต่อชุมชนและเกษตรกรที่อยู่ในพื้นที่ใกล้เคียง จึงได้ตั้งใจที่จะพัฒนาโครงการซีดีเอ็มให้ไปสู่มาตรฐานระดับทองหรือโกลด์แสตนดาร์ด (Gold Standard) ซึ่งเป็นมาตรฐานที่มุ่งเน้นไปยังการพัฒนาอย่างยั่งยืนของสิ่งแวดล้อม ชุมชน การสร้างรายได้ และการลดการพึ่งพาเชื้อเพลิงจากต่างประเทศ

โครงการผลิตไฟฟ้าจากชีวมวลของบริษัท พลังงานสะอาดทับสะแก จำกัด สามารถนำไปสู่ประโยชน์สำหรับชุมชนในด้านต่างๆ ยกตัวอย่างเช่น

- เพิ่มมูลค่าและลดปริมาณเศษวัสดุเหลือใช้ในท้องถิ่น
- สนับสนุนการพัฒนาเทคโนโลยีกระบวนการเผาไหม้เชื้อเพลิงที่มีประสิทธิภาพ
- สนับสนุนการพัฒนาทักษะของบุคลากร
- สนับสนุนการการจ้างงานที่เพิ่มขึ้นและเศรษฐกิจหมุนเวียนในชุมชนรอบโครงการ และสร้างรายได้ให้กับคนในชุมชน
- สร้างความมั่นคงในด้านพลังงานไฟฟ้าให้แก่ชุมชนและบริเวณใกล้เคียง โดยการผลิตไฟฟ้าของประเทศเพิ่มขึ้น
- ลดการเกิดก๊าซเรือนกระจกที่ทำให้เกิดภาวะโลกร้อน ผ่านกลไกการพัฒนาที่สะอาด

GOLD STANDARD PASSPORT

1.3 Invitation Tracking Table

Category code	Organization	Name of Invitee	Means of Invitation	Date of Invitation	Confirmation received? Y/N
A	(villager)	(Mr.Atakorn Korncharoen)	post	12-Oct-10	Y
A	(villager)	Mr.Sampan Homchoen	post	12-Oct-10	Y
A	(villager)	(Mr. Sumet Suksri)	post	12-Oct-10	Y
A	(villager)	Ms. Kingkaew Suksri	post	12-Oct-10	Y
A	(villager)	Mr. Chaowalit Thodsanit	post	12-Oct-10	Y
A	(villager)	(Mr.WinuluckWejwimonratana)	post	12-Oct-10	Y
A	(villager)	(Ms. Ampha Sangkrachang)	post	12-Oct-10	Y
B	(Head of district)	((Mr. Parwet Rungrasamee	post	12-Oct-10	Y
B	(Vice Governor)	(Mr.Pisit Sunthareerat)	post	12-Oct-10	Y
B	(District Chief Officer)	(Mr.RujpratheepThamrapeepat)	post	12-Oct-10	Y
B	(Deputy Governor)	(Mr. Lertyod Yamprai)	post	12-Oct-10	Y
B	(Deputy Governor)	(Mr. Banjongsak Poethong)	post	12-Oct-10	Y
B	(Deputy Governor)	(Mr.Viroj Chukaew)	post	12-Oct-10	Y
B			post	12-Oct	Y

GOLD STANDARD PASSPORT

	(Deputy Governor)	(Mr. Thanet namoung)		Oct-10	
B	(Officer at Distirct Chief Officer)	(Mr. Jongkit Suwarat)	post	12-Oct-10	Y
B	(Industry Office of Prachuapkhririkhan)	( ) (Mr.Anand Faksang)	post	12-Oct-10	Y
B	(Provincial Electricity Authority of Prachuapkhririkhan)	( ) Mr. Sunthorn Nantanavanich	post	12-Oct-10	Y
C	(TGO) (Thailand Greenhouse Gas Management Organisation)	(Director of TGO)	Fax	12-Oct-10	Y
D	(Greenleaf Foundation)	Director or related officer	email	12-Oct-10	Y
D	(Energy of Environment Foundation)	Director or related officer	fax	12-Oct-10	Y
D	(The Energy Conservation Foundation of Thailand)	Director or related officer	fax	12-Oct-10	Y
D	(Thailand Environment Insitute)	Director or related officer	fax	12-Oct-10	Y
D, F	World Wildlife Fund	Director or related officer	fax	12-Oct-10	Y
D, F	( )	Related officer	fax	12-Oct-10	Y
D	(Thailand Coconut Farmers Association)	(Mr.Vanit Pakkingmuang) Manager of the Thailand Coconut Farmers Association	post	12-Oct-10	Y
E	Gold Standard	Ellen May Zanoria, South East Asia Regional Manager	email	12-Oct-10	Y
F	Appropriate Technology Association (ATA)	Chalermsri Dhamabutra or Poonsae Suanmuang	email	12-Oct-10	Y
F	Dhammanart Foundation	Khun Songklod Indhukarn	email	12-Oct-10	N
F	Renewable Energy Institute of Thailand, REIT	Ms. Wanun Permpibul	fax	12-	Y

				Oct-10	
F	Greenpeace International (Netherlands)	n/a	email	13-Oct-10	N
F	HELIO International	Helene O'Connor-Lajambe	email	13-Oct-10	N
F	Mercy Corps	Dorothy McIntosh	email	13-Oct-10	N
F	REEEP	Marianne Osterkorn	email	13-Oct-10	N
F	WWF International	Bella Roscher	email	13-Oct-10	N

The invitation list (in the format of invitation tracking table) includes all the categories suggested in the GS Toolkit. The individuals and organizations invited are local people in Tambon Huay Yang and Amphur Tabsakae as they are stakeholders who can be affected from the project rather than people from the other districts.

1.4 Text of individual invitations

The English text below demonstrates the content of individual invitation letter sent by post and fax.

Date: 12 October 2010

Topic: Invitation to a stakeholder meeting of Clean Energy Thapsakae Limited
Clean Energy One Biomass Power Plant Project

To……..

Attachment: (agenda, confirmation form and non-technical summary)

As the Clean Energy Thapsakae Limited is working on a biomass power plant project under the Clean Development Mechanism (CDM) which can help reducing greenhouse gas emission which leads to global warming and environmental isssues.

The company, in association with South Pole Carbon; therefore, is organizing a meeting to update on the project progress and obtain stakeholder's comments on the biomass power plant project on on 26 October 2010, 1.30-3.30 pm at Prachuapgardenview Resort 99/6 Moo 11, Amphermuang, Prachuapkhirikhan province, 77000.

The company realizes the importance of people in the surrounding communities and relevant organizations and would like to invite you to attend the meeting on the date and venue.

Yours faithfully,

Ms. Ladaporn Khunikakorn

GOLD STANDARD PASSPORT

Brief meeting agenda

- Explanation of the meeting objectives
- Giving an update on the project progress
- Explanation and discussion about assessment on sustainable development due to the project (SD Matrix) and any possible harmful impacts (Do-no-harm assessment)
- Open for the comments in those topics from the stakeholders who attend the meeting, including mitigation measures and monitoring plan (if any)

south pole

วันที่ 12 ตุลาคม พ.ศ. 2553

เรื่อง ขอเรียนเชิญเข้าร่วมการประชุมเพื่อประชาสัมพันธ์ความคืบหน้าและรับฟังความคิดเห็น เกี่ยวกับโครงการผลิตไฟฟ้าจากพลังงานชีวมวลของบริษัท พลังงานสะอาดทับสะแก จำกัด

เรียน ผู้อำนวยการมูลนิธิใบไม้เขียว

สิ่งที่ส่งมาด้วย กำหนดการและแบบตอบรับ

เนื่องจากบริษัท พลังงานสะอาดทับสะแก จำกัด กำลังดำเนินโครงการผลิตไฟฟ้าขนาดเล็กจากเชื้อเพลิงชีวมวล ภายใต้กลไกการพัฒนาที่สะอาด (CDM: Clean Development Mechanism) ซึ่งจะเป็นการช่วยลดการปล่อยก๊าซเรือนกระจกที่ทำให้โลกร้อนขึ้นสู่ชั้นบรรยากาศอีกทั้งยังช่วยลดปัญหาสิ่งแวดล้อม

บริษัท พลังงานสะอาดทับสะแก จำกัด ร่วมกับ บริษัท เซาท์โพล คาร์บอน แอสเซท แมเนจเมนท์ จำกัด จึงได้จัดงานประชุมขึ้นเพื่อประชาสัมพันธ์และรับฟังความคิดเห็นจากชุมชนและผู้ที่สนใจในโครงการผลิตไฟฟ้าจากเชื้อเพลิงชีวมวล ในวันอังคารที่ 26 ตุลาคม 2553 เวลา 13.30 – 15.30 น. ณ โรงแรมประจวบการ์เด้นวิวรีสอร์ท 99/6 หมู่ 11 ตำบลอ่าวน้อย อำเภอเมือง จังหวัดประจวบคีรีขันธ์ 77000

บริษัทฯ ได้ตระหนักถึงความสำคัญของการมีส่วนร่วมของประชาชนที่อยู่ในชุมชนใกล้เคียงกับโครงการและหน่วยงานต่างๆ ที่เกี่ยวข้อง จึงใคร่ขอเรียนเชิญท่านเข้าร่วมการประชุมใน วัน และ เวลาดังกล่าวนี้ จักขอบพระคุณเป็นอย่างสูง

ขอแสดงความนับถือ

(นางสาว [illegible])
ผู้ประสานงานโครงการ
12/10/10

การประชุมมีกำหนดการโดยย่อดังนี้

- อธิบายจุดประสงค์ของการประชุม
- รายงานความคืบหน้าของโครงการผลิตไฟฟ้าจากพลังงานชีวมวลของบริษัท พลังงานสะอาดทับสะแก จำกัด
- อธิบายเกี่ยวกับข้อมูลและหารือประเด็นที่เกี่ยวข้องกับการพัฒนาอย่างยั่งยืนในด้านต่างๆ ของโครงการ (SD Matrix) รวมทั้งความเสี่ยงที่อาจก่อให้เกิดผลกระทบที่อันตราย (Do-No-Harm Assessment)
- เปิดรับฟังความคิดเห็นในเรื่องดังกล่าวรวมทั้งเรื่องแนวทางแก้ไขผลกระทบและตรวจสอบ (ถ้ามี) จากผู้เข้าร่วมประชุม

South Pole Carbon Asset Management Ltd.
Zurich · Bangkok · Beijing · Hanoi · Istanbul · Jakarta · Johannesburg · Mexico City · New Delhi · Taipei
info@southpolecarbon.com · www.southpolecarbon.com

GOLD STANDARD PASSPORT

The English text below demonstrates the content of individual invitation letter sent by email (to e.g. NGO supporters and the GS).

[13]Dear Ms. Ellen May Zanoria,

Clean Energy Thapsakae Limited and South Pole Carbon (Thailand) Co.,Ltd are inviting you to attend a Stakeholder Feedback Round for "Clean Energy One Biomass Power Plant Project". The proposed CDM project is going to apply for Gold Standard and the meeting is to provide and update about project's progress and to obtain opinions from relevant stakeholders and surrounding communities.

To be fully in line with the GS rules and regulations we would like to invite the Gold Standard, local Gold Standard Supporters, NGOs and relevant organist ions to participate in the Local Stakeholder Consultation Meeting. Per local invitees' request, this meeting will be scheduled on 26 October 2010, 1.30-3.30 pm at Prachuapgardenview Resort 99/6 Moo 11, Amphermuang, Prachuapkhirikhan province, Thailand.

Agenda of the meeting:
Explanation of the objective of the meeting
Explanation of the project details and progress
Blind sustainable development exercise and Do-no-harm discussion
Open for comments from the stakeholders, including any mitigation actions or monitoring plan, if any

In case you could not attend the meeting and would like to provide opinions about the project or if you have any questions, please feel free to do so by replying back to this email.

Best regards,

Sara (Sasithorn K.)
Gold Standard Project Manager

South Pole Carbon (Thailand) Co.,Ltd.
Bangkok office

T +66 2 678 8979
E s.kittithumkul@southpolecarbon.com
W http://www.southpolecarbon.com

Zurich / Bangkok / Beijing / Hanoi / Istanbul / Jakarta / Johannesburg / Mexico / New Delhi / Taichung

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1.5 Text of public invitations

The English text below demonstrates the content of public invitation[14] on the notice boards at the Thapsakae District Office and the Prachuapkhirikhan Provincial Hall on the 12 October 2010.

As the Clean Energy Thapsakae is working on a biomass power plant project under the Clean Development Mechanism (CDM) which can help reducing greenhouse gas emission which leads to global warming and environmental isssues.

The company, in association with South Pole Carbon; therefore, is organizing a meeting to update on the project progress and obtain stakeholder's comments on the biomass power plant project on on 26 October 2010, 1.30-3.30 pm at Prachuapgardenview Resort 99/6 Moo 11, Amphermuang, Prachuapkhirikhan province, 77000.

The company realizes the importance of people in the surrounding communities and relevant organizations and would like to invite you to attend the meeting on the date and venue.

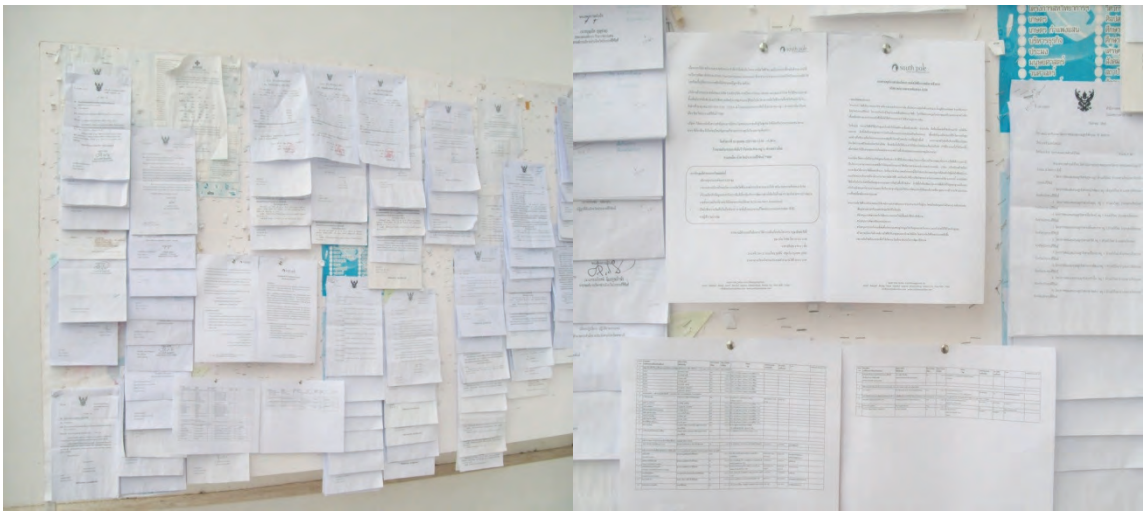
26 October 2010, 1.30-3.30 pm
at Prachuapgardenview Resort 99/6 Moo 11, Amphermuang,
Prachuapkhirikhan province, 77000.

Brief meeting agenda

- Explanation of the meeting objectives
- Giving an update on the project progress
- Explanation and discussion about assessment on sustainable development due to the project (SD Matrix) and any possible harmful impacts (Do-no-harm assessment)
- Open for the comments in those topics from the stakeholders who attend the meeting, including mitigation measures and monitoring plan (if any)

If you have any questions or would like to put comments on the project, please feel free to contact,
Khun Arin Kosol, Tel 02 651 5199
Sinthorn Tower 3, 24th Floor,
130-132 Wireless Road, Lumpini, Pathumwan, BKK, 10330
Please feel free to confirm you attendance at 02 651 5199

The public invitation on notice board at the Thapsakae District Office



The public invitation on the notice board at the Prachuapkhirikhan Provincial Hall

2. Consultation process

2.1 Participants in the physical meeting

2.1.1 List of participants

Participants List			
Date and time: 26 October 2010, 1:00 - 3:30 PM			
Location: Prachuapgardenview Resort 99/6 Moo 11, Amphermuang, Prachuapkhirikhan province, 77000.			
Organisation	**M/F**	**Name**	**Tel**
)villager)	M	(Mr.Atakorn Korncharoen)	084 539 8175
)villager)	M	(Mr. Sumet Suksri)	086 268 5756

)villager)	F	(Ms. Kingkaew Suksri)	087 027 7584
)villager)	M	(Mr.Chaowalit Thodsanit)	089 259 6103
)villager)	M	(Mr.Winuluck Wejwimonratana)	087 803 2529
)villager)	F	(Ms. Ampha Sangkrachang)	084 578 4545
)villager)	M	(Mr.Chaiyut Theeranuwat)	081 858 5800
)villager)	M	(Mr.Chakrit Chalatpat)	084 917 5996
)villager)	F	(Ms.Punnisa Yauyai)	081 791 7459
)villager)	M	(Mr. Vinai Chatchai)	081 0143285
)villager)	F	(Ms.Monwadee Channim)	083 310 3365
)villager)	M	(Mr.Pongsak Nuulek)	085 1900797
)villager)	M	(Mr.Suthep Chitcharoen)	084 316 1011
)villager)	M	(Mr.Chinakom Lothangchanintra)	081 925 7238
)villager)	M	(Mr.Panusak Suayngam)	089 897 2417
PP News Media	M	(Mr.Threepob Panrab)	n/a
(Deputy Governor)	M	(Mr. Lertyod Yamprai)	081 6200750
(Deputy Governor)	M	(Mr. Banjongsak Poethong)	087 996 5779
(Deputy Governor)	M	(Mr.Viroj Chukaew)	084 110 3173
(Deputy Governor)	M	(Mr. Thanet namoung)	081 754 7936
(Officer at Distirct Chief Officer)	M	(Mr. Jongkit Suwarat)	087 711 4405
(Industry Office of Prachuapkhririkhan)	M	(Mr.Anand Faksang)	081 447 4448
(Industry Office of Prachuapkhririkhan)	M	(Mr.Thawee Bunaumnuay)	089 844 5584
(Industry Office of Prachuapkhririkhan)	M	(Mr.Channarong Bunchum)	081 480 9349
(officer)	M		084 413 0721

		(Mr.Darong Wongchanthong)	
(officer)	M	(Mr.Sunthorn Worawanich)	084 909 6246
(Thailand Coconut Farmers Association)	M	(Mr.Sorachai Kumtrakul)	081 005 9858
(Thailand Coconut Farmers Association)	M	(Mr.Somchai Plithongkam)	084 165 3894

2.1.2 Evaluation Forms

Summary of Comments	
What is your impression of the meeting?	I have gain more understating about the project, very useful, we have gained more understandings about many aspects of the project.
What do you like about the project?	I like the fact that the project leads to additional employment, income as well as more skills for the local people and agricultural waste can be utilized. I like the project. I am satisfied with the project.
What do you not like about the project?	Nothing

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Example of an evaluation form

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1

แบบประเมินผลการประชุม

1. ท่านมีความคิดเห็นอย่างไรกับงานสัมมนา ในหัวข้อต่อไปนี้
เช่น ประชาชนให้ความสนใจมากน้อยแค่ไหน? ข้อมูลที่นำเสนอมีประโยชน์หรือไม่? หรือสิ่งที่ท่านประทับใจจากการสัมมนาครั้งนี้ โปรดแสดงความคิดเห็นของท่านได้ที่ด้านล่าง

ข้อมูลที่ได้ทำให้มีความรู้เพิ่มขึ้น มีประโยชน์ต่อประชาชน

2. ท่านรู้สึกพึงพอใจอะไรกับโครงการ

ต้องการให้ประชาชนมีความรู้เพิ่มขึ้น และมีรายได้ [illegible]

3. ท่านรู้สึกไม่พึงพอใจอะไรกับโครงการ

–

ลงชื่อ

[illegible]

(   )

2.2 Pictures from the meeting


2.3 Outcome of consultation process

2.3.1 Minutes of the meeting

The stakeholders registered and received the documents for the meeting: non-technical summary, agenda, SD matrix questionnaire and evaluation form.

South Pole introduced themselves and welcome the stakeholders as well as informing about the objective of the meeting, which are, to inform the project progress and to obtain feedback from the stakeholders regarding the project. After that the representative from South Pole explained about the agenda for today's meeting.

A representative from Clean Energy Thapsakae explained about the project description that the project is by Clean Energy Thapsakae and the objective of the project is to utilize biomass (coconut residue and coconut frond) to produce electricity, the project location and explained further about the motivation that lead to the project activity, which is the fact that they realized the way to reduce agricultural waste, utilize it and reduce environmental impacts. That was where the project came from. The representative also reported the project progress which is around 90% completed. The representative asked the stakeholders if they understand the project details. Nobody raised questions. South Pole asked the stakeholders again to confirm and added that they can ask about the project details at any time during the meeting.

South Pole explained about green house gas emission, global warming, renewable energy and how it was related to the project activity for the stakeholders to have more knowledge and understandings about those areas.

The meeting was preceded to the next session. South Pole introduced the session on discussion about do-no-harm assessment and SD matrix. South Pole explained that the objective of this exercise is to obtain the stakeholder's views on the impacts of the project in their opinions. Then South Pole explained about do-no-harm assessment and each indicator of SD matrix for the stakeholders including giving some examples so that they can have better understandings on the indicators and ask the stakeholders to check their understandings from time to time. Then the stakeholders were asked to think which indicators are important and score them. They are also free to provide their comments verbally.
After the stakeholders filled in the questionnaire and provided some comments. South Pole summarised the stakeholder's scores and opinions. The project owners responded to the

stakeholder's comments and questions. The stakeholder's comments and response are as below,

Question – as the province has had problem with water quantity used for agriculture so will the project uses the farmer's water sources? And will be any waste water discharge to agricultural land?

Answer – The project activity uses rain water, which is collected by a lagoon so the project does not pump any water from any surface or underground water sources. So the project will not have any impact on water quantity for agriculture of the local community. In addition, the project does not create much waste water and the waste water will be kept in another lagoon for evaporation. Therefore, there will not be any discharge of waste water to outside the project.

Question – Will the project hire local people to work?

Answer – the project will definitely consider hiring local people as first priority. The representative from Clean Energy Thapsakae emphasized that even himself is from Thapsakae, which can be seen clearly that the project already hires local people to work. The project will recruit people in accordance to their qualifications. The people who are currently work for the project and not local people are in the roles that need very specialized experience in starting up the plant on e.g. constructing power plants. Those people will also train the local people which will be later hired so that the local people will have more skills and knowledge.

Question – will there be too much dust from the project?

Answer – the project has installed a wet scrubber, which is a system to eliminate dust from biomass combustion process before the air goes onto the chimney opening. We have installed equipment which can monitor air quality as well to make sure that there is no impact to the environment. The wet scrubber normally operates 24 hours a day and there is no factor to deviate that as the cost to operate the wet scrubber is low because the electricity is from our own generation and the water is rain water. So it can be seen clearly that the system will be well managed.

Question – will there be any impact on soil?

Answer – Ash from the biomass combustion is useful to use as fertilizer. Some of the fertilizer that the local communities use are not suitable, e.g. from sea fish, which will make the soil too salty. But ash is more suitable to use as organic fertilizer. The project also plans to distribute the ash to the local farmers.

Question – what will be the noise level from the project activity?

Answer – the equipments used in the power plant was designed to be noise-insulated. Therefore, there will be any problem from noise.

Question – if there is not enough biomass, will there be any use of coal?

Answer – there will be definitely no use of coal as the power plant system was not designed to use coal at all. It was designed to use biomass in particular. The plant is happy for any local people to visit the site to check. Local authorities are also welcome to check the use of fuel as well.

The other questions are more generic and related to other areas apart from sustainable development e.g. How the utilization of biomass can reduce global warming? If we plan the trees to grow forest, will it be eligible for the CDM? Why developing countries need to reduce GHG emissions? Why don't only developed countries do it? For those questions, South Pole provided information so that the stakeholders can gain more knowledge in those areas.

Overall, the stakeholders were inquisitive and asked several questions as above. They also confirmed in the meeting that they like the project and want this project to happen.

From all the comments and the measures that the project owner explained, the stakeholders agreed with those measures and came to the conclusion that there should not be any negative impacts from the project.

South Pole therefore, started to discuss about positive impacts from stakeholders which are additional employment, more skills for local people, less import of fuel from the other countries, natural fertilizer from ash. The stakeholders did not provide any more detailed comments.

South Pole summarised all the comments including measures as above again and asked for the consensus. The stakeholders agreed. Topic on monitoring was brought up but there is no feedback or ideas from the stakeholders on monitoring sustainable development indicators.

The stakeholders then were asked to fill in the evaluation forms. South Pole informed further that there will be 2-month period of opening for comments, which will be around November until December. The revised project documents will be placed at e.g. the district office, at Clean Energy Thapsakae's plant and on South Pole's website. Contact details will be provided so that stakeholders can give any feedback on the project lateron.

South Pole and the project owner thanked the stakeholders for their time participating in the meeting and their comments. The meeting was closed.

3. Analysis of differences between own sustainable development assessment and the one resulting from the blind exercise with stakeholders. Explain way of consolidation.

As the points from stakeholder's comments from the blind exercise have already taken care of by the system design and measures that the project owner plans to do, which can be seen from the answers by the project owner to the stakeholders. Therefore, the SD matrix in this GS passport will not be different from the own sustainable development assessment.

In addition, from the feedback in the questionnaires (by considering the majority of the stakeholders), the result is that there is no negative score on sustainable development indicators.

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SECTION F. Outcome Sustainability assessment

F.1. 'Do no harm' Assessment

[See Toolkit 2.4.1 and Toolkit Annex H]

The Project has been analysed against the 11 Safeguarding Principles (SP) as listed in Annex H of the Toolkit; there are no principles deemed relevant for this project activity. A summary of such assessment is shown here below:

There are no additional relevant critical issues for the project type that have not already been address in this GS passport.

Safeguarding principles	Description of relevance to my 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 area before the project started, 50% was the project's coconut plantation area and another 50% was empty land. The project owner has checked with the Department of Public Works and Town & Country Planning (DPT) to ensure that the area is not under protection or any other restrictions[15]. Therefore, the Project does not cause any human rights abuse. Also, there are no indigenous people that would be affected by the proposed project activity.	Low	No need for low risk

	There is an extremely small risk of the Project breaching this safeguarding principle.		
2. The Project does not involve and is not complicit in involuntary resettlement.	This is not relevant for this project as no resettlement is needed. This is because the project is located in the area where it was coconut plantation and empty land[16].	Low	No need for low risk
3. The Project does not involve and is not complicit in the alteration, damage, or removal of any critical cultural heritage.	No cultural heritage is enclosed in the project boundary and therefore is not endangered by the project, referring to the fact that the project is located in the area where it was coconut plantation and empty land as well as there was a check with the Department of Public Works and Town & Country Planning (DPT) to ensure that the area is not under protection or any other restrictions[17].	Low	No need for low risk
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.	If the employees wish, they have the freedom of association, and their rights to collective bargaining are not restricted. The legal basis is the national law[18]. Therefore, the likelihood to breach this Safeguarding Principle is very low	Low	No need for low risk
5. The Project does not involve and is not	All staff is being employed according	Low	No need for low risk

complicit in any form of forced or compulsory labour.	to national labour legislation[19] and the project does not involve any forced or compulsory labour. Therefore, it is very unlikely that the project will breach this safeguarding principle.		
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 the relevant national regulation[20].	Low	No need for low risk
7. The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.	The project does not discriminate against individuals and employment of staffs is not based on gender, race, religion, sexual orientation or on any other basis. In Thailand, there is labour legislation that protects against some facets of this principle[21].	Low	No need for low risk
8. The Project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe and unhealthy work environments.	Thailand has clear regulations[22] on measures to ensure safety in workplace. Therefore, there is a small risk of the project activity will breach this safeguarding principles.	Low	No need for low risk
Environmental Protection			
9. The Project takes a precautionary approach in regard to environmental challenges and is not complicit in practices contrary to the precautionary principles.	As the project entails the utilisation of biomass residues the safeguarding principle is regarded as being relevant. However, the risk of	Low.	No need for low risk

	breaching this SP is low due to the fact that it applies for GS registration, where the following eligibility criteria needs to be satisfied: (1) The project is not making use of non-renewable biomass resources for power generation, (2) Only surplus biomass will be used in the project activity, (3) The Project does not entail growing energy crops in land that is currently in use for growing food crops, and (4) The Project is not making use of Genetically Modified Organisms. In addition, Thailand also endorsed the Rio Declaration on Environment and Development[23], which covers precautionary approach.		
10. The Project does not involve and is 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)	As the project boundary doesn't include natural habitats[24], the project activity will not result in conversion of critical natural habitats.	Low	No need for low risk

recognised as protected by traditional local communities.			
Anti-corruption			
11. The Project does not involve and is not complicit in corruption.	Thailand is a signatory of the Convention against Corruption[25]. The risk of project breaching this safeguarding principle is assessed as low.	Low	No need for low risk

F.2. Sustainable Development matrix

[See Toolkit 2.4.2 and Toolkit Annex I]

This table represents our own 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 mitigatio**	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

	n measure used to neutralise a score of '–'			impact: score 0 Positive impact: score '+'
Air quality			**Parameter: emission of NOx and SOx, dust** Air quality will be improved substantially compared to emission levels (SOx and NOx) related to fossil fuel combustion for producing electricity as the project activity will use biomass. Electricity generation in Thailand mainly based on natural gas and coal. In general, using coal for electricity generation emits more SO_x and NO_x compared with biomass[26]. From the assessment[27] of impact from dust, the power plant will have air pollution management system e.g. Wet Scrubber, and closed biomass conveyor system. From the positive impact in terms of SO_x and NO_x and a preventive measure for dust, the project activity; therefore, has a positive impact in regards to air quality.	+
Water quality and quantity			**Parameter: water pollutants and contamination to public water resources** Water quality and quantity from biomass power generation are the same in compared to baseline scenario. The water used in the project activity will be from rain water, kept in raw water lagoon within the project activity. The waste water from the activities within the project is not very much. It will be either kept in another lagoon for evaporation or recycled for further utilisation[28]. Therefore, there will be no release of pollutants and changes in water balance in ground and surface water. The score for this indicator is neutral.	0
Soil condition			**Parameter: organic matter content**	+

			The ash generated by the project activity can be used as soil amendment[29]. The fertilizer that mainly consists of ash from the power plant enriches the soil and contributes to organic farming practices, which shall further improve soil conditions as compared to conventional practices. Hence, the project shall result in an improvement of the soil characteristics on the region. Compared with the baseline, the project activity; therefore, contributes to a positive impact on soil condition due to ash from biomass combustion.	
Other pollutants			**Parameter: level of noise** Referring to IEE[30], Noise level during construction: From the assessment, the noise level during construction did not have a negative impact as the project has installed temporary metal wall on the construction site to make sure that the noise level was reduced[31] to the same noise level in compared to the baseline. Noise level during operation[32]: From the assessment, the noise level during operation does not result in an impact compared to the baseline. Therefore, there is no negative impact. In summary, the total score for this indicator is 0.	0
Biodiversity			**Parameter: number of threatened plants and animals** There is no significant change to the livelihood of plants or animals before or after the project. Since the project uses only abundant and locally available biomass residues[33], there is no danger of biodiversity loss through unsustainable biomass use.	0
Quality of employment			**Parameter: Training records and safety equipments**	+

			The additional employment will include training in regards to operating the power plant as well as safety[34]. This will result in more skilled staff compared with the baseline. For training to operate the power plant, on the first 2 years of the operation, the experts in power plant (from the technical provider) are contracted to operate the power plant themselves first but eventually there will be training for the permanent employees (of the project proponent) to operate the plant. In addition, referring to IEE[35], the project owner will provide safety equipments in order to ensure employee's safety during project implementation.	
Livelihood of the poor			**Parameter: poverty alleviation** Compared to the baseline, the project will generate income through additional employment[36]. 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 improve the livelihood of the poor in general. In addition, even though the farmers can have additional income from selling biomass, the effect is not directly shown in terms of livelihood of the poor (e.g. poverty alleviation, number of people living under poverty line, access to health care service) Therefore, the score is neutral.	0
Access to affordable and clean energy services			**Parameter: Change in energy use** There is no change in energy use due to the project activity. The surrounding communities still can access and use the electricity from the existing grid, which is the same as the one that the project activity will feed the (biomass) electricity to[37]. Therefore, there is no change in affordability of electricity service. In addition, considering the project scale, there should not have a clear affect in terms of reducing depending of fuel imports. In short, the impact on this indicator is neutral.	0

Human and institutional capacity			**Parameter: 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 qualifications[38], not gender; therefore it does not affect the livelihood and education for women in particular.	0
Quantitative employment and income generation			**Parameter: number of jobs and income from employment** The project creates additional jobs and income for the new employees[39]. The impact on this indicator therefore is positive. The additional jobs will be, for example, plant manager, power plant operators, HR, Accountants, Administration staff[40].	+
Balance of payments and investment			**Parameter: net foreign savings** The project activity leads to reduction in fossil fuel consumption for electricity generation. The fossil fuel for electricity generation in Thailand normally is imported[41]. However, although the project seems to have an impact on net foreign currency savings, it is small at the wide-economy level. A neutral score is chosen for an accurate assessment of this indicator.	0
Technology transfer and technological self-reliance			**Parameter: 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, this indicator is scored 0.	0
Justification choices, data source and provision of references				
Air quality	Reference: Standard of Air Pollution from Power Plant, B.E. 2547 (2004) – for SOx and NOx from coal, http://www.diw.go.th/diw/law50/air/A7.pdf , Ministry of Industry, that coal power plants cannot emit more than 320-1,300 ppm of SOx and 500 ppm of NOx while the standard for biomass power plant is 60 ppm (for SOx) and 200 ppm (for NOx), and the study 'Emission Assessment of Rick Husk Combustion for Power Production, http://www.waset.org/journals/waset/v53/v53-175.pdf			

	IEE, Chapter 5 (Environmental Impact Assessment), section 5.2.3 (Impact on Air Quality)
Water quality and quantity	IEE Chapter 5 (Environmental Impact Assessment), section 5.2.4 (quality of surface water), 5.2.5 (quality of ground water), 5.4.2 (water usage)
Soil condition	Referring to 'Utilization of Ashes from Biomass Combustion and Gasification', published at 14th European Biomass conference & Exhibition, 2005, http://www.ecn.nl/docs/library/report/2005/rx05182.pdf
Other pollutants	IEE Chapter 5 (Environmental Impact Assessment), section 5.2.6 (Impact on Noise Level) Referring to the Announcement from Ministry of Industry in regards to Noise Level Standard for factories (http://www2.diw.go.th/PIC/download/air/A9.pdf) or http://www.pcd.go.th/info_serv/reg_std_airsnd04.html)
Biodiversity	Referring to the IEE Chapter 2 (Project Detail), section 2.2.1 (Amount and Sufficiency of Biomass)
Quality of employment	Referring to IEE Chapter 2 (Project Detail), section 2.9 (Health and Safety at Work) and Chapter 5 (Environmental Impact Assessment), section 5.5 Impact on Living Conditions (social, economic, health and safety)
Livelihood of the poor	Referring to IEE Chapter 5 (Environmental Impact Assessment), section 5.5.1 (Impact on Social and Economic Aspects)
Access to affordable and clean energy services	Referring to IEE Chapter 2 (Project Detail), section 2.3.1 (Electricity)
Human and institutional capacity	Referring to IEE Chapter 5 (Environmental Impact Assessment), section 5.5.1 (Impact on Social and Economic Aspects)
Quantitative employment and income generation	Referring to IEE Chapter 5 (Environmental Impact Assessment), section 5.5.1 (Impact on Social and Economic Aspects)

Balance of payments and investment	Referring to table 2 (Thailand Energy Balance 2009) on page XIV (please find imported crude oil, coal), and VI (chart – fuel consumption for electric generation) Thailand Energy Statistics 2009, by Department of Alternative Energy Department and Efficiency (DEDE), Ministry of Energy http://www.dede.go.th/dede/fileadmin/usr/wpd/static/stat53/Thai_En_Stat_2009%28preliminary%29.pdf
Technology transfer and technological self-reliance	Referring to IEE Chapter 2 (Project Detail), section 2.9 (Health and Safety at Work) and Chapter 5 (Environmental Impact Assessment), section 5.5 Impact on Living Conditions (social, economic, health and safety)

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SECTION G. Sustainability Monitoring Plan

[See Toolkit 2.4.3 and Toolkit Annex I]

No		1
Indicator		Use of surplus biomass and renewable fuels (GS eligibility criteria)
Mitigation measure		n/a
Chosen parameter		Type of fuel use, quantity and sources
Current situation of parameter		Refer to baseline situation
Estimation of baseline situation of parameter		In the absence of the Project, the biomass residues would have been left to decay anaerobically or burnt in open fields. Therefore they are considered as surplus to requirements.
Future target for parameter		The biomass residues are purchased from the local population and are then utilise for the purpose of power generation. It shall be ensured that the Project is making use of fuel(s) that satisfied the following conditions: (1) the fuel(s) is regarded as 'renewable biomass resource(s)', (2) is a 'surplus biomass', (3) is not energy crops that have been grown in land previously used for growing food crops.
Way of monitoring	How	Type of fuel use – monitor if the project activity uses coconut residues or coconut frond Quantity ($^{42}BF_{k,y}$) - The parameter by type of biomass will be measured continuously using the weighbridge installed at the project activity. The amount of biomass combusted will be given by the difference between the amount of biomass received and the amount left in the storage yard. The data will be collected continuously and reported in the monthly report. The monthly report will be the basis for obtaining this data. The biomass consumption will be compared with the total amount of (coconut) biomass[43] in Prachuapkhirikhan Province to demonstrate that the project activity uses surplus biomass. Sources – monitor sources of biomass used in the project activity
	When	Type of fuel used – review once per verification period Quantity – monthly (report) Sources – review plant biomass purchasing record, once per verification period
	By who	

		Project owner

No		2
Indicator		Air Quality
Mitigation measure		n/a
Chosen parameter		Air pollutants such as SOx and NOx
Current situation of parameter		Refer to baseline situation
Estimation of baseline situation of parameter		Electricity generation in Thailand mainly based on natural gas and coal. In general, using coal for electricity generation emits more SOx and NOx compared with biomass. This is reflected from the Standard of Air Pollution from Power Plant[44]
Future target for parameter		SOx and NOx emission is reduced compared to the baseline situation which the (Thailand) electricity generators use fossil fuel (coal and fuel oil).
Way of monitoring	How	Monitor emissions of SO_2 and NO_x from the chimney of the boiler within the power plant
	When	the equipment will work on the continuous basis
	By who	Project owner

No	3
Indicator	Air quality (particulate matter)
Mitigation measure	The dust from the power plant will be controlled by Wet Scrubber.
Chosen parameter	Particulate matter (dust)
Current situation of parameter	Refer to baseline situation

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Estimation of baseline situation of parameter		No dust as it is a Greenfield project
Future target for parameter		The dust is controlled as per mitigation measure to meet Thailand standard requirements.
Way of monitoring	How	Monitor particulate matter from the chimney of the boiler within the power plant by using equipment installed at the chimney.
	When	Particulate matter will be measured on continuous basis.
	By who	project owner

No		4
Indicator		Soil condition
Mitigation measure		n/a
Chosen parameter		Amount of ash distributed to local people
Current situation of parameter		Refer to the baseline situation
Estimation of baseline situation of parameter		The soil condition[45] of the province in general. There is no ash given to the local people yet.
Future target for parameter		The soil condition is enriched by the ash from biomass combustion[46]. The improvement in soil condition is directly related to the amount of ash distributed to the local people in the surrounding community to use for their agricultural activity.
Way of monitoring	How	The impact can be measured indirectly by monitoring the amount of ash distributed to the local people from the plant records.
	When	Periodically
	By who	Project proponent

No	5
Indicator	Noise level (during operation) as part of the IEE's monitoring plan
Mitigation measure	
Chosen parameter	Noise level
Current situation of parameter	Refer to the baseline situation
Estimation of baseline situation of parameter	No noise from the operation
Future target for parameter	The noise operation is within the Thai standard regulation.

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		From the IEE, the noise during the operation does not exceed the standard. However, the monitoring plan is part of the IEE to ensure that the project activity will not lead to negative impact on noise.
Way of monitoring	How	Measure noise
	When	At least once a year
	By who	The third party hired by the project owner

No		6
Indicator		Quality of employment
Mitigation measure		n/a
Chosen parameter		Training record and the use of safety equipments
Current situation of parameter		Refer to the baseline situation
Estimation of baseline situation of parameter		No training record and the use of safety equipments, as for the baseline, the project has no additional employment due to the biomass power plant
Future target for parameter		Training records in relation to training of operating and maintaining the power plant as well as safety. The use of safety equipments to ensure that the employees working under safe conditions.
Way of monitoring	How	Archive training records Site visit to review the use of safety equipments
	When	Training records - after each training Site visit to review the use of safety equipments – once per verification period
	By who	Project owner

No	7
Indicator	Quantitative employment and income generation
Mitigation measure	n/a
Chosen parameter	The number of employees due to the project activity and their incomes
Current situation of parameter	Refer to the baseline situation

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Estimation of baseline situation of parameter		No new employment and income due to the project activity
Future target for parameter		additional employment and income due to the project activity
Way of monitoring	How	Doing Human Resource record on additional employment and income
	When	Periodically depending on when they recruit new employees
	By who	Project owner

Additional remarks monitoring

NA.

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

H.1. Additionality

[See Toolkit 2.3]

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In line with the requirement from the Gold Standard, the additionality of the project activity has been demonstrated using the "Tool for demonstration and assessment of additionality"[47]. A step-wise approach is used to demonstrate and assess additionality:

1) Identification of alternatives to the project activity;
2) Investment analysis;
3) Barrier analysis; and
4) Common practice analysis

Step 1: ***Identification of alternatives to the project activity consistent with current laws and regulations***

Define realistic and credible alternatives scenario to the project activity through the following Sub-steps:

Sub-step 1a: Define alternatives to the project activity:

The project activity is the first of its kind project implemented by the project proponent with the intention to invest in the renewable energy based power generation technologies. The project owner does not have other type (for eg fossil fuel based) power generation technologies existing or in the future. Therefore, the only alternatives available to the project proponent are as follows:

1) The proposed project activity undertaken without being registered as a CDM project activity
2) The proposed project activity undertaken registered as a CDM project activity

Sub-step 1b: Consistency with mandatory laws and regulations:
The above mentioned alternatives are fully in compliance with mandatory laws and regulations in Thailand.

Step 2: Investment analysis

To conduct the investment analysis, use the following Sub-steps:

Sub-step 2b: Option III. Apply benchmark analysis
The investment analysis has been conducted using the benchmark analysis as the project activity generates revenues from selling of power in addition to the CDM related income. The financial indicator chosen is the project IRR.

Sub-step 2c: Calculation and comparison of financial indicators
The project activity entails an investment of 639.6 million THB. The investment analysis has been done over a period of 20 years consistent with the project's operational lifetime. The input values have been sourced from the project's feasibility study[48] and all the supportive documents will be provided to the DOE for validation.

The following table outlines the key input parameters used in the investment analysis:

Cost	Unit	in millions

Total investment	THB	639.626
Debt	%	62.54%
Equity	%	37.46%
Labor cost	THB	12
Administrative expenses	THB	5
O&M *-Regular*	THB	4
-Major (every 6 years)	THB	6
Escalation	%	5%
AES O&M Cost	% of revenues	0.02
Energy fund	THB/kWh	0.01
Depreciation (straight line)		
Building and construction (20 years)	THB/yr	3
Machinery & others (10 years)	THB/yr	51.79
Tax		
Year 01 – Year 08		0%
Year 09 onwards		30%

The project activity has an installed capacity of 9400 kW, of which 8000 kW will be used to export electricity to the national grid and 500kW to the neighbouring fiber plant. The revenues from export are as per the tariff mentioned below:

Tariff	**Unit**	**Rate**	**Escalation**	
Peak	THB/kWh	2.9278	5%	Every 6 years
Off-peak	THB/kWh	1.1154	5%	Every 6 years
FT	THB/kWh	0.6865	3%	per annum
Adder	THB/kWh	0.3		
PEA Operating cost	of kWh dispatched	2%		Deduction
Fiber plant	THB/kWh	2.4	3%	per annum

In line with the guidance available in "Guideline on the assessment of investment analysis" (Annex 58, EB51), depreciation has been added back to the net profits. The result of this analysis is a post tax project IRR 11.08% which is not attractive enough to be viable under the business-as-usual scenario. The benchmark is referred from the two indicative rates associated with power generation in Thailand. The study by NEPO (The National Energy Policy Office) of Thailand and Black & Veatch[49] outlines the acceptable IRR hurdle rate as 23% and projects with IRRs below this rate are not deemed as financially viability and attractive. This study however dates back to 2001 and therefore we also refer to a more recent rate sourced from "IPP Bidding" by Ayudhya Securities Public Company Limited, which cites the benchmark of 15% for an Independent Power Producer (IPP)[50]. The 15% benchmark is chosen as bother realistic and conservative. In the light of the above, the project activity (project IRR – 11.08%) is clearly not financially attractive compared to the benchmark (15%).

Sub-step 2d: Sensitivity analysis

The robustness check of the analysis has been carried out by a sensitivity analysis of the

parameters subjected to reasonable variation (±10%).

Variable	-10%	-5%	0%	5%	10%
Total cost	12.95%	11.98%	11.08%	10.26%	9.50%
O&M cost	11.18%	11.13%	11.08%	11.03%	10.99%
Power output	7.29%	9.27%	11.08%	12.78%	14.39%

The reduction in Total cost and O & M cost by 10% and an increase in power output by 10% does not result in a project IRR which crosses the benchmark. Therefore, this further strengthens the assumptions made above and clearly demonstrates that the project activity is not viable under business-as-usual.

Outcome of Step 2: After the sensitivity analysis it is concluded that the proposed project activity is not financially attractive. In line with the "Tool for demonstration and assessment of additionality" we can proceed to Step 4 (Common practice analysis)

Step 4: Common practice analysis

Sub-step 4a: Analyse other activities similar to the proposed project activity:
There are currently several biomasses fired power plants in Thailand in operation; however, none of them use coconut residue as a primary source of fuel. The following table illustrates the proportion of renewable energy used for VSPP or "Very Small Power Producer" scheme in Thailand.

Thailand Renewable Energy as of September 2009

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	Type of fuel/Technology	Amount of electricity sell to system		
		Amount	Install capacity(MW)	Amount of electricity sell to the grid (MW)
Renewable Energy				
1	**Solar Panel**	**46**	**6.685**	**6.575**
2	**Biogas**	**27**	**30.242**	**23.083**
3	**Biomass**	**50**	**691.201**	**263.835**
	Palmoil residue	1	12.000	8.500
	Jatropha residue	0	-	-
	bagass	28	521.800	156.300
	bagass+rice husk	1	39.400	8.000
	rice husk	11	61.425	51.400
	rice husk + woodchip	2	17.300	14.500
	rice husk+ corn husk	0	-	-
	sawdust	1	0.600	0.600
	coconut residue	0	-	-
	corn residue	1	0.160	0.135
	corn residue+rice husk	0	-	-
	EFB	4	26.516	18.200
	bark	0	-	-
	hay	0	-	-
	tapioca	0	-	-
	woodchip	1	12.000	6.200
4	**waste**	**4**	**5.620**	**5.100**
5	**hydropower**	**3**	**0.560**	**0.540**
6	**wind**	**2**	**0.330**	**0.330**
7	**used vegetable oil**	**0**	-	-
	Total	**132**	**734.638**	**299.463**

*Coconut residue
Source: www.eppo.go.th/power/data/status-VSPP-sep-2009.xls

Sub-step 4b: Discuss any similar Options that are occurring:

As can be seen from the table above, Thailand now has a total of 734.638 MW of installed capacity through renewable energy and 299.463 MW of this has been fed to the national grid system from solar, biogas, biomass, landfill, hydro, wind and cooked oil. However, from this capacity no power has been generated from coconut residues. The implementation of proposed project activity will increase the technology and knowledge awareness of coconut residue based power generation systems. It will further help in utilisation of the coconut residues in energy generation which would have been left to decay in the absence of the project activity.

It is therefore clear that the project activity is not a common practice and is additional.

Demonstration and assessment of Prior Consideration of the CDM

The following table gives an overview of the timeline of key milestones in the project implementation clearly showing CDM consideration.

Date	Event
17/6/2008	Project feasibility study including CDM consideration

29/8/2008	Announcement of the project with CDM acknowledged content[51]
7/10/2008	Communication from SCB Quant Asset Management Co Ltd[52] with South Pole Carbon Asset Management
20/12/2008	Civil engineering work start = Project start date
1/12/2008	MoUwith South Pole Carbon Asset Management
27/01/2009	Submission of the Letter of Intent to Thai DNA
18/03/2009	Financial closure of the project (Paid up capital)
02/04/2009	Submission of the Letter of Intent to the UNFCCC
10/04/2009	ERPA signed between project owner and Swiss Carbon Assets Ltd
25/08/2009	Stakeholder consultation meeting
08/01 – 06/02' 2010	PDD webhosted on the UNFCCC website

Conclusion

It is clear that the carbon credits revenues play a significant role in the financial viability of the project and that the project owner would not have invested in such a project without the consideration of carbon credits revenues. The above timeline shows that CDM has been considered since the early stages of project implementation and has played an important role in the decision making to go ahead with the project. Furthermore, the project activity contributes in the mitigation of Global Warming by using a renewable biomass. The additional revenues from CDM will therefore help in rapid propagation of such projects which otherwise would not happen.

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 declaration

[See Toolkit Annex D]

Project financing for this project activity will not use Official Development Assistance (ODA) Funds as defined in the Gold Standard Toolkit. There are no loans or grants being provided by International Finance Institutions, which include ODA.

GOLD STANDARD PASSPORT

CLEAN ENERGY
THAPSAKAE

Ref: Clean Energy One Biomass Power Plant Project (300548) **July 19th 2010**

To: Gold Standard Foundation

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

Clean Energy Thapsakae Limited
As Project Owner of the above-referenced project, acting on behalf of all project participants, I now make the following representations:

Mr. Chaiyut Teeranuwat and Mr. Suthat Suepwong
I hereby declare that I am duly and fully authorised by the project owner 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. 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.

III. 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: _____
Name: Mr. Chaiyut Teeranuwat and Mr. Suthat Suepwong
Title: Director
On behalf of: Clean Energy Thapsakae Limited

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Clean Energy Thapsakae Limited

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