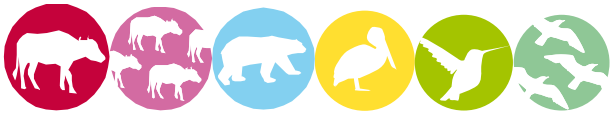
ANNEX R – PASSPORT TEMPLATE

CONTENTS



SECTION A. Project Title

[See Toolkit 1.6]

Title: Project Ulubelu Unit 3 - 4 PT. Pertamina Geothermal Energy

Date: 08/27/2013

Version no.: 01.0

SECTION B. Project description

[See Toolkit 1.6]

General Description of project activity

Estimated project start date:

06/05/2010 (Date of work order signed by Ulubelu project manager to commence drilling for UBL #18, the first well dedicated for Ulubelu II[1])

The Project Ulubelu Unit 3 – 4 PT. Pertamina Geothermal Energy (hereafter, the Project) developed by PT. Pertamina Geothermal Energy (PGE), hereafter referred to as the Project Developer, is a geothermal power plant in Lampung, Indonesia (hereafter referred to as the "Host Country"). The Project's net installed capacity is 2 x 55 MW[2], while its total gross power output installed capacity will be 2 x 58 MW. An estimated power generation of 867 GWh per annum (based on the predicted load factor of 90% multiplied with the net installed capacity) will be supplied to the grid operator.

The key purpose of the project is to utilize the geothermal resources of the mountain areas surrounding Ulubelu to generate electricity to be transmitted to the Sumatera Interconnected grid (hereafter referred to as the Grid) through the Perusahaan Listrik Negara (PLN, state-owned electricity company) interconnection point in the Ulubelu geothermal project area.

The Ulubelu geothermal field is developed and operated by PGE as per government concession regulation and consists of production and injection wells. The Ulubelu geothermal field will supply steam to the 110 MW Ulubelu I power plant3 (units 1 and 2, owned by PLN) and the Project, which is Ulubelu
II power plant, (officially known as Ulubelu unit 3 and 4, owned by the Project Developer). Ulubelu I and
Ulubelu II geothermal power plants are considered two different power plants that are owned and operated by different entities. In addition to that, both power plants will not share same steam wells and steam header during their operational time.

The project is contributing to sustainable development of the Host Country[3]. Specifically, the project:

[1] PGE Work Order signing date for UBL #18

[2] As per technical specification documentation that was sent to PLN in October 2010, 2 x 58 MW is Ulubelu's power output or total gross installed capacity as per turbine's nameplate. While 2 x 55 MW is the net installed capacity, which the project developer used in the Power Purchase Agreement with PLN dated on 11 March 2011. The difference between power output or total installed capacity and net installed capacity, which is 2 x 3 MW, will be covering power plant auxiliaries (referred also as the project developer's internal consumption).

[3] Sustainable Development criteria defined by the National Commission on Climate Change (representative of Indonesian DNA)

- Increasing community development and corporate social responsibility at Ulubelu geothermal field, as this project shows great improvement to existing geothermal field operation (social sustainability).
- Enhances the local investment environment and therefore improves the local economy, increases employment opportunities as 30 – 40 persons will be permanently employed for the project activity operation, another 40 persons will be employed for the Ulubelu geothermal field, and the construction of the project provides employment in the construction sector (economic sustainability).
- Diversifies the sources of electricity generation, which is important for meeting growing energy demands and facilitates the transition away from diesel and coal-supplied electricity generation (environmental sustainability).
- Makes greater use of geothermal renewable energy generation resources for sustainable energy production with leading local contractor (technology sustainability).

Technology

The Project uses well-established geothermal power plant technology for electricity generation and transmission, with total gross power output of 2 x 58 MW and net installed capacity of 2 x 55 MW. The project consists of a geothermal power plant with a steam turbine generator, gas extraction system, switchyard and utility system. The steam for the project will be provided by active geothermal wells from the Ulubelu geothermal field, with condensate re-injection wells to maintain groundwater supply. The main technical parameters of the proposed project are shown in Table 1.

Table 1 – Main technical parameters of the proposed project

Variable	Value	Source
Turbine generator capacity (MW)	2 x 58	Power plant technical specification as sent to PLN, page D-25
Net installed capacity (MW)	2 x 55	Feasibility Study Report, page 9
Operating time yearly (hours)	7884 (8760 x 90%)	Calculated based on 90% load factor as per Feasibility Study Report, page 9
Expected annual power generation / effective supply to the grid (MWh)	867,240	Feasibility Study Report, page 9

The Project will utilize state of the art but known technology in electricity generation and transmission. The geothermal steam turbine generator systems and other equipment e.g. cooling system must be imported. All supporting equipments used in the Project are produced domestically, whereby the project developer is experienced in handling and operating equipment of this nature.

http://pasarkarbon.dnpi.go.id/web/index.php/dnacdm/cat/5/sustainable-development-criteria-.html

Steam collected from the Ulubelu geothermal field is sent to the Ulubelu II power plant, where it is separated from condensate and fed into steam turbine generator systems (direct steam expansion). Returning condensate from the turbine and steam separator is then collected and re-injected back into the geothermal field area. Electricity produced is sold to PLN.

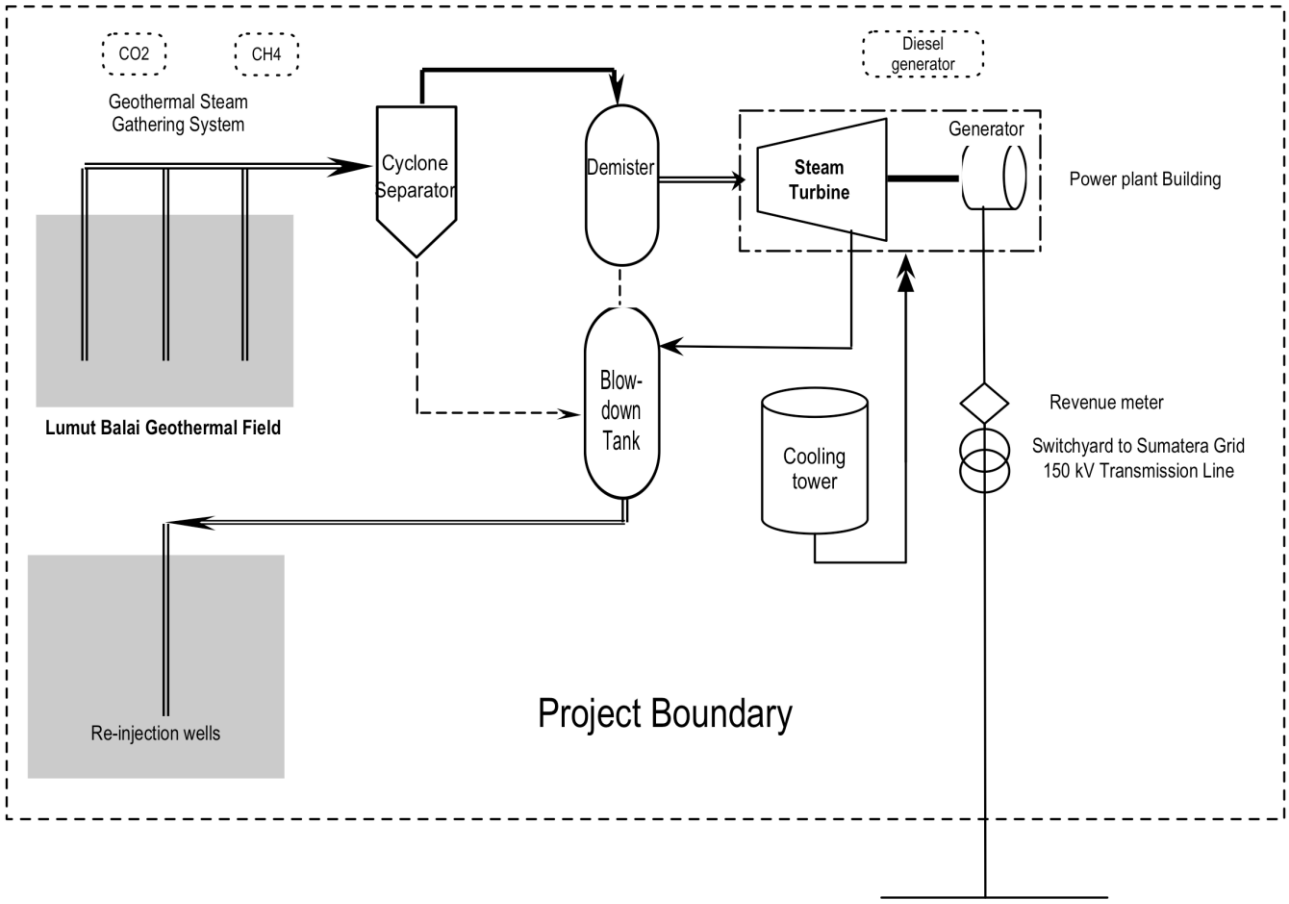


Figure 1 – Ulubelu Geothermal Area (wells and power plant)

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]

Republic of Indonesia

C.3. Project Type

[See Toolkit 1.2.c and 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?	☐	☑
Does your project activity classify as waste handling and disposal project?	☐	☑

Please justify the eligibility of your project activity:

The project is the generation and delivery of energy services in terms of electricity from non-fossil fuel energy sources to the grid. Hence, this project is categorized as the renewable energy supply category and met one of the Eligible Project Type as per Gold Standard Annex C – Guidance on Project Type Eligibility.

Pre Announcement	Yes	No
Was your project previously announced?	☐	☑
Explain your statement on pre announcement Explain that there has been no previous announcement of the project going ahead without the CDM, prior to any payment being made for the implementation of the project as mentioned in the following table.		

PT. Pertamina Geothermal Energy (PGE) is a subsidiary to PT. Pertamina (Persero), incorporated in December 2006 as a spin off from Pertamina Upstream Division. Its core business is geothermal steam exploration and production (E&P), and therefore selling geothermal steam to power plant owners currently in 2 major areas and 1 minor area.

The following shows the timeline of historical work on the site, pre-project activity, and project development:

Activity	Date	Remarks
FS report for steam production and sales	March 2007	Internal Pre-FS document
PGE and PLN agreement facilitated by the National Development of Planning Agency (BAPPENAS)	13 July 2009	Signed Minutes of Meeting (MoM) describes PGE and PLN common interest to develop several geothermal fields in Indonesia
FS report for power plant development **(electricity generation and** sales to the Grid)	September 2009	Total investment = USD 270.95 million **(expected electricity price = USD 90/MWh)**
PGE Board of Directors and Board of Commissioners agreed to develop Ulubelu II as total project	21 January 2010	Minutes of Meeting describes Board of Directors and Board of Commissioners decision to develop Ulubelu II geothermal power plant
Head of Agreement (HoA) between PGE & PLN (for eight geothermal areas)	17 February 2010	Steam sales = Ulubelu I, Lahendong IV, Hululais, Kotamobagu I-II, Sungaipenuh Electricity sales = Ulubelu II, Karaha, Kamojang, Lahendong V, Lumutbalai I-II
Contract for wells drilling works	8 April 2010	Umbrella contract to drill steam well is signed between PGE and Pertamina Drilling Services Indonesia (PDSI) to cover 7 wells dedicated for Ulubelu II.
Work order submitted to the drilling company (PDSI) for UBL #18	6 May 2010	Work order signed by Ulubelu project manager to commence drilling for UBL #18
Construction work, start geothermal wells drilling dedicated for Ulubelu II (UBL #18)	8 May 2010	PGE internal reports: list of drilled wells at Ulubelu geothermal field
CDM Prior consideration sent to the Indonesian DNA	30 August 2010	Prior consideration published in the Indonesian DNA website as following: http://pasarkarbon.dnpi.go.id/web/index.php/komnasmpb/cat/4/database/2.html
Confirmation of CDM prior consideration from the	4 September 2010	Letter to President Director of PGE from the Indonesian DNA regarding CDM prior consideration

Indonesian DNA		
CDM Prior consideration sent to UNFCCC	16 September 2010	Prior consideration published in the UNFCCC website on 12 October 2010: http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html
Environmental Impact Assessment / EIA report	20 October 2010	Approval by Lampung province environmental agency
PPA signed with PLN	11 March 2011	Price = USD 7.53 cent / kWh (30 years from COD)
ERPA signing with South Pole Carbon Asset Management Ltd.	March 2011	Signed ERPA between PGE and South Pole CAM Ltd.
Power plant construction start	May 2012	PGE project planning as per Feasibility Study Report, page 8
Power plant operation start	1 January 2014	This is commercial operation for Ulubelu II, when both unit #3 and #4 are in operation, PGE project planning as per Feasibility Study Report, page 8

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	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 project activity
dd/mm/yyyy:__06/05/2010_____

SECTION D. Unique project identification

D.1. GPS-coordinates of project location

[See Toolkit 1.6]

	Coordinates
Latitude	5°18'17"S
Longitude	104°34'41"E

☐

Explain given coordinates

Ulubelu II geothermal power plant is located approximately 100 km east of Bandar Lampung, the capital of Lampung province.

City/Town : Ulubelu,Tanggamus district

Province : Lampung Province

The exact location of the geothermal power plant is defined using GPS coordinates -5.30500 South, 104.57841 East or 5°18'17"South and 104°34'41"East.

D.2. Map

[See Toolkit 1.6]

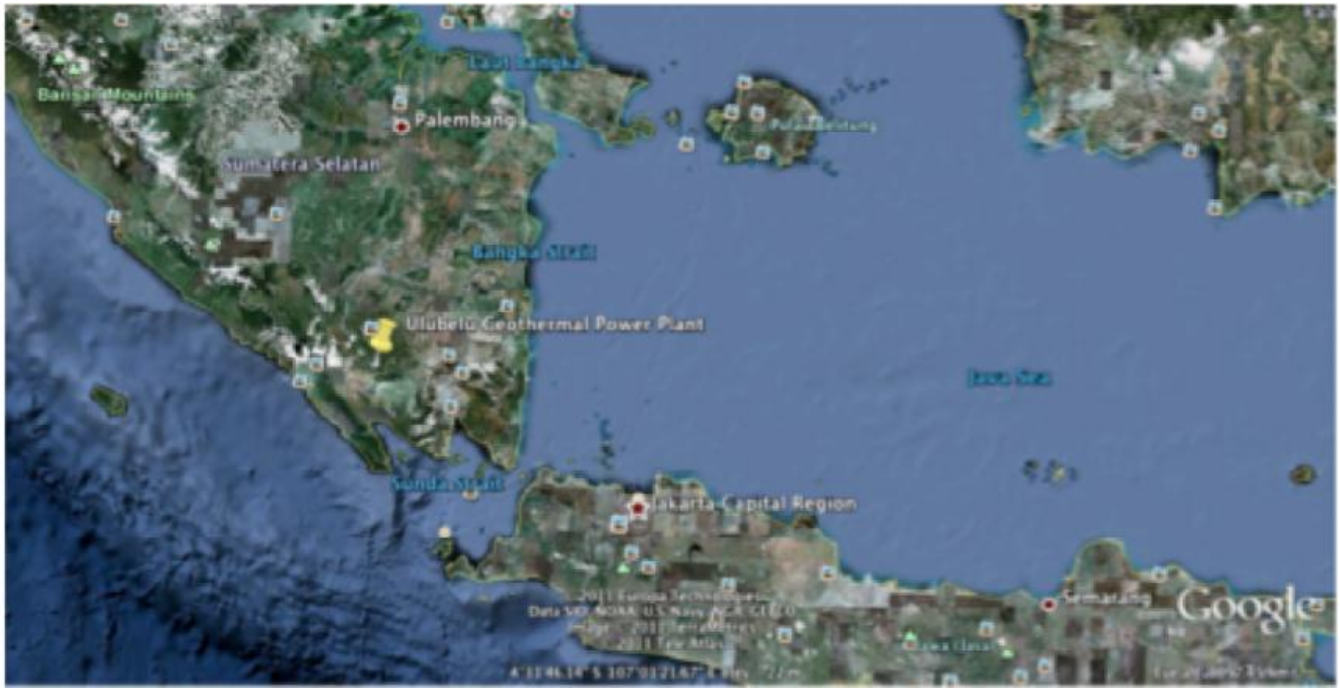


Figure 1 – Map of Ulubelu II geothermal power plant (source : Google Earth.com)

SECTION E. Outcome stakeholder consultation process

E.1. Assessment of stakeholder comments

[See Annex J]

As this project is a retroactive project, the stakeholder consultation could not be conducted according to Gold Standard Rules.

However, stakeholders have been invited to comment on the project in the framework of a normal CDM stakeholder Consultation. This consultation took place on 3 May 2011.

The following stakeholders were invited:

- Local people impacted by the project or official representatives (A)
- Local policy makers and representatives of local authorities (B)
- An official representative of the DNA or DFP of the host country (C)
- Local NGO working on topics relevant to the project (D)

In general, all participated stakeholders in the forum support the development of PGE Ulubelu II power plant project. However, there are still many questions raised regarding the CDM process itself. The comments received from stakeholders could be categorized into two categories as follows: (1) inquiries on the CDM process; and (2) inquiries on the Ulubelu II geothermal power plant CDM project, especially regarding community development.

Below are the comments received by stakeholders:

Comment (C1) : Suroyo – Head of Ulubelu Sub-District

- Thanks for the explanation of the clean development mechanism and we are happy that PT. PGE will register Ulubelu project under this scheme. We are very aware of the climate change issue due to recent temperature increase in the country.

Question (Q1) : Suroyo – Head of Ulubelu Sub-District

- How about any preventive action due to air pollution and noise during steam production test? Because noise and air pollution could reach up to 3 km (Ngarip village).
- Is it possible to have the tree planting program? Because some forest was damaged

A1 : Hendrik, PGE

- In relation to the pollution, we always make great efforts to reduce them by installing noise silencer with different design depend on to each potential wells. In the end, evaluation was

conducted until noise is reduced during the activity. The company has high concern to environmental issues; we always do our best to reduce pollution coming from the project activity. For example, we have designed and installed noise silencer at our wells location. As a conclusion, we always monitor noise pollution and evaluate until there were some reduction.
- PGE has begun to plant crops for example at roadside. To support the program, we strongly hope for participation from local communities group. PGE also has cooperation with local forest department to implement the program.

Q2 : Faisal – Head of Gunung Tiga Village
- Socialization seems only limited to head of villages. Could local villagers also be gathered so that they can understand better?
- We also thank PGE for physical improvements in the area. In addition to that, would it be possible to improve the quality of education for children?

A2 : Anshoruddin, PGE
- During this socialization, we invited all stakeholders including local villagers therefore it is not limited only to head of villages. Besides formal letters sent to head of villages, we also put open invitation to inform about this event so all stakeholders are aware and could share their thoughts and opinions. We thus hope that some stakeholders could attend this event as of now, however if they could not attend we also believe that participants here especially head of villages could communicate the socialization result to those who do not come.
- In 2009, PGE has brought 50 elementary school teachers for a benchmarking visit to develop Ulubelu's teachers capacity, which in the end could increase human resources in Ulubelu.

Q3 : Kasidah – Teacher of Karang Rejo Elementary School
- With this power plant operation, will consumer enjoy a reduction of electricity price, which in the end a reduction of household cost/expenditures?

A3 : Hendrik, PGE
- Authority of electricity management including its price is with PLN. PGE only sells power to PLN. Mechanisms of electricity price reduction will be the PLN policy and could not be affected by PGE even though we sell electricity generated to PLN.

Q4 : Paino - Karang Rejo residents

-We have formed small groups in Karang Rejo that involved local Boy Scout to plant trees. Can the group be part of PGE's program?

A4 : Anshoruddin, PGE
- We need more info regarding this group and its program. Nevertheless, we are ready to help but please advise us to whom should we discuss and also it would great if a proposal is prepared and submitted for our evaluation. Thank you very much for the initiative, we will wait for your proposal regarding this tree-planting program.

Q5 : Adiana – Local forum for family and welfare empowerment Gunung Tiga
- Schools in these villages (e.g. Datarajan and Ngarip Villages) are eager to have more qualified teachers by improving for example teaching techniques by visiting other schools. This

benchmarking program to Wayang Windu was conducted for elementary school teachers, could we also have another program for middle school / high school teachers?
- Related to scholarship program, could you please check when can we expect it to happen?
- In addition to that, please also take into account that women really would like to have a more understanding with regard to the geothermal project or CDM.

A5 : Anshoruddin, PGE
- PGE wants all schools to enjoy the CSR benefit. Currently, CSR is calculated 0.2 - 2.5% from PGE net profits, which is not the case yet as PGE is not yet profitable. Because of this situation, we have not yet signed the MOU BPLHD Lampung regarding CSR program. Nevertheless, we still help school to build its building or do the benchmarking program for elementary school teachers even though we have not get profit yet. However, in the future, we could also expand our program to other schools that need this similar program so all-schools could benefit from the PGE CSR program.
- Related scholarship, PGE had proposed a number of scholarships but not yet approved the management. However, we are now under discussion to find and develop another school-oriented program that could give the same or even higher impact compare to the scholarship program.
- Thank you for your input. This event is one way to inform all stakeholders including women. We will definitely invite more women in the future so all people could get equal information from us.

Suggestion (S6) : Husni Malik – Head of Pagar Alam Village
- In addition to current tree planting program, we hope that you could distribute productive trees such fruit trees or flowers such as chrysolite.

A6 : Anshoruddin, PGE
- We fully agree to your suggestion. We ask kindly head of villages to coordinate with us. Thank you for the suggestion.

Q7 : Suroyo – Head of Ulubelu Sub-District
- Between Ngarip – Muara Dua Villages, some roads are damaged for nearly two months now, could you please facilitate this issue.
- In the group of Hutan Kemasyarakatan/HKM (Forest for Community), license to avoid deforestation is 30 years without logging 400 trees per Ha. We propose to have this HKM program conducted in nonproductive forest first so it will not affect other productive forest area.

A7 : Hendrik, PGE

- Within PGE, we have planned realistic CSR program because a lot of funds are on the stake. Currently, road repair activity is not our priority as there are programs that are more urgent and important. Beside that, other entities are also using the road so we will need to discuss with other entity to see what kind of arrangement for this road repair activity. However, we will put this situation for our consideration.
- As for the HKM group (forest for community), we agree to have more productive trees for the tree planting/ Re-forestation program. However to fulfill the reforestation requirement from

the HKM group (forest for community), we need to plant 400 non-productive trees per hectare first for 30 years.

Q8 : Istati - Datarajan VIllage

- This socialization event is very positive and we expect to have it more sustainable. Besides that, PGE assistance is needed especially for Elementary School 1 Datarajan for character development. One of the indicators is a sense of belonging. Therefore, could you please improve education quality through ICT as it is a very important element to enhance students' achievement.
- There are some students who join competition on district level. We kindly ask for PGE assistance to win this competition.
- As we are very grateful for PGE CSR program, we are ready to become a medium of socialization for other stakeholders.

A8 : Anshoruddin, PGE

- Through our programs, we hope we could improve students' character, and that is one of our goals. However, things should be planned and done gradually to achieve a maximum impact.
- We will discuss with our management and hope your comment could be inserted into our CSR program.
- Thank you very much for your help. PGE is really grateful if you are satisfied with our program.

Q9 : Murni M - Air Abang Village

- Could PGE explain how do you minimize impact of drilling activities?
- We would be very happy if our elementary schools could be part of PGE CSR program.

A9 : Hendrik, PGE

- Few weeks ago, we have reviewed this situation. Before the drilling activities began, we plan any related countermeasures to minimize these drilling impacts, but in relation to to subsurface conditions, which are difficult to predict, we would need further evaluation. Our planning has been carefully reviewed and will be evaluated by the supervisors in case emergency situation happened.
- Air Abang area is inside the ring I, therefore it should be included in the program. We will review this situation. In addition to that, teachers are given some incentives to encourage them as part of our CSR program.

E.2.	**Stakeholder Feedback Round**

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

[See Toolkit 2.11]

To be filled in once the Stakeholder Feedback Round is over. This passport is for the purpose of a pre-feasibility assessment only.

E. 3. Discussion on continuous input / grievance mechanism

[See Annex W]

Discuss the Continuous input / grievance mechanism expression method and details, as discussed with local stakeholders.

SECTION F. Outcome Sustainability assessment

F.1. 'Do no harm' Assessment

[See Toolkit 2.4.1 and Annex H]

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
1. The project respects internationally proclaimed human rights including dignity, cultural	The project respects internationally proclaimed	Low Risk	n/a

property and uniqueness of indigenous people. The project is not complicit in Human Rights abuses.	human rights including dignity, cultural property. The project is not complicity in human rights abuses, as the project does not force people to changes cultural habits, where company follow the labor laws and does not interfere with operation of Worship. To avoid any violations to Human Rights, PT Pertamina Geothermal Energy (PGE) specifies specific requirements for all potential contractors (services and/or goods) who wish to work with PT. PGE has to follow a screening process, where potential contractor should have the Registered Certificate (Surat Keterangan Terdaftar / SKT) and passed the Certification of Contractor Safety Management System (CSMS). The selected suppliers should sign the Good Corporate Governance (GCG) Integrity Pact for all procurement activities. Republic of Indonesia has ratified the ILO Convention on Human Right and in-force by Indonesia Regulation No. 39 in 1999 regarding Human Right.		
2. The project does not involve and is not complicit in involuntary resettlement.	PT.PGE has a specific procedure on land acquisition, which stipulated on the Organization	n/a	n/a

	Operational Procedure Number: B-001/PGE500/2010-S0 regarding 'Land procurement for geothermal exploitation and exploration activities'. The project is located at the protected forest hence the project activity will not resulted in people displacement and resettlement. Moreover, The project will not have any major impacts on the environment or land use pattern and will not result in temporal or permanent displacement of the local community. The project activity site locations (e.g. cluster and power plant location) are secured by fence and guard portal. However, local villager would still have access to the project location as long as they have fulfilled the secure and safety criteria set by PT. PGE.		
3. The project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage.	PT. PGE will not altered, damaged or removed/replaced any critical cultural heritage as result of this project. As explained on the point 2 above, PT. PGE implemented Organizational Operational Procedure (TKO) Number B-001/PGE500/2010-S0 for Land Acquisition activity. During this process if the company finds any critical cultural heritage, such as	n/a	n/a

	historical or archaeological sites located at or near the project location, they will report the finding to PT. PGE Head Office and Local Archaeological Office. Hence no negative impact on the cultural heritage occurred since PT. PGE has set the mitigation act as explained above. Republic of Indonesia has ratified relevant ILO Convention regarding Cultural Property.		
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	On doing the operational activity, PT. PGE is affiliated with the PGE Union Worker (Serikat Pekerja PGE). A routine review on the Mutual Agreement between the company and the union is continuously conducted. At PT. PGE, all employees have their freedom and the rights to collective bargaining are not restricted. The Republic of Indonesia has ratified the ILO Convention Number 187 and in-force by Republic of Indonesia Act Number 21 in 2000 regarding Labour Union.	Low Risk	n/a
5. The project does not involve and is not complicit in any form of forced or compulsory labour	PT. PGE always refers to the Human Resource Regulation published by Ministry of Manpower to recruit new employees or labour. A working contract is available and need to be agreed by	Low Risk	n/a

	both worker and company. This working contract rules out the right and obligation of labour to the company. By having the agreed working contract between the company and labour, it is confirm that no forced or compulsory labour is involved in the project. All employees voluntarily entered into official working contracts. In addition, Republic of Indonesia has ratified the International labour Conventions on the elimination of forced labour (No. 105)		
6. The project does not employ and is not complicit in any form of child labour	PT. PGE uses the Resource Management Guideline (Pedoman Pengelolaan Sumber Daya) to ratify the Corporate Recruitment Organizational Operational Procedure (TKO). The guideline is referring to the Ministry of Manpower Regulation which rules out not to employ under age worker (age below 18 years old). Moreover, the company has mapped the working risk and specific skill and requirement which are required for working with high risk level. Hence no child labour is hired for the project. Furthermore, the Republic of Indonesia has	Low Risk	n/a

	ratified the International Labour Conventions on the elimination of child labour (No.138) and Worst Forms of Child Labour (No. 182)		
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 company applies the rules of recruitment TKO B-003/PGE710/2011-S0. The project does not involve any form of discrimination based on gender, race, religion, sexual orientation, political belief or social class. However, the company specifies a certain standard (for example: not colour blind) based on the nature of the job that will be given to the prospective employees. The Republic of Indonesia has also ratified the International labour Conventions of discrimination in employment (No.111) and Convention on equal remuneration (No.111).	Low Risk	n/a
8. The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments.	For the implementation of the project, the company develop Job Safety Environment Hazard Analysis (JSEHA) to identify the risk that would have occurred and its mitigation. Moreover, employees also equipped with Personal Protective Equipment. In addition the project follows national safety rules under Republic of Indonesia Act no.1 year 1970 that	Low Risk	n/a

	covers work safety. To avoid woman sexual abuse potency at PT. PGE work area, all women workers who need to work late will be accompanied by security guard or colleague For labour who work at PT. PGE will receive health insurance coverage. For any health and safety emergencies, the company has developed guideline and emergency procedure to mitigate the negative impact.		
9. The project takes a precautionary approach in regard to environmental challenges and is not complicit in practices contrary to the precautionary principle.	The project is development of geothermal field for power plant electricity generation. Electricity generated by the project will be transported to the grid. The working areas of the project are mountainous since the potential geothermal associated with volcanoes. To manage the risk, regular environment monitoring and management plant to be conducted by the third party. This monitoring is an integral part of the fulfilment of environmental regulation. PT. PGE has internal procedure on waste management. Hazardous Waste should be managed properly from calculated amount and type (store them temporary and delivered to legalized third party, or treated them as	Low Risk	n/a

	permitted). Project should submit an application for permit of Hazardous Waste Temporary Storage, create scheme how to manage/treat them, and If it is required for utilizing Hazardous Waste (e.g. drilling cutting) by owned PGE/Project, it is also need to submit an application to Ministry of Environment for permission to treat drilling cutting. PGE also participated on the Re-forestation program at the Protected Area and/or Convention Park. In addition, Indonesia is a participant of the Convention on Biological Diversity (CBD), the convention on International Trade in Endangered Species of Wild fauna (CITE) and the Convention in Wetlands (Ramsar convention). Indonesia is also a participant of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) agreements.		
10. The project does not involve and is not complicit in significant conversion or degradation of critical natural habitants, including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value, or (d) recognized as protected by	Ulubelu Geothermal Project is development geothermal field of the existing Ulubelu geothermal power plants. Before the start of project implementation, the company has developed Environment Impact Assessment (EIA) document, which disclose the potential	n/a	n/a

traditional local communities.	impact to the local environment and habitat with its mitigation act. Geothermal project pertaining to forestry and plantations. For the protected forest, permission for the land used shall be granted from Ministry of Forestry. To mitigate risk if the project situated in the protected forest, mitigation action would be done such as provide replacement area, embankments and conditioning the infrastructure.		
11. The project does not involve and is not complicit in corruption	Corruption is illegal in Indonesia under the Republic of Indonesia Act No.31 year 1999 that covers corruption eradication. There is corruption vulnerability at Ulubelu Geothermal project site. Hence, to avoid any form of corruption , the company has developed the GCG (Good Corporate Governance) Compliance Form which needed to be filled-in by all employees to monitor the implementation of GCG. All the permits that are required legally have been attained following applicable laws and regulations.	Low Risk	n/a
Additional relevant critical issues for my project type	**Description of relevance to my project**	**Assessment of relevance to my project (low/medium/high)**	**Mitigation measure**

1			
2			
Etc.			

F.2. Sustainable Development matrix

[See Toolkit 2.4.2 and Annex I]

Insert table as in section D3 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	To monitor the air quality, PP randomly collected measurement from 12 sampling points. The following parameters were monitor to measure the air quality: a. SO_2 b. NO_2 c. NH_3 d. H_2S The result of ambient air quality measurement as mentioned above			0

	indicates that its concentration is still below the required concentration as per Government Regulation. No. 41 in 1999 (EIA document p.III-7). (**tolong diganti dengan UU yang berlaku di Ulubelu).** Hence, the implementation of project doesn't affect the air quality and no mitigation action needed for this indicator. **Project Emission** As mentioned in the Project Design Document, the non-condensable gases resulting from the project operation is considered as project emission, however the project emission amounted is less or equal to 10% of baseline emission and would not give significant impact to the air quality compared to baseline condition. **Therefore, this indicator is scored neutral.**			
Water quality and quantity	A. Water Quality To monitor the ground water quality, PP took sample from 12 random sampling points. The test result indicated that 8 sampling points have medium contamination; 3 sampling points have mild contamination and 1 sampling point meet the water standard. The test result is compare with Government Regulation No. 82 in 2001. The project main activity is geothermal based electricity generation. The quality of water used for heat transfer will not alter, since neither chemical addition nor chemical process occurs during the operational stage. Hence, the operational of project activity will not affect the water/river body quality. B. Water Quantity The ground water is only used for electricity generation and will be re-injected underground. Therefore either ground water resources or surface water is not negatively impacted or disturbed. **Thus, this indicator is scored neutral**			0
Soil condition	**Physiography and Geology** In general, the level of soil fertility in the proposed project activity site can be categorised as less fertile, with a relatively acidic soil reaction. The result of physiography and geology: the potential for erosion in the area are distinguish on the bases of land use;			0

	- mixed garden - shrubs. The slope is divided into two criteria; - namely ramps (3-8%) - undulating (8-15%). The soil is divided into two types; - laotosol - regosol.. The potential for erosion based on the above calculations generaly range between low to moderate, particularly for land used for shrub. Meanwhile, if the land is used for mixed garden, soil conservation measures must be carried out. Therefore, in general, the potential for erosion in the area is low. It is caused by the density of the vegetation is still quite good thus no potentially dangerous erosion. The project activity will not produce any waste, which decreases soil conditon in quality and/or quantity. **Earthquake** The extraction will not cause any earthquake impact. **Thus, this indicator is scored neutral.**			
Other pollutants (noise)	To measure the noise level at the work environment, PP took measurement from 12 different locations. The measurement showed that the noise level at each measurement location is still below the standard stipulated by Minister of Environment No. 48 in 1996 (Kep. Men LH No 48 tahun 1996). With reference to the noise level during construction phase, the noise level during operation is estimated to be below the limits allowed by the regulations. **Thus, this indicator is scored neutral.**			0
Biodiversity	FLORA The vegetation of the project plant site is categorized as primer forest with status Protected Forest area. Some mix vegetation dominated with coffee seed, durian and banana owned by local villagers. Since the surround area categorized as Protected Forest, there were no human activity or human intervention at this area. FAUNA All types od fauna are found surround the project site plan. PP records 41 types of fauna existing surround the project site consist of : 4 for mammals; 12 for reptilies,			0

	2 aphibians, and 23 aves. There is no significant change to the livelihood of plants or animals before or after the project activity. The project activity utilizes heat extraction from earth's heat content for electricity generation. Therefore, aquatic life is not affected when compared to the baseline scenario. **The indicator is thus scored neutral.**			
Quality of employment	The project owner would implement OHSAS standard three years after the project operational date to ensure a safe working environment at the project site by providing Standard Operating Procedure, training and periodic standard check. Thus, the project activity would enhance the quality of employment. The implementation of Ulubelu geothermal power plant would give positive impact to the local villagers since the project will absorb many workers during the construction phase. During the construction phase, it will create job opportunity for non-skill labors. However, during the operation phase only skilled and trained labors could have a position at the project site. **Thus, this indicator is scored positive.**		**Baseline:** Without the implementation of the project activity, the local villagers will continue their activities as farmer or blue-collar labor. **Project Activity:** Compared with baseline, new job opportunity will be provided to the local villagers for each implementation stage. Most local villagers will be hired as non-skill workers during the construction phase. The villagers with specific education level or skill could expect to be hired as permanent staff during the operational stage of project activity. Thus, positive score is given to this indicator Parameters: The parameter of "Employment opportunities for skill and non-skill workers" is chosen. **Monitored Data:** OHSAS standard Employment data	+
Livelihood of the poor	**1. Number of Population** There are five villages will be affected by the implementation of project activity: - Pekon Gunung Tiga			0

- Pekon Karang Rejo
- Pekon Pagar Alam
- Pekon Muara Dua
- Pekon Ngarip

Below table will describe the number of population for each 'Pekon' (villages):

Pekon	Number of Population		Total
	Male	Female	
Gunung Tiga	994	913	1,907
Karang Rejo	1,197	1,149	2,346
Pagar Alam	874	850	1,724
Muara Dua	489	466	955
Ngarip	2,630	2,857	5,487
Total	6,184	6,235	12,419

The population number in Ulubelu Sub-district is rapidly growth for this past 5 years due to the geothermal exploitation activity operated by PGE started in 2006. The construction of access road helps villagers to travel outside Ulubelu sub-district to find job or to market their crops.

2. Livelihood of villagers

Below table will explain all type of works engaged by local villagers:

No	Type of work	Gunung Tiga	Karang Rejo	Pagar Alam
1	Government employee	0	3	0
2	Private Sector	4	2	1
3	Farmer	1,597	2,046	1,282
4	Fisherman	0	0	0
5	Retired	0	2	0
6	Entrepreneur	0	3	2
7	Not working	273	183	391
8	Others	33	107	48
	Total	1,907	2,346	1,724

3. Workforce

The productive age is range between 15 – 54 years old. This productive age is predominant age range (about 86%) on every village surrounded the project site location. As explained on the table above, most of people at their productive age worked as farmers.

The local villagers livelihood are still below the poverty line

	4. Mitigation plan: The socioeconomic data gathered during EIA document drafting will be use to plan the CSR program for surrounded villages. The implementation of project activity would open new working opportunities during construction and operation phases. Most workers will be coming from nearest village. The project will give positive impact to the region. However, it is impossible to measure the impact to the whole region. Thus, the indicator is scored neutral			
Access to affordable and clean energy services	Although the welfare level varied, all villages surrounding the project location have access to electricity and clean water source. The electricity generated by the geothermal plant is fed into the regional grids. This leads to a high probability of improving the grid stability and availability of electricity to end –user including households/local consumers (villagers and sub-urban inhabitants). Since the electricity generation from project activity is not directly affected the local access to energy, **hence this indicator is scored neutral.**			0
Human and institutional capacity	**Education Level** The education level in study area (5 Pekon surrounded the project activity) is relatively low with most villagers only finished their education up to Elementary School. The new construction of access road will help people to access the nearest higher educational institution (such as Junior High School or Senior High School). However, the low socio-economy condition of local villagers and willingness to have higher education would become barrier to improve the current education level. The implementation of project activity will improve the economical level of villagers whom working for PGE. **Mitigation** The project will improve the human and institutional capacity, but will not have substantial impact on local communities since the improvement is limited to the employees working with the project activity. In consequence, **this indicator has**			0

<table>
<tr><td></td><td>neutral impact.</td><td></td><td></td><td></td></tr>
<tr><td>Quantitative employment and income generation</td><td>Income level of local villagers
The income level of local villager is indicated by the rice price at the local market. The survey shows that the rice price is similar with rice price at another local markets. This is indicated that the opening of access road has helped villagers to access their daily needs at decent price.

New working opportunities at the project activity

The project activity would hire lots of un-skilled worker during the construction phase.

The expected amount of workers and qualification for each construction phase is explain as below:

<table>
<tr><th>Activity</th><th>Expert</th><th>Surveyor</th><th>Labor</th><th>Origin of worker</th></tr>
<tr><td>Land clearing and maturation</td><td>3</td><td>5</td><td>30</td><td>Local</td></tr>
<tr><td>Construction of access road and supporting facility</td><td>4</td><td>10</td><td>100</td><td>Local / entrant</td></tr>
<tr><td>Civil construction, mechanical and electrical</td><td>8</td><td>20</td><td>50</td><td>Local / entrant</td></tr>
<tr><td>Well drilling</td><td>10</td><td>8</td><td>30</td><td>Local / entrant</td></tr>
<tr><td>Well production test</td><td>2</td><td>5</td><td>10</td><td>Local / entrant</td></tr>
<tr><td>Geothermal power plant construction</td><td>30</td><td>20</td><td>500</td><td>Local / entrant</td></tr>
</table>

Several working opportunities also occurred during the construction phase for local villagers from the sub-contractor of PGE.

The open working opportunity from the implementation of project activity is expected to increase the wealthy level of limited surrounded villagers whom work for Pertamina.

The villagers could also provide business opportunities and increase their income by opening a small food stall or renting room to the worker from other region.

Since the employment opportunity nature from the implementation of project activity is temporary only, hence the wealthy level</td><td></td><td></td><td>0</td></tr>
</table>

	of surrounded villagers will not be affected. **Thus, this indicator is scored neutral.**			
Balance of payments and investment	The news coverage of the project might enhance the interest of other potential investor to invest in the region. However, the implementation of project activity would not directly increase the investment in the region. New investment from other investor would increase only if the region meets conditions requested by the other potential investors. **Thus, this indicator is scored neutral**			0
Technology transfer and technological self-reliance	The Project will utilize state of the art but known technology in electricity generation and transmission. The geothermal steam turbine generator systems and other equipment e.g. cooling system are imported but training for its operational and maintenance will be organized for new employees as part of transfer knowledge. **Thus, this indicator is scored neutral.**			0

Justification choices, data source and provision of references

Air quality	EIA (Environment Impact Assessment) approved by local government pg III-4 – III-9
Water quality and quantity	EIA (Environment Impact Assessment) approved by local government pg III-30 – III-32
Soil condition	EIA (Environment Impact Assessment) approved by local government pg III-9 – III-11
Other pollutants	EIA (Environment Impact Assessment) approved by local government pg III-7
Biodiversity	EIA (Environment Impact Assessment) approved by local government pg III-35 – III-38
Quality of employment	
Livelihood of the poor	EIA (Environment Impact Assessment) approved by local government pg III-62 – III-64
Access to affordable and clean energy services	
Human and institutional capacity	EIA (Environment Impact Assessment) approved by local government pg III-64 – III-66
Quantitative employment and income generation	EIA (Environment Impact Assessment) approved by local government pg III-67 – III-70
Balance of payments and investment	
Technology transfer and technological self-reliance	FSR (Feasibility Study Report)

SECTION G. Sustainability Monitoring Plan

[See Toolkit 2.4.3 and Annex I]

Copy Table for each indicator

No		1
Indicator		**Quality of employment**
Mitigation measure		n/a as indicator scores positive
Repeat for each parameter		
Chosen parameter		Employment opportunities for skill and non-skill workers
Current situation of parameter		In the absence of project activity, no employment opportunities will be provided
Estimation of baseline situation of parameter		
Future target for parameter		Employment opportunity during construction and operational stage of the project activity, which will be recorded in the HR Management system/data
Way of monitoring	How	Employment number recorded in HR Management data The latest certification for OHSAS
	When	Annually
	By who	Monitored by PGE

Additional remarks monitoring

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]

The PDD section on additionality follows Gold Standard guidance. Please refer to Section B.5 of the PDD.

H.2. Conservativeness

[See Toolkit 2.2]

To assess conservativeness, comparison between the methodology versions of CDM registered PDD and the latest applicable version at the time of first submission of GS documentation; the analysis of same is provided as below:

Methodology Section	Version 12.1	Version 13
Applicability Conditions (General)	This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).	This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).
Applicability Conditions (General)	The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;	The project activity is the installation, capacity addition, retrofit or replacement of a power plant / unit of one of the following types: hydropower plant / unit (either with a run- of-river reservoir or an accumulation reservoir), wind power plant / unit, geothermal power plant / unit, solar power plant / unit, wave power plant/unit or tidal power plant / unit;
Applicability Conditions (General)	In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 11 to calculate the parameter EGPJ,y): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 10 to calculate the parameter EGPJ,y): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.
Applicability Conditions (General)	This methodology is not applicable to project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity,	This methodology is not applicable to project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline

	since in this case the baseline may be the continued use of fossil fuels at the site;	may be the continued use of fossil fuels at the site;
Applicability Conditions (General)	This methodology is not applicable to the biomass fired power plants;	This methodology is not applicable to the biomass fired power plants;
Applicability Conditions (General)	This methodology is not applicable to hydro power plant that results in the creation of a new single reservoirs or in the increase in an existing single reservoirs where the power density of the power plant is less than 4 W/m^2	This methodology is not applicable to hydro power plant that results in the creation of a new single reservoirs or in the increase in an existing single reservoirs where the power density of the power plant is less than 4 W/m^2
Inclusion of BE and PE Gases	Baseline: CO_2 included; Project: Fugitive emissions from non-condensable gases contained in geothermal steam - CH_4 and CO_2 included; Project: combustion of fossil fuels for electricity generation in geothermal power plants – CO_2 included	Baseline: CO_2 included; Project: Fugitive emissions from non-condensable gases contained in geothermal steam - CH_4 and CO_2 included; Project: combustion of fossil fuels for electricity generation in geothermal power plants – CO_2 included; Project: use of fossil fuels for back up or emergency purposes (e.g diesel generators) - CO_2 excluded
Baseline Assessment	If the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following: Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".	If the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following: Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".
Additionality Assessment	Not Required	Not Required
Methodological Choices (ER calculation)	Baseline Emissions: Electricity supplied to grid (green field option) Project Emissions: Fossil fuel consumption for electricity generation and emissions of non-condensable gases from operational Leakage: Neglected	Baseline Emissions: Electricity supplied to grid (green field option) Project Emissions: Fossil fuel consumption for electricity generation and emissions of non-condensable gases from operational. Fossil fuel consumption for emergencies can be neglected. Leakage: Neglected
Grid Emission Factor	As per registered PDD; GEF = 0.743 tCO2/MWh (Tool to calculate the emission factor for an electricity system Version 02.2.1)	As per latest published data, the GEF of Indonesia is 0.748 tCO2/MWh, which is higher than registered PDD and will resulted in higher Emission Reduction calculation as well. Hence for conservative approach the GEF of 0.743 is used to compute the Emission Reduction of project activity.

With regards to the methodology version update, the confirmation had been received by the GS Foundation that the project can be allowed to seek Gold Standard registration in line with ACM0002 version 12 with no change in the grid emission factor. No further assessment will be required from the DOE on this for GS registration.

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 Manual for Project Developers.

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ANNEX D - OFFICIAL DEVELOPMENT ASSISTANCE DECLARATION

Date: August 12nd, 2013

The Gold Standard Foundation
79 Avenue Louis Casai
Geneva Cointrin, CH-1216
Switzerland

RE: Declaration of Non-Use of Official Development Assistance by Project Owner of GS ID 2297

As Project Owner of the above-referenced project, and acting on behalf of all Project Participants, I now make the following representations:

I. The Gold Standard Documentation

I am familiar with the provisions of The 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 with the condition that some, or all, of the carbon credits [CERs, ERUs, or VERs] coming out of the project are transferred to the ODA donor country. I hereby 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 of implied, that any or all of the carbon credits 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 carbon credits generated from the project as a condition of investment, I will notify The Gold Standard immediately using the Amended ODA Declaration Form provided below.

III. Investigation

The Gold Standard reserves the right to conduct an investigation into any project it reasonably believes may be receiving ODA with the condition that some or all of the carbon credits from the project will be transferred to the ODA donor country.

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IV. Sanctions

I am fully aware that the sanctions identified in The Gold Standard Terms and Conditions may be applied to me or the above-referenced project in the event that any of the information provided above is false or I fail to notify The Gold Standard of any changes to ODA in a timely manner.

I swear that all of the statements contained herein are true to the best of my knowledge.

Signed: 

Name: **Tedi Mulyana**

Title: **CDM Manager**

On behalf of: **PT. PERTAMINA GEOTHERMAL ENERGY**

Place: **Jakarta**

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