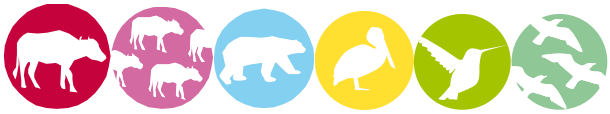
ANNEX R – PASSPORT TEMPLATE

CONTENTS



A. Project title

B. Project description

C. Proof of project eligibility

D. Unique Project Identification

E. Outcome stakeholder consultation process

F. Outcome sustainability assessment

G. Sustainability monitoring plan

H. Additionality and conservativeness deviations

Annex 1 ODA declarations

SECTION A. Project Title

[See Toolkit 1.6]

Title: Project Kamojang Unit 5 PT. Pertamina Geothermal Energy

Date: 19/08/2013

Version no.: 01

SECTION B. Project description

[See Toolkit 1.6]

General Description of project activity

Estimated project start date: 10/01/2011 (Date of equipment mobilization of the 1st well drilling)

The Project Kamojang Unit 1 PT. Pertamina Geothermal Energy (hereafter referred to as Kamojang or the Project) developed by PT. Pertamina Geothermal Energy (PGE), hereafter referred to as the Project Developer, is a geothermal power plant in West Java, Indonesia (hereafter referred to as the "Host Country"). The Project's net installed capacity is 30 MW[1]. While its total gross power output would be 31.8 MW. An estimated power generation of 236.52 GWh per annum (based on the predicted load factor of 90% multiplied with the nest 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 Kamojang to generate electricity to be transmitted to the Jamali Interconnected grid (hereafter referred to as the Grid) through the Perusahaan Listrik Negara (PT. PLN (Persero), state-owned electricity company) interconnection point in the Kamojang geothermal project area. In the absence of the proposed project activity, electricity will be supplied by the generation mix in the Jamali interconnected grid. This is the same as baseline scenario to the proposed project activity. The project activity will reduce total emissions in the Jamali grid by supplying green renewable electricity from geothermal resources in the Kamojang geothermal field, instead of utilizing typical power generation with more carbon intensive technology[2]. Total GHG emission reductions for the first crediting period (7 years) is estimated to be 1,096,683 t.CO2e, with annual average amount of 156,669 t.CO2e.

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

- Increasing community development and corporate social responsibility at Kamojang 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 approximately 30 – 40 persons will be permanently employed for the project activity operation 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

[1] Technical specification documentation that was sent to PLN in October 2010, 31.8 MW is Kamojang's power output or total gross installed capacity as per turbine's nameplate. While 30 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 1.8 MW, will be covering power plant auxiliaries (referred also as the project developer's internal consumption)

[2] Sectoral scope: (1) Energy industries (renewable -/ non-renewable source)

[3] Sustainable Development criteria defined by the National Commission on Climate Change (representative of Indonesian DNA) http://pasarkarbon.dnpi.go.id/web/index.php/dnacdm/cat/5/sustainable-development-criteria-.html

transmission, with total gross power output of 31.8 MW and net installed capacity of 30 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 Kamojang geothermal field, with condensate re-injection wells to maintain groundwater supply. The main technical parameters of the proposed project are shown in Table 1.

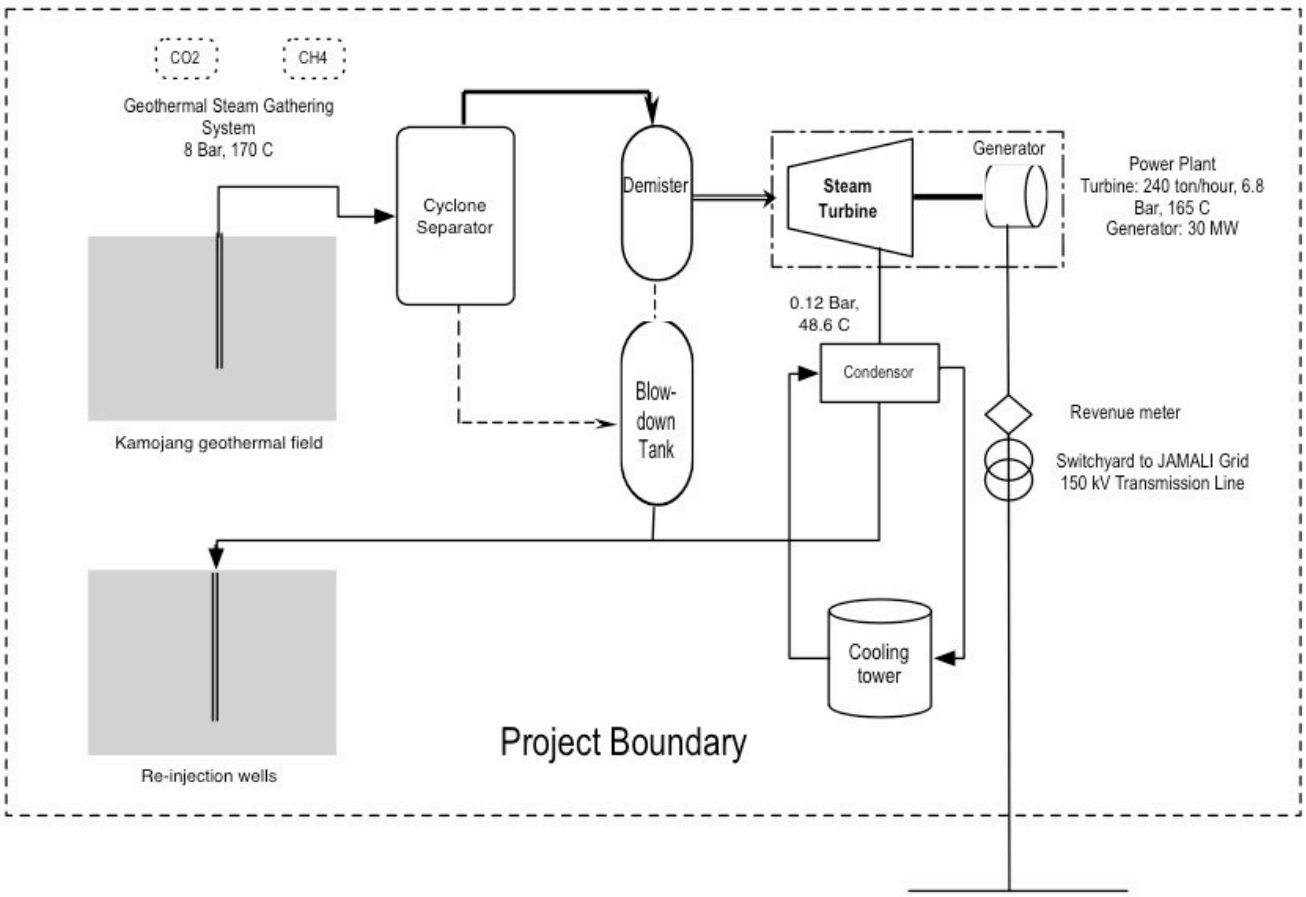
Table 1 – Main technical parameters of the proposed project

Variable	Value	Source
Turbine generator capacity (MW)	31.8	Power plant technical specification as sent to PLN, page D-25
Project Lifetime (years)	30	Feasibility Study Report, page 8, Where mentioned that PLN will be bound to have a 30 years contracted PPA.
Net installed capacity (MW)	30	Feasibility Study Report, page 8
Operating time yearly (hours)	7884 (8760 x 90%)	Calculated based on 90% load factor as per Feasibility Study Report, page 12
Expected annual power generation / effective supply to the grid (MWh)	236,520	Feasibility Study Report, page 12

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 equipment used in the project is produced domestically, whereby the project developer is experienced in handling and operating equipment of this nature.

Steam collected from the Kamojang KWK A and KWK C geothermal field is sent to the Kamojang unit V power plant, where it is separated from condensate and fed into steam turbine generator systems (direct steam expansion) as shown in Figure 2. 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, independently of the existing Kamojang power plants. Kamojang unit V is restricted to the Northeast area (KWK sector) from existing Kamojang field and does not share wells or pipelines with the other four previously built power plants, nor would it have any interconnection in steam flow / control system.

Figure 2 – Mass energy flow diagram of Kamojang geothermal field 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.
The country is listed as an eligible state for Gold Standard CDM project as defined by the UNFCCC.

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 power plant development **(electricity generation and sales to the Grid)**	May 2010	Total investment = USD 83.2 million **(Expected electricity price = USD 90/MWh)**
Head of Agreement (HoA) between PGE &	17 February 2010	Head of Agreement (HoA) is an agreement between seller e.g. PGE and buyer (e.g.

PLN (for eight geothermal areas)		PLN) before both parties entered into energy sales contract or steam sales contract such as: Steam sales = Ulubelu I, Lahendong IV, Hululais, Kotamobagu I-II, Sungaipenuh Electricity sales = Ulubelu II, Karaha, Kamojang, Lahendong V, Lumutbalai I-II
PGE Board of Directors approval	12 July 2010	Minutes of Meeting described PGE Board of Directors assessment and approval to develop Kamojang unit 5 power plant
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 Indonesian DNA	4 September 2010	Letter to President Director of PGE from the Indonesian DNA regarding CDM prior consideration
CDM Prior consideration sent to UNFCCC	12 October 2010	Prior consideration published in the UNFCCC website on 12 October 2010: http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html
Equipment mobilization to the 1st well drilled	10 January 2011	Equipment mobilization work order for Kamojang-KWK A.1
PPA signed with PLN	11 March 2011	Price = USD 8.25 cent / kWh (30 years from COD)
Environmental Impact Assessment/EIA Terms of Reference	16 August 2011	Approval by the environmental agency of Bandung regency
CDM project development Assignment Letter	17 April 2012	ERPA is signed by South Pole Carbon Asset Management Ltd. and PT. Pertamina Geothermal Energy.
Power plant construction start	1 January 2013	Kamojang feasibility study report
Power plant operation start	1 January 2014	Kamojang feasibility study report

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	☐

	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)
Pre-feasibility assessment	☑	☐	☐

If Retroactive, please indicate Start Date of project activity dd/mm/yyyy: 10/01/2011

SECTION D. Unique project identification

D.1. GPS-coordinates of project location

[See Toolkit 1.6]

	Coordinates
Latitude	7° 8' 23.1504" N
Longitude	107° 47' 20.691" E

Explain given coordinates

The Kamojang geothermal power plant is located approximately 70 km south of Bandung, the capital of West Java province.

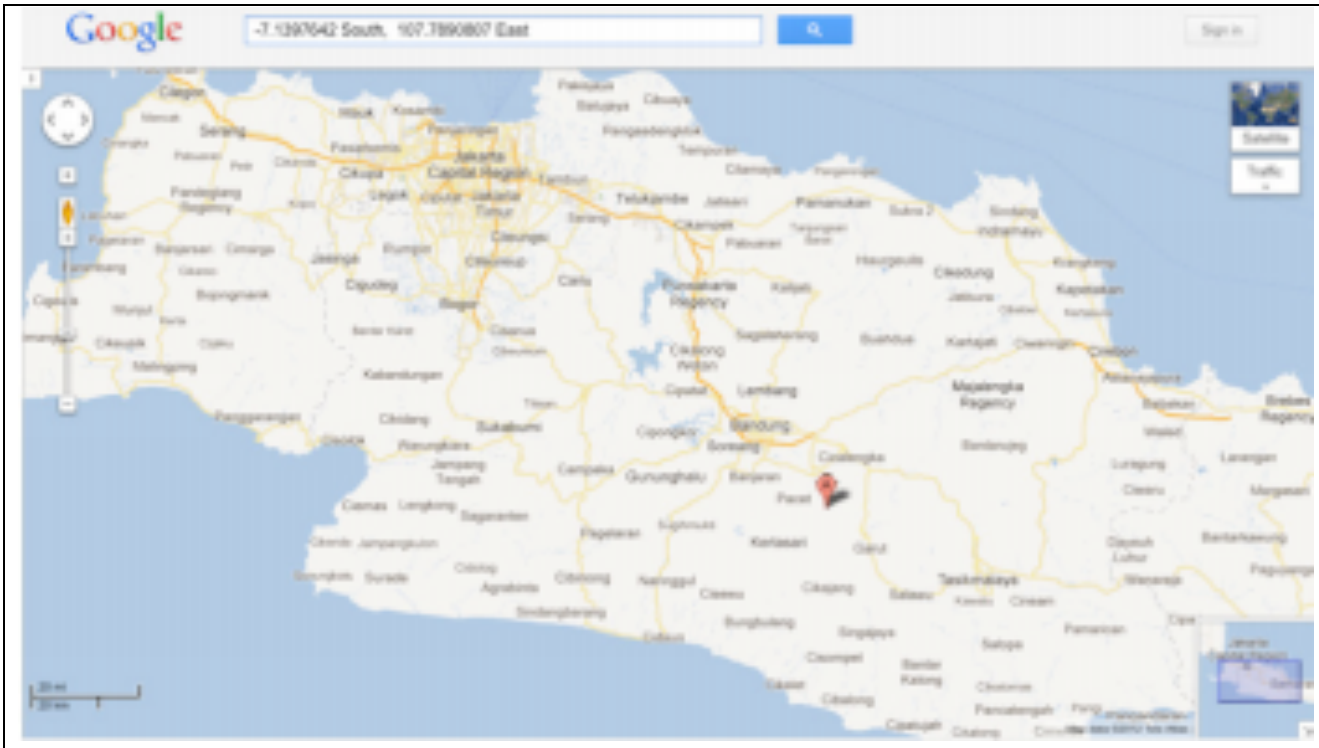
City/town : Ibun sub district, Bandung regency
Province : West Java province
Host party : Republic of Indonesia

The exact location of the geothermal power plant is defined using GPS coordinates -7.1397642 South, 107.7890807 East or 7° 8' 23.1504" N and 107° 47' 20.691" E.

D.2. Map

[See Toolkit 1.6]

Figure 1 – map of Kamojang geothermal power plant (source: maps. Google.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 10 May 2012.

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)

Below are the comments received by stakeholders:

1) Mr. Tito (Head of Youth Organization, Ibun Sub-District)

Comment (C1) →

a) We are happy to know that PGE will develop Kamojang V geothermal power plant development. We really hope that the Kamojang V development will give benefits to local communities e.g. employment opportunities for local people.

Question (Q1) →

a) In my opinion, development of this geothermal power plant will affect surrounding forest areas.
b) Could you please explain which forest areas to be used and also how big will the forest be cleared due to this geothermal power plant development? Please also describe efforts will be made by PGE to reduce greenhouse gases effects due to forest clearing and where will PGE do trees planting to replace all forest areas that has been cleared?
c) With regard to the CDM scheme, PGE will use fossil-fuelled (gasoline or diesel fuel) engines during the construction of this geothermal power plant. My question is will these engines be considered as part of CDM project?

Answer: Mr. Tavip Dwikorianto (Kamojang General Manager, PGE)

a) Kamojang V geothermal power plant will be located next to the existing area of Kamojang IV geothermal power plant, which has been in operation. Thus, there will not be any new land clearing, which in the end there will be no land replacement.
b) It is true that during the construction phase of Kamojang V geothermal power plant, diesel engines will be used.

Answer: Mr. Leonardo Sidabalok (South Pole)

b) Diesel generators used during construction of Kamojang V geothermal power plant will not be considered in the CDM project boundary. However, an additional diesel generator utilized during power plant operation as part of the project boundary, except minor use for emergency power only, will be taken into account in the project emission calculation as a reduction of generated emission reductions (ERs) from the project. In addition to that, emissions emitted from fossil fuelled engines during the power plant construction have been assessed in the Terms of Reference of the Environmental Impact Analysis (KA-ANDAL) document of Kamojang V geothermal power plant. Referring to this document, PT. PGE will continue to make efforts by land and vegetation restorations to address emissions from these engines.

2) Mrs. Dian (Teacher)
Comment (C2) →

a) I really appreciate of this CDM project development, because from this we expect very low negative impacts to local community.

Question (Q2) →

a) What is the considered-normal noise level for human ears? Because I am concerned of high noise level during wells testing activities whether it is acceptable to people live in the surrounding area.
b) I propose to have a noise level detector, so if the noise level is above the normal noise level could be accepted by human ears, we could notify the company.
c) Please also be more concern about road construction and maintenance to the Ibun Sub-district.

Answer: Mr. Tavip Dwikorianto

a) First of all, we do apologize if the noise level was considered high during the past wells testing activities. We will try our best to prevent this situation in the future. We will further improve our socialization or notification to the surrounding community during our wells testing activities.
b) For the road construction and maintenance, we will coordinate with PT. Indonesia Power (IP).

Answer: Mr. Fahmi (HSE Manager, PGE)

a) Human standard noise level for working area is 85 db(A), which will not cause a hearing problem during 8 working hours per day. While for standard noise level for school or teaching process should be lower, I estimate it is around 55 db (A), however I would need to find the justification document for my statement.
b) Actually, we do have a noise level meter, or so-called the sound level meter. During wells testing activities, we perform noise level measurement in the local neighbourhood and schools. We do this as a preventive action and also quality control of the noise level coming from our wells testing activities. If the noise level exceeds the government regulations, we inform the operation production division to minimize noise or postpone the wells testing. For

your information, the noise level is influenced by wind direction. Therefore, we would expect community to actively inform us if there is a noise level increase in the surrounding area. I also apologize if we fail to properly socialize our last wells testing activities that caused discomfort for people in the surrounding area.

3) Mr. Memet (Non-Governmental Organization)
Comment (C3) →

a) I do appreciate of Kamojang Unit 5 geothermal power plant effort to be one of power plants to apply the CDM scheme in the Kamojang area.

Question (Q3) →

a) Since the geothermal potential began to be explored in 1980, perhaps some cultures among the Kamojang community might have been lost. Since the PGE project is located in the Kamojang region, please also occasionally inform to us the history of Kamojang geothermal project during the company activities.
b) How do you calculate the CERs of 160,000 tCO2/year?

Response: Mr. Tavip Dwikorianto

a) Thank you for your input. We've done a nursery of local plants together with the surrounding community, maybe in the future we can synergize our local plants nursery so that we can quickly spread in the Kamojang region.

Answer: Mr. Tavip Dwikorianto

a) Regarding the history of Kamojang geothermal project, we can further discuss in more details, as I aware that the culture should be maintained properly.

Answer: Mr. Leonardo Sidabalok

b) We estimate the calculated value of the CER based on several parameters, which are the capacity of geothermal power plant, geothermal power plant operating hours in one year, Jamali grid emission factor, geothermal power plant load factor, and the assumption value of project emission. We use the methodology based on the methodology of the UNFCCC. So the calculation is :
c) 30 MW x 90% x 8760 hours/year x 0.741 ton CO2eq./MWh – 10% (estimated for project emission) = 157,735.188 tons CO2eq./year or, roughly we can say 160,000 tons CO2eq./year.

Answer: Mr. Dicky Edwin Hindarto (Indonesian DNA)

b) Basically these calculations derived from the comparison of the emissions generated from power plants that use fossil fuels, like coal or diesel, to the emission arising from this geothermal power plant, then they figure out that number. Keep in mind that the power plants that use fossil fuels are located in Java-Bali interconnection system. So the power plant that to be built using fossil fuels to generate the electricity is now replaced by this geothermal

power plant. As explained in the presentation by Mr. Leonardo, that the power plants using fossil fuels will generate emissions such as CO2 that during their operation time the emissions will be accumulating in earth's atmosphere causing the global warming. This geothermal power plant is almost no emission generated but only hot steam that does not pollute the environment, so the geothermal power plant is much cleaner than fossil fuel power plants.

4) Mr. Dede Sutisna (Ibun Sub-district Representative)
Comment →

a) I am interested in the plan for development of Unit 5 Kamojang geothermal power plant. I as a citizen of Kamojang feel happy that this project will take the welfare of the surrounding communities.

Question →

a) I have concerns about local employment for this project could be not accommodated, so we expect the role of the PT. PGE to further enhance community development programs for the community. We are in the Ring 1 area, closest to the project site, and we have been assisted by PT.PGE, but if we may ask that PT. PGE can be more assist us in the future.

Answer: Mr. Tavip Dwikorianto

a) The Unit 5 is currently still under the project planning phase, so it's not yet commercially operated, therefore there is nothing yet to share with nearby community. During the implementation of CSR we are working with the third party, Dompet Dhuafa, so there will be someone who be able to oversee the development of our CSR program in order to know the advantages and disadvantages of our program. Regards to our CSR, we have done to empowering the people for sheep farm and medicinal plants. The CSR programs that we've done has been through the stage of mapping, so we know what kind of the CSR program that should be done. For the future, if people think there is a program that is more applicable then it can be delivered to us.

5) Mr. Yunus (Head of community health center / Puskesmas of Sudi are)
Comment →

a) We have performed direct observation at the Ibun sub-district since 1997, where we had conducted a study of 1,000 people in the region and we are grateful for the result of no negative impacts on public health. And we make a report to our principal at the provincial level for every month mentioned the public health impact due to the operation of geothermal power plants. We also support the operation of this geothermal power plant because until now we have not received complaints from the public from the local community of RW VI and RW VII of Ibun District.

6) Mr. Yaya Mulya (Head of Kamojang village)
Question →

a) How many people who have been granted for tree nursery?

b) How many seeds are provided?

Response: Mr. Fahmi (HSE Manager, PGE)

a) I do not have the data of the exact number at the moment, but we have the receipt and I can show you that later on.
b) We have distributed 36,000 tree seedlings. Based on our survey three months ago, some of the seedlings are well maintained and some there are not maintained. In the future we will evaluate the parties that who will deserve for the tree seedlings.

7. Mrs. Wiwi (Head of Mekarwangi village)
Comment →

I would like to thank to PT. PGE, that our village has received 9,000 tree seedlings. Hopefully this can be useful for the residents of Mekarwangi village.

Report on consideration of comments received

>>
The comments received were either questions concerning the project, or broad statements in support of the activity. General concern on community development plan for local people nearby project area was also raised. Several community development programmes have been performed by PGE (described in the project EIA documents).
No negative comments have been received on the project.

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.

	Method Chosen (include all known details e.g. location of book, phone, number, identity of mediator)	Justification
Continuous Input / Grievance Expression Process Book		
Telephone access		
Internet/email access		

Nominated Independent Mediator (optional)		

All issues identified during the crediting period through any of the Methods shall have a mitigation measure in place. The identified issue should be discussed in the revised Passport and the corresponding mitigation measure should be added to sustainability monitoring plan in section G.

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 property and uniqueness of indigenous people. The project is not complicit in Human Rights abuses.	The project respects internationally proclaimed 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	Low Risk	n/a

	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 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	n/a	n/a

	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 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.	n/a	n/a
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	Low Risk	n/a

	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.		
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 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)	Low Risk	n/a
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	Low Risk	n/a

	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 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	Low Risk	n/a

	discrimination in employment (No.111) and Convention on equal remuneration (No.111).		
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 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.	Low Risk	n/a
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	Low Risk	n/a

	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 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 traditional local communities.	Kamojang Geothermal Project is development geothermal field of the existing Kamojang geothermal power plants. Before the start of project implementation, the company has developed Environment Impact Assessment (EIA) document, which disclose the potential 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.	n/a	n/a
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	Low Risk	n/a

	eradication. There is corruption vulnerability at Kamojang 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.		
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**	**Defined by project developer**	Negative impact: score '-' in case negative impact is not fully mitigated score 0 in case impact is planned to be

		MDG goals		fully mitigated No change in impact: score 0 Positive impact: score '+'
Air quality	To monitor the air quality, PP randomly collected measurement from 7 sampling points. The following parameters were monitor to measure the air quality: a. SO_2 b. NO_2 c. O_3 d. HC e. TSP f. NH_3 g. H_2S The result of ambient air quality measurement as mentioned above indicates that its concentration is still below the required concentration as per Government Regulation. No. 41 in 1999 (EIA document p.III-7). 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**			0
Water quality and quantity	A. Water Quality The water quality is divided into two categories: Surface water and Ground Water. To indicate the surface water quality, PP collected samples from 6 sampling			0

	points. The test result indicated that the surface water quality merely meets the standard, except for these parameters: - Copper (Cu): copper content at six sampling points were slightly higher than the standard. - COD and BOD in Cikaro River. - TSS in Sukuh Village River. - pH in Cipanasahan River. The municipal waste from local village resulting the high content of BOD, COD and TSS parameters. To indicate the Ground Water quality surrounding the project site location, PP collected samples from 5 sampling points. The test result indicates the water quality fulfill the Clean Water Standard as stipulated in Health Minister Regulation No. 416/Menkes/Per/IX/1990. However, pH level of water sampling taken from Cikaro River, Kampung Pangkalan Village and 3 MW Mini Geothermal Power Plant project site plan were slightly lower than the standardized pH range level. The project main activity is geothermal steam utilization for electricity generation. The quality of water utilized to transfer the heat energy 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**			
Soil condition	**Soil condition** The project activity will not produce any waste, which decreases soil condition in quality and/or quantity. **Earthquake** The extraction will not cause any			0

	earthquake impacts. **Thus, this indicator is scored neutral.**			
Other pollutants (noise pollutant)	To measure the noise level at the work environment, PP took measurement from 12 different locations. The measurement showed that the noise level is relatively low. The highest noise level is at the 3 MW Geothermal Power Plant site due to wells maintenance and at Kamojang Unit-5 Power Plant site due to machines operational activity. No significant change compared to the baseline, since the plant will be a closed circulation system. Since 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 landscape, while vegetation surround the project plant site is categorized as Pine Forest. The vegetation surround the Kamojang Unit-5 Steam Field concession is categorized as Production Forest. FAUNA PP records 28 types of fauna existing surround the project site, consist of: 7 mammal; 1 reptile; 1 amphibian; and 19 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.**			0
Quality of employment	The project owner has implemented OHSAS standard 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 Kamojang Unit-5 geothermal power plant would give positive impact to the local villagers since the project will absorb many		**Baseline:** Without the implementation of the project activity, the local villagers will continue their activities as farmer or blue-collar labor. **Project Activity:**	+

<table>
<tr>
<td></td>
<td>workers during the construction phase.

During the construction phase, project activity will provide job opportunity for non-skill workers. However, during the operation phase only skilled and trained workers could have a position at the project site.

Thus, this indicator is scored positive.</td>
<td></td>
<td>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</td>
<td></td>
</tr>
<tr>
<td>Livelihood of the poor</td>
<td>1. The number and density of population around the project site:

A. Bandung District, Ibun Sub-district:

<table>
<tr><th></th><th>Ibun Village</th><th>Mekarwangi Village</th></tr>
<tr><td>Population number</td><td>7,418</td><td>6,310</td></tr>
<tr><td>Work force (%)</td><td>60</td><td>60</td></tr>
<tr><td>Household number</td><td>2,223</td><td>1,697</td></tr>
</table>

B. Bandung District, Ibun Sub-district:</td>
<td></td>
<td></td>
<td>0</td>
</tr>
</table>

	Laksana Village	DukuhVillage
Population number	6,665	6,660
Work force (%)	60	60
Household number	2,114	2.014

C. Garut District, Samarang Sub-district:

	Sukakarya Village	Sukarasa Village
Population number	6,857	8,050
Work force (%)	57	60
Household number	1,872	1,952

D. Garut District, Samarang Sub-district:

	Samarang Village
Population number	9,365
Work force (%)	60
Household number	2,604

2. Livelihood of local community

Information regarding the type 0f livelihood surrounding the project site, PP conducted survey and local authorities inventory records. The survey shown that most villagers work as farmer or blue-collar labor and only a few works as private company employee, civil servant, teacher, etc.

The local villagers livelihood are still below the poverty line.

3. **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 provide employement opportunities during construction and operation phases. Most workers will come 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 resident surround the power plant location or the power plant location itself is divided into native resident and new-comer resident. There are several resident coming from outside the district to find work opportunity since PP start to explore the geothermal steam field nearly 10 years ago. Based on the study on the educational level of the residents, it is evident that the existence of PGE steam field and power plant did not improve the educational level of surround villages. Even though the power plant operational will open road access to reach the district town (Junior and Senior High School only available at the district town), the low socio-economy condition of local villagers become barrier to achieve higher education. 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 neutral impact.**			0

Additional note:

The education level for the villages as mentioned above is shown below:

Education level	Laksana Village, Pangkalan Hamlet	
Native resident	Male (%)	Female (%)
Uneducated	0	0.42
Toddler (not yet entering school)	6.89	8.77
Kindergarten	15.87	15.87
Elementary school	5.43	25.89
Junior high school	3.34	7.31
Senior high school	3.55	5.85
Diploma	0	0.84
Undergraduate	0	0

Non-formal education

Only a few of villagers have taken a non-formal education/course to improve their welfare level. The courses took by the villagers such as: sewing, computer, livestock and repair shops.

Quantitative employment and income generation	The project activity would hire un-skilled worker for temporary working opportunity with detail as below: - 50 workers for land preparedness, - 100-300 workers for construction phase Those numbers of temporary employment opportunity is equivalent with 3% of total workforce from surrounding villages. The villagers could also provide business opportunities and increase their income by opening a small food			0

	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 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
Water quality and quantity	EIA (Environment Impact Assessment) approved by local government pg III-31 – III.39
Soil condition	EIA (Environment Impact Assessment) approved by local government pg III-20 – III-24
Other pollutants	EIA (Environment Impact Assessment) approved by local government pg III-10
Biodiversity	EIA (Environment Impact Assessment) approved by local government pg III-69 – III.78
Quality of employment	EIA (Environment Impact Assessment) approved by local government pg III-122 – III.141
Livelihood of the poor	EIA (Environment Impact Assessment) approved by local government pg III-95
Access to affordable and clean energy services	
Human and institutional capacity	EIA (Environment Impact Assessment) approved by local government pg III-104

Quantitative employment and income generation	EIA (Environment Impact Assessment) approved by local government pg III-122 – III.141
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]

The project is using the latest version of the methodology and a conservative baseline approach. Please refer to section B.4 of the PDD.

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.

The Gold Standard®
Premium quality carbon credits

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 2418

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.

Influence. Innovate. Inspire.
www.cdmgoldstandard.org

The Gold Standard®
Premium quality carbon credits

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

Influence. Innovate. Inspire.
www.cdmgoldstandard.org