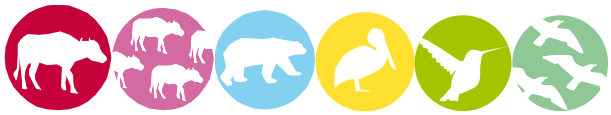
ANNEX R – PASSPORT TEMPLATE

CONTENTS



SECTION A. Project Title

[See Toolkit 1.6]

Title: Project Karaha Unit 1 PT. Pertamina Geothermal Energy

Date: 08/19/2013

Version no.: 01

SECTION B. Project description

[See Toolkit 1.6]

General Description of project activity

Estimated project start date:

18/01/2012 (Date of equipment mobilization of the 1st well drilling)

The Project Karaha Unit 1 PT. Pertamina Geothermal Energy (hereafter referred to as Karaha or the Project) developed by PT. Pertamina Geothermal Energy (PGE), hereafter referred to as the Project Developer, is a geothermal power plant in West Jawa, Indonesia (hereafter referred to as the "Host Country"). The Project's net installed capacity is 30 MW, while its total gross power output will 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 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 Karaha and Talagabodas 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), stateowned electricity company) interconnection point in the Karaha 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 of 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 Karaha geothermal field, instead of utilizing typical power generation with more carbon intensive technology. 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 Country3. Specifically, the project:

- Increasing community development and corporate social responsibility at Karaha 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 Karaha 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

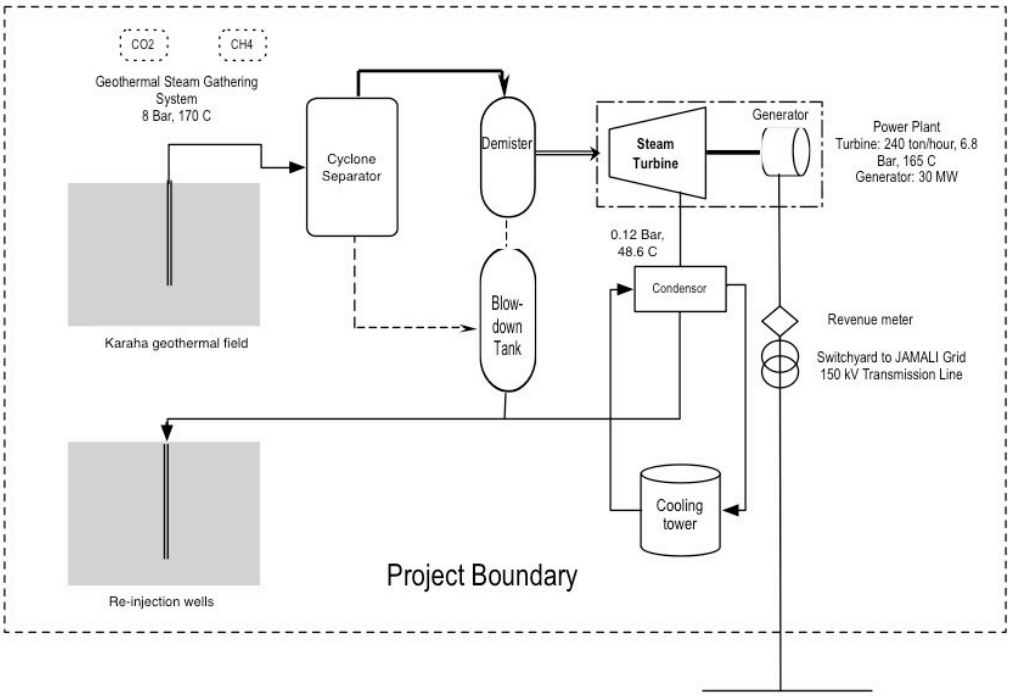
The Project uses well-established geothermal power plant technology for electricity generation and transmission, with total gross power output of 31.8 MW and net installed capacity of 30 MW. The project consists of a geothermal power plant with a steam turbine generator, gas extraction system, switchyard and utility system. The steam for the project will be provided by active geothermal wells from the Karaha 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 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 contractor is experienced in handling and operating equipment of this nature. Steam collected from the Karaha geothermal field is sent to the Karaha 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.

Figure 2 – Mass energy flow diagram of Karaha 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

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 81.6 million *(Expected electricity price = USD 90/MWh)*
Head of Agreement (HoA) between PGE & PLN (for eight geothermal areas)	17 February 2010	Head of Agreement (HoA) is an agreement between seller e.g. PGE and buyer (e.g. 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

Environmental Impact Assessment / EIA Report	17 February 2010	Approval by the Governor of West Java Province
PGE Board of Directors approval	12 July 2010	Minutes of Meeting described PGE Board of Directors assessment and approval to develop Karaha unit 1 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
PPA signed with PLN	11 March 2011	Price = USD 8.25 cent / kWh (30 years from COD)
Equipment mobilization to the 1st well drilled	18 January 2012	Equipment mobilization work order for Karaha-4.1
CDM project development Assignment Letter	17 April 2012	PGE Director letter on the bidding result, assignment to South Pole to develop CDM
ERPA signing between South Pole Carbon Asset Management Ltd. and PT. Pertamina Geothermal Energy	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	Karaha feasibility study report
Power plant operation start	1 January 2014	Karaha 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	☐

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:__08/01/2012_____

SECTION D. Unique project identification

D.1. GPS-coordinates of project location

[See Toolkit 1.6]

	Coordinates
Latitude	7°8'54" South
Longitude	108°5'6" East

Explain given coordinates

Karaha geothermal power plant is located approximately 100 km southeast of Bandung, the capital of West Java province.

City/town : Tasikmalaya Regency

Province : West Java Province

The exact location of the geothermal power plant is defined using GPS coordinates -7.148416 South, 108.0850411 East or 7°8'54" South and 108°5'6" East.

D.2. Map

[See Toolkit 1.6]

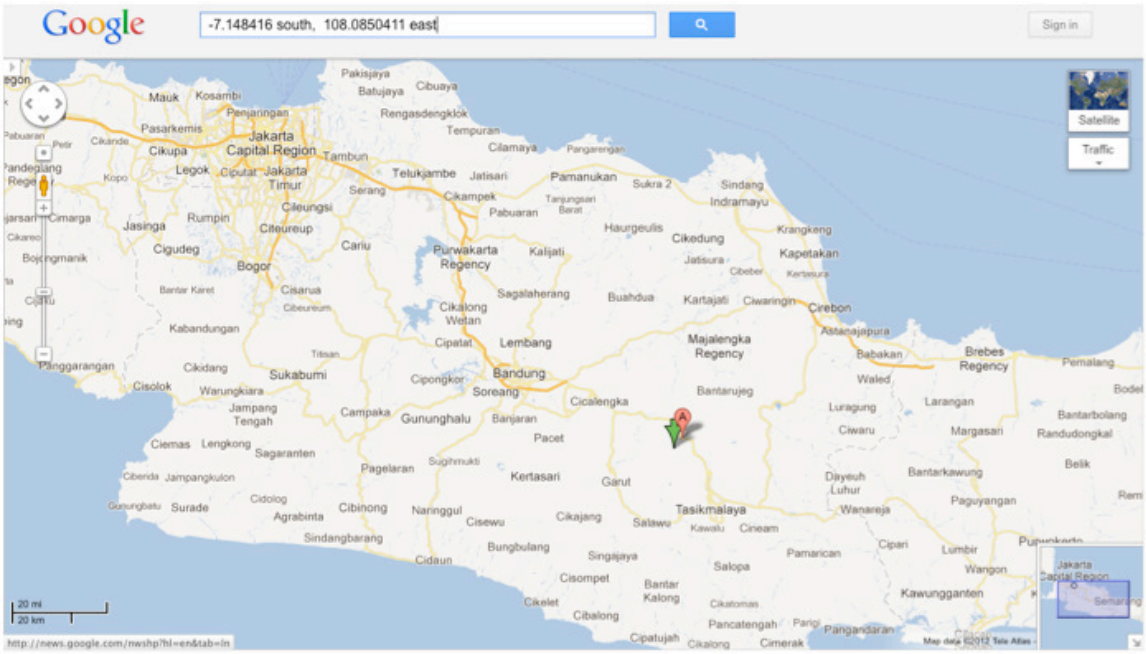


Figure 1 – Map of Karaha geothermal power plant (source : maps.google.com)

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 21 May and 22 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)

Comments received from stakeholder consultation at Kadipaten Village:

Mr. Ujang Wahyu, Kadipaten Village (Community Empowerment Organization)
Q1: Please explain how this project could be benefit to local people with regard to employment opportunities?

Mr. Ryan and Mr. Made Budy, PGE
A1: This project will require some low skilled labour during construction and drilling phases. PGE will inform village heads regarding employment opportunities in the project to ensure that workers for these 2 phases could be from villages around the project. While during the operational stage, PGE will require more skilled labour to become engineers or operators in the Karaha geothermal power plant. However, we would also encourage local people to apply for these jobs if they have expertise and knowledge through the recruitment process that is held by PGE.

Mr. Enjang, villager
Q2: Since roads in the Kadipaten village have been used for the access road of the projects and heavy equipments, these roads need to be repaired.

Mr. Made Budy , PGE
A2: During the construction and drilling phases, we try our best to maintain roads conditions and also we will coordinate during equipment mobilization to ensure local people safety and comfort.

Mr. Aang, villager
Q3: Is it possible to market our crop as part of your CSR program?

Ms. Rini, PGE
A3: The CSR program will be commenced as soon as the project is in operation and profitable, which could be years long. However, PGE will of course try the best to identify local community around the project, especially Ring 1 area, and propose these needs to the management.

Mr. Cecep Jayali, youth organization representative
Q4: Could PGE involve youth of the local region in the project? Please give priority to local youth, rather
than employing outside youth to work in the project.

Mr. Ryan, PGE
A4: As mentioned earlier, PGE will inform and coordinate with village heads regarding employment opportunities at the project site. We would ask village heads to recommend candidates of certain age and
skills thus we could forecast any suitable job for them. Surely, we will keep in touch with the village heads during the construction until operational phase.

Mr. Dadang, village head
Q5: Is there any health program for children and scholarships for students available from this project?

Ms. Rini, PGE
Q5: As mentioned before, the CSR fund and activities will only be applied when the project is in operation and profitable. We will keep in mind about the health and education program during needs of
local people identification. Once again, CSR activity will be based on local people needs that will be proposed to the management.

Comments received from stakeholder consultation at Dirgahayu Village:

Mr. Komin, village head
Q1: Will water use by the project cause water shortage in the area that could affect surrounding community?

Mr. Ryan, PGE
A1: Before we build the WPS (water pump station), we must first get the water use permit (SIPPA) from the local government. Based on the permit, it is mandatory to use water debit as described in the permit. In addition to that, WPS built will only act as a reservoir because water debit used will be in accordance with the permit, thus there will not be any water debit reduction as before the WPS is built.

Mr. Saepudin, Community empowerment organization
Q2: Will there be any difference to the project because now it is developing under CDM?

Mr. Rohmadi Ridlo, BPPT

A2: As explained before, the Karaha geothermal power plant project will be submitted to the UNFCCC for CDM project registration because the project produces less greenhouse gases emission if compared to other fossil-fuels based power plant e.g. coal power plant. However, basically, there are no different between registering the project under CDM or not as Karaha will still be a geothermal power plant. Currently, this project is under CDM consultant procurement process and / or buyers of carbon credits process in our headquarter office.

Mr. Ekoswara, village head
Q3: Will well drilling cause erosion or overflow like Lapindo case?

Mr. Made Budy, PGE
A3: During drilling activity, we used a casing to avoid any landslide or land collapse. The casing is then cemented so it will not shake or move. During drilling also, we use equipment like BOP (blow out preventer) so if there is a high-pressure steam, it can be diverted to a safe place such as pond, then immediately closed.

Mr. Ende, youth leader
Q4: Will the community involved in this project?

Mr. Ryan, PGE
A4: We will coordinate with relevant village authorities in relevant to the project needs of workers. The village authorities will provide candidates names from their villages before recruitment process start. In the mean, we will inform village heads of any future employment.

Ms. Siti Aisah, women participation organization
Q5: Is the local health service “posyandu” program could be assisted by this project?

Ms. Rini, PGE
A5: Definitely, we will coordinate and include this activity into our CSR program. However, the CSR program will only be started as soon as the project is in operation and profitable. Nevertheless, we will do assessment of local community needs so we could submit a proposal of local community activity to our management for approval. Thus, we would kindly ask for your support in the project development until operation so we could mutually benefit of the project existence.

Mr. Aceng Tatang, village head
Q6: In the event of an undesirable situation such as drought, could we meet you to ask for assistance?

Mr. Ryan, PGE
A6: Absolutely, you can meet us (public relations and HSE officers) at our office in the project site. With good coordination between the village head and us we could identify of any assistance needed according to internal procedures.

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	Low Risk	n/a

	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 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	n/a	n/a

	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 location is 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. Republic Of Indonesia has ratified ILO Convention No. 169 regarding the Indigenous and Tribal People's right and in-force by several regulations (for example Indonesia Regulation No. 21 in 2001 regarding special autonomy for Papua)		
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 alter, damage or remove/replace 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 an archaeological subject located at or near the project location, they will report the finding to PT. PGE Head Office and Local Archaeological Office. Hence	n/a	n/a

	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. In 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 Labour to recruit new employees or labours. A work contract is available and need to be agreed by both worker and company. This work contract rules out the right and obligation of labour to the company. By having the agreed work contract between the company and	Low Risk	n/a

	labour, it is confirmed that no forced or compulsory labour is involved in the project. All employees voluntarily are registered 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 refers to the Ministry of Manpower Regulation which rules out not to employ labour 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)	Low Risk	n/a
7. The project does not involve and is not complicit in any form of discrimination based on gender,	The company applies the rules of recruitment TKO B-003/PGE710/2011-S0. The	Low Risk	n/a

race, religion, sexual orientation or any other basis.	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).		
8. The project provides labours 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 labours safety. To avoid woman sexual abuse potency at PT. PGE work area, all women labour who need to work late will be accompanied by a security guard or a colleague. The labour who work for PT. PGE are covered by health	Low Risk	n/a

	insurance. The company has developed guideline and procedure to mitigate the negative impact of any health and safety emergencies.		
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 electricity generation. Electricity generated by the project will be delivered to the grid. Since the potential geothermal associated with volcanoes, the site of the project is located at the mountain area. 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 their 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 permited). Project should submit an application for a permit of Hazardous Waste Temporary Storage, create scheme how to manage/treat them, and also submit an application to Ministry of Environment for permission to treat drilling	Low Risk	n/a

	cutting. 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.	Karaha Geothermal Project is a greenfield project. 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	n/a	n/a

	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 Karaha Geothermal project site. Hence, to avoid any form of corruption, the company has developed the GCG (Good Corporate Governance). The Compliance Form is needed to be filled-in by all employees to monitor the implementation of GCG. All the permits which are legally required 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.org/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 are monitored to measure the air quality: a. Dust b. NO2 c. SO2 d. CO e. NH3 f. H2S 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 To indicate the water quality, PP collected samples from 18 sampling points. One of the sampling points is final waste-water discharge or the river body that potentially affected by the operation of project activity. The sampling is taken during the EIA document development process (before project activity operational stage). The result of laboratory analysis indicates that the water is polluted. However, the pollution is not caused by project activity, instead the pollution is resulted from daily activities of community surrounding the project activity. 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	**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 earthquake impacts. Thus, this indicator is scored neutral.			0
Other pollutants	The noise level was measured at 12 different sampling points. The measurement showed that the noise level is relatively low. No significant change compared to the baseline, since the plant will be a closed circulation system.			0

	Noise level during operation is estimated to be below the limits allowed by the regulations. Thus, this indicator is scored neutral.			
Biodiversity	FLORA The Karaha steam field concession area is a protected forest field under supervision of Tasikmalaya and Garut Forest Stakeholder Union (managed by Perhutani Public Company). Perhutani lease the forest area to local farmer hence the farmer could conserve the Pine tree plant seed while they plant the agricultural crops plantation. The vegetation planted around geothermal plant is Pine Trees. FAUNA The type of fauna available in the surrounding project site are: a. Mammal → boar, monkey, squirrel b. Aves → 40 species from 19 families. c. Reptile and amphibian → lizard, Javanese precil (mini frog) and bancet (swamp frog). WATER BIOTA a. Fish → catfish, eel, etc. b. Plankton → 13 types of phytoplankton and 5 types of zooplankton. c. Benthos → 19 types of benthos 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 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		**Baseline:** Without the implementation of the project activity, the local villagers	+

<table>
<tr>
<td></td>
<td>project activity would enhance the quality of employment.

The implementation of Karaha Unit 1 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.</td>
<td></td>
<td>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:

• 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. Tasikmalaya District, Kadipaten Sub-district:

<table>
<tr><th></th><th>Kadipaten Village</th><th>Dirgahayu Village</th></tr>
<tr><td>Population number</td><td>4,775</td><td>4,745</td></tr>
<tr><td>Work</td><td>59</td><td>59</td></tr>
</table>
</td>
<td></td>
<td></td>
<td>0</td>
</tr>
</table>

force (%)		
Household number	1,221	1,185

B. Tasikmalaya District, Ciawi Sub-district:

	Citamba Village	Bugel Village
Population number	5,676	5,827
Work force (%)	59	60
Household number	1,760	1,642

C. Garut District, Pangatikan Sub-district:

	Sukahurip Village
Population number	5,728
Work force (%)	59
Household number	1,185

D. Garut District, Karang Tengah Sub-district:

	Cinta Village	Cintamanik Village
Population number	2,923	3,473
Work force (%)	59	60
Household number	1,142	989

2. Livelihood of local community

Project Owner conducted a survey during the EIA document drafting. The survey shown that most villagers work as farmer or small traders. The local villagers livelihood are still below the poverty line. This is evident from the measurement result of the household socioeconomic level by

	using BPS measuring standard for wealthy household. Several reasons below could be the cause for the poverty: - Limited farming land owned by individual - Varied land ecological condition - Isolated villages - Unpredictable climate condition 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 employment 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** Kadipaten (KD), Cintamanik (CM) and Cinta (CT) Villages are the villages located in surrounding the project activity, which will be directly influenced by the implementation of project activity. The education level for the villages as mentioned above is shown below: Education | KD | CT | CM			0

	level (%)					
	Pre-school	8.1	2.5	3.2		
	Uneducated	-	0.5	-		
	Elementary school (unfinished)	1.2	-	-		
	Elementary school/equal	36.1	70	77.3		
	Junior high school	27.1	16.5	12.8		
	Senior High School	26.3	10.1	6.3		
	Diploma	0.1	0.5	0.5		
	Undergraduate	1.1	-	-		
	Graduate	-	-	-		

From the table above, the highest education level at Cinta and Cintamanik villages is Diploma while for Kadipaten Village is Undergraduate. The most common education level for all three villages is Junior High School. This is because of the government program, which requires basic education level up to Junior High School.

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, agriculture, bee livestock and baby-sitting.

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.

Quantitative employment and income generation	The project activity would hire about 10 – 15% of the surrounded villages. Hence the project would provide temporary jobs and increase the income level of the hired workers. Thus have a temporary positive impact on their economic well-being. 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	Information about 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 potential 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 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-5
Water quality and quantity	EIA (Environment Impact Assessment) approved by local government pg III-13 – III-23
Soil condition	EIA (Environment Impact Assessment) approved by local government pg III-48 – III-57
Other pollutants	EIA (Environment Impact Assessment) approved by local government pg III-11
Biodiversity	EIA (Environment Impact Assessment) approved by local government pg III-68 – III-69
Quality of employment	
Livelihood of the poor	EIA (Environment Impact Assessment) approved by local government pg III-80
Access to affordable and clean energy services	EIA (Environment Impact Assessment) approved by local government pg III-110 – III-115
Human and institutional capacity	EIA (Environment Impact Assessment) approved by local government pg III-81

Quantitative employment and income generation	
Balance of payments and investment	
Technology transfer and technological self-reliance	

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
	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.

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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 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.

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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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