PT. SARANA MULTI INFRASTRUKTUR

INDONESIA GEOTHERMAL RESOURCE RISK MITIGATION PROJECT (GREM) (P166071)

DRAFT ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK

INCORPORATING:

RESETTLEMENT POLICY FRAMEWORK

INDIGENOUS PEOPLES'PLANNING FRAMEWORK

Final Draft

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LIST OF ABBREVIATIONS

AOI	Area of Influence
AMDAL	Analisis Mengenai Dampak Lingkungan (Environmental Impact Assessment)
BG	Badan Geologi (Geological Agency)
BPN	Badan Pertanahan National (National Land Bureau)
BPS	Badan Pusat Statistik (National Statistical Bureau)
Bupati	Head of Regency
CTF	Climate Technology Fund
DED	Detailed Engineering Design
DG	Directorate General
DG EBTKE	Direktorat Jenderal Energi Baru Terbarukan dan Konservasi Energi*(*Renewable Energy and Energy Conservation)
EA	Environmental Assessment
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESIA	Environmental and Social Impact Assessment
ESMF	Environment and Social Management Framework
ESMP	Environment and Social Management Plan
ESS&BCM	Environmental and Social Safeguards and Business Continuity Management Division, PT SMI
GCF	Green Climate Fund
GEF	Global Environment Facility
GFF	Global Fund Facility
GEUDP	Geothermal Energy Upstream Development Project
GIS	Geographical Information System
GNZ	Government of New Zealand
GOI	Government of Indonesia
GREM	Geothermal Resource Risk Mitigation Project
GRM	Grievance Redress Mechanism
IBRD	International Bank for Reconstruction and Development
IGF	Investment Guarantee Fund
IIFF	Indonesia Infrastructure FinanceFacility
IPs	Indigenous Peoples
IPP	Indigenous PeoplesPlan
IPPF	Indigenous Peoples Planning Framework
ISA	Indonesian Society of Appraisers
KAT	Kelompok Adat Terasing (Isolated Indigenous Community)
Kecamatan	Sub-District
Keppres	Keputusan Presiden (Presidential Decree)
LARAP	Land Acquisition and Resettlement Action Plan
LMAN	Lembaga Manajemen Aset Negara(State Asset Management Agency) projects
MEMR	Ministry of Energy and Mineral Resources

MHA	Masyarakat Hukum Adat (Customary Law Community)
MoF	Ministry of Finance
MW	Megawatt
NGO	Non-government Organization
PCR	Physical Cultural Resources
PCRMP	Physical Cultural Resources Management Plan
PMK	Government Regulation
PMU	Project Management Unit
PPP	Pubic Private Partnership
PT SMI	PT Sarana Multi Infrastruktur (Persero)
RUPTL	Electricity Supply Business Plan or Rencana Usaha Penyediaan Tenaga Listrik
SOE	State Owned Enterprise
SMT	Site Management Team
SPPL	Surat Pernyataan Kesanggupan Pengelolaan dan Pemantauan Lingkungan (Letter of Environmental Management and Monitoring)
TA	Technical Assistance
tCO_2	Tons of Carbon Dioxide
TOR	Terms of Reference
UKL/UPL	Upaya Pengelolaan Lingkungan - Upaya Pemantauan Lingkungan (Environmental Management and Monitoring Plan)
UUD	Undang-undang Dasar (Constitution)

1 INTRODUCTION

1. This document details the environmental and social safeguard policies, principles, procedures, institutional arrangements, and workflows of PT Sarana Multi Infrastruktur (Persero) (PT SMI) (borrower) to guide the Public Enterprise (SOE or SOE subsidiary or public service agency) and Private Sectors (sub-borrowers) in avoidance, minimization, or mitigation of any adverse environmental or social impacts of infrastructure projects supported by the Geothermal Resource Risk Mitigation Project (GREM).

1.1 Background

2. Indonesia, a diverse archipelago nation of more than 300 ethnic groups, has charted impressive economic growth since overcoming the Asian financial crisis of the late 1990s. Today, Indonesia is the world's fourth most populous nation with over 260 million people, the eight largest economy globally and the largest economy in Southeast Asia with a gross domestic product (GDP) per capita in terms of purchasing power parity of US$11,612, and a member of the G20. With its large yet dispersed population, maintaining modern and efficient infrastructure is vital for Indonesia to connect with markets at home and abroad in order to sustain robust growth. To this end, improving infrastructure is a top policy priority for the Government of Indonesia (GoI). In the 2016 budget, the GoI earmarked the highest amount ever allocated for infrastructure development – approximately US$22.9 billion – which will remain a priority at least for the next four years according to the 2015-2020 medium-term development plan. With over 24 state-owned enterprises (SOEs) across different sectors, many of the key infrastructure projects and programs have been implemented by SOEs. The challenge lies in developing a risk-sharing model so that SOEs benefit from government-backed, lower borrowing costs without exposing the national budget to undue fiscal burden. Meanwhile, the GoI has made significant efforts in introducing many regulatory reforms to create a more conducive environment for private sector participation to close the infrastructure gap.

3. The primary energy mix in Indonesia is currently made up of 34.6 percent coal, 33.8 percent oil, 23.9 percent gas, and 7.7 percent renewable sources. Total installed power generation capacity is estimated at 54.60 gigawattts (GW) at the end of 2017, excluding captive generation. The country is expected to become increasingly dependent on energy imports of up to about 25 percent of total demand by 2019. The state-owned power company and sole off-taker, PT Perusahaan Listrik Negara (PLN), plans to achieve 99.7 percent national electrification rate by 2025 from a current rate of 93 percent. Meanwhile, constant pressure to keep cost low favors more coal in the generation mix, where new coal plants are expected to lock in several million tons of greenhouse gas (GHG) emissions during their useful life. Meanwhile, Indonesia has committed to a nationally determined contribution of 29 percent GHG emission reduction target. It also has a renewable energy target of 23 percent by 2025, of which seven percentage points is expected to come from geothermal energy.

4. Geothermal power is a baseload generation technology not subject to the intermittency and variability associated with most renewable energy sources. Under the right conditions, it can be cost-competitive with coal or natural gas, which means that countries with such indigenous resources can depend less on imported fuels and increase their energy security. As a cleaner source of electricity, geothermal energy can play a major role in decarbonizing the power sector and furthering the country's climate change agenda. It can also contribute to expanding access to electricity, economic growth, job creation, and boosting prosperity, particularly on the eastern islands where electrification rates are much lower and poverty rates higher than the national average.

5. Geothermal energy is developed through a multi-stage approach that begins with surface investigations followed by exploration drilling to confirm the availability of the geothermal resource, and by delineation drilling to confirm the extent of the resource. The key parameters of geothermal development – temperature, permeability, and resource size – can be estimated from geoscientific surveys, but they can only be confirmed through an exploration drilling program, which in Indonesia is estimated around US$30 million[1] for a minimum of three wells in a greenfield subproject. Exploration drilling requires owner's equity or balance sheet finance, which is put at risk without a chance of recovery if the resource is not adequate. Therefore, even though initial costs for exploration drilling are modest compared to the total cost of developing all stages of a geothermal operation, finding this initial capital can be challenging for developers.

6. The GoI has set an ambitious target to add 6.3 GW of geothermal capacity by 2026,[2] which would translate to a total investment need of about US$27 billion over the next seven years. There are three main sources of funds: public funding, private sector funding, and international support. Public funding and involvement of SOEs will remain strategically important, particularly as part of a drive to increase electrification in Eastern Indonesia, and will need support from international financial institutions (IFIs) and bilateral donors. However, the bulk of the investments will need to come from the private sector. More broadly, achieving the GoI's ambitious target for scaling-up geothermal-powered generation would require: (i) judicious use of public funds while mobilizing private sector capital at a large scale; (ii) implementation of an effective upstream risk mitigation mechanism; and (iii) ensuring a conducive doing-business environment with transparent and competitive licensing and power purchase agreement (PPA) award procedures and effective cost-competition for drilling services, as well as management

[1] Exploration drilling cost can vary significantly depending on the site-specific conditions. Costs could range between US$10 to US$40 million.
[2] This would include 3,305MW in Sumatra, 2,510MW in Java-Bali, 400MW in Sulawesi and Nusa Tenggara, and 75MW in Maluku and Papua. Ministry of Energy and Mineral Resources. 2017. "Power Sector Development Program in Indonesia," December 4, 2017.

of bottlenecks related to drilling in forest areas.[3] Effective facilitation of the necessary sector investments will also require close coordination among key stakeholders, namely the Ministry of Energy and Mineral Resources (MEMR), Ministry of Finance (MoF), Ministry of Environment and Forestry (MoEF), and local governments.

7. Slower-than-desired geothermal development is imputable to low levels of private sector participation, which in turn are in large part due to resource risk - a key barrier to geothermal development which remains unaddressed in Indonesia. Realizing this, GOI's renewed emphasis on geothermal development includes a number of policy interventions specifically designed to address resource risk and mobilize private capital.

8. PT SMI, in collaboration with the World Bank and Climate Funds, is preparing the GREM with the objective to facilitate lending for sub-borrowers in geothermal-based electricity through blended soft loan and by providing technical assistance and capacity building. The focus of this Project development objective is to scale up investment in geothermal energy development and reduce greenhouse gas emissions in Indonesia. The proposed Project will also bring employment for skilled and unskilled workers engaged in drilling, civil works, infrastructure construction, and auxiliary services in up to 20 locations throughout Indonesia, mostly in the Eastern Islands. Through technical assistance to a range of stakeholders, the proposed operation will enhance capacity of key state actors in the sector, thereby facilitating sector development in the long run.

9. PT SMI will be implementing agency of GREM in a financial intermediary function, and is responsible for reviewing the environmental and social safeguard documents prepared by the sub borrowers and for safeguards monitoring throughout the Project.

1.2 Project Description

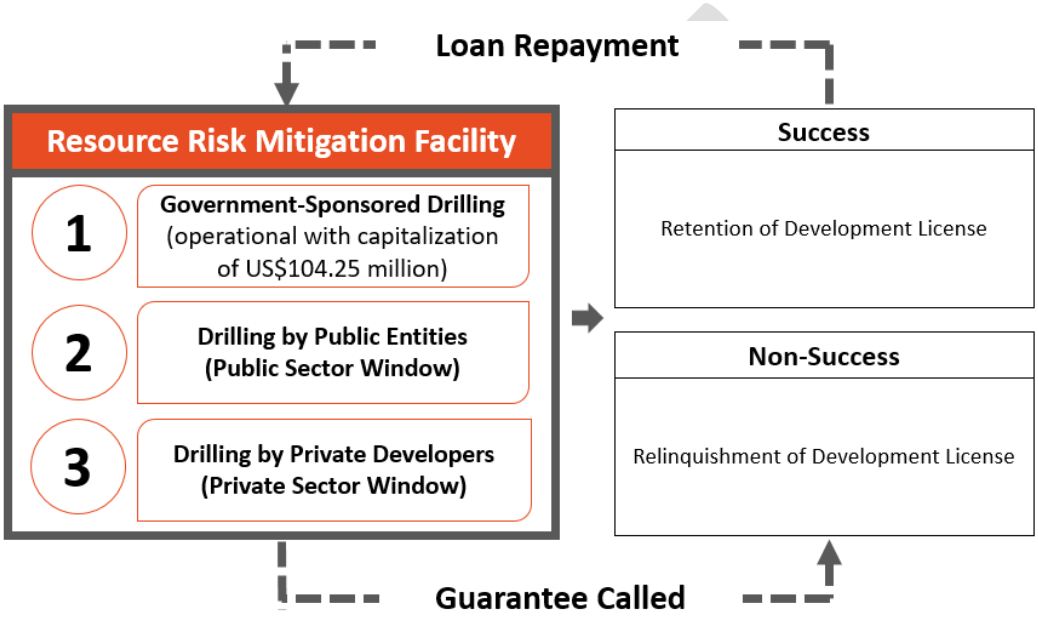
10. The proposed Project will be a Financial Intermediary (FI) operation implemented by PT SMI. As the GoI's designated Fund Manager for the PISP (*Pembiayaan Infrastruktur Sektor Panas Bumi* or Infrastructure Financing for Geothermal), PT SMI will manage the Facility established with support from this Project. The MoF and MEMR, under a Joint Committee, will provide guidance to PT SMI on the strategic-level governance of the Facility.[4]

[3] Land use, particularly in conservation forest areas, is still a significant bottleneck for geothermal development. More than 90 geothermal sites, with an estimated 10-15 GW capacity potential, are located in conservation and protected forest areas ("Geothermal Handbook for Indonesia, BAPPENAS 2014). While recent regulatory changes have been made to accommodate geothermal development in certain parts of conservation forest areas as per Geothermal Law 2014 and Ministry of Environment and Forestry Regulation No. 46/2016, steps will need to be taken to translate the new regulation into clear implementation guidelines agreed by MEMR and MoEF.

[4]MEMR is responsible for the overall coordination of geothermal development in Indonesia, including setting and implementing policies related to allocating geothermal concessions, setting tariff and overseeing supporting regulations such as production

11. Under the GREM Project, a new Geothermal Resource Risk Mitigation Facility will be established. The existing government-sponsored exploration drilling program supported by the GEUDP (Geothermal Energy Upstream Development Project) will become the first window under the Facility, and two additional windows will be created: (i) a ***Public Sector (PUB) Window*** and (ii) ***a Private Sector (PRIV) Window***. Figure 1 illustrates the potential Facility structure.

Figure 1 Proposed Structure of the Geothermal Resource Risk Mitigation Facility



12. The two new windows of the Facility are expected to be financed with an initial capital of US$650 million:
    i. US$25 million soft loan and US$150 million guarantee/contingent financing from Green Climate Funds (GCF);
    ii. US$325 million loan from IBRD to PT SMI[5]; and
    iii. US$150 million from GoI to PT SMI under PISP fund. It is expected that a certain amount of this funding can be put at risk at the discretion of MoF.

13. For both public and private sector developers, the Facility would make available a **soft financing**, which will be sourced from IBRD and GCF as well as from the GoI's PISP (at present it

bonus sharing with local communities from geothermal benefits. MoF is responsible for allocating funds to support sector development through dedicated program (such as PISP), ministerial budgetary allocations, or fiscal incentives.
[5] Either direct loan or on-lent via MoF.

is expected that PISP funding would only be available to public sector developers). For a single sub-project, it is envisaged that the blended soft loan amount is capped at US$30million.

i. For the public sector window, support will be provided to public entities, such as state-owned enterprises (SOEs), SOE subsidiaries, or public service agencies. It is expected that funds from IBRD and GCF would be matched (50/50) by funds from PT SMI (PISP). At the discretion of MoF, the PISP part of the loan could include a contingent grant component with up to 50 percent forgiveness in case the exploration is deemed unsuccessful and the SOE relinquishes the license for the WKP in question. It is expected that additional funding from other donors and climate funding will be added to this facility. The IBRD/GCF financing is only intended to get the public window started and finance the first 3-4 projects.

ii. For the private sector window, developers will be required to contribute own equity equivalent to 25 percent of the total cost of the resource confirmation program (i.e. US$10 million equivalent would be required to match a loan capped at the maximum US$30 million). It is expected that PT SMI would offer a loan accompanied by an option to refinance a portion of the loan through a GCF-backed guarantee/contingent financing (de-facto a partial loan forgiveness), which would become available if and when the developer returns the development license for the WKP in question - it being understood that in such case, the developer will have forfeited his equity. The loan will be for six years (covering both exploration and delineation) with an option to pay back after four years in case no support is needed for delineation. If the developer considers the exploration unsuccessful and hands back the license before four years after loan is effective, the contingent finance can cover up to 50% (exploration only); whereas, if they hand it back after six years (following unsuccessful delineation) the coverage will be reduced to 25% of the original loan amount to reflect the lower risk in the delineation phase. On the other hand, if the exploration/delineation is successful and the developer chooses not to hand back the license because they intend to go on to secure project finance for remaining production drilling and power plant construction, then the loan must be paid back in full (after four or six years respectively) and a success fee must be paid when the project reaches financial closure. From an operational perspective, the proposed Facility would benefit private sector developers after they have financed site infrastructure, thus leveraging site infrastructure development.

14. The Project Development Objective is to “scale up investment in geothermal energy development and reduce greenhouse gas emissions in Indonesia.” This would be achieved through supporting a risk mitigation mechanism for geothermal exploration drilling and building capacity of the client to conduct an efficient exploration and tendering program. The Project has two components: Component 1: *Geothermal Resource Risk Mitigation*; and Component 2: *Technical Assistance and Capacity Building*.

1.2.1 Component 1: Geothermal Resource Risk Mitigation

15. Design Background: *Component 1* will provide financing for the two new windows of the Facility. Public and private sector developers will apply for financing from PT SMI, which will screen the proposals and, under the guidance of the Joint Committee, determine the size of the approved financing package. Based on the project sizes and the proposed support to the developers, the funding allocation is expected to be as follows:

	PT SMI / PISP (complementary financing)	World Bank / IBRD	Green Climate Fund	Private Sector Equity	Total
Public Sector Window	150	25	25	0	200
Private Sector Window	0	300	150	100	550
Facility	**150**	**325**	**175**	**100**	**750**

16. Financing and Risk Sharing: The proposed Project will be a Financial Intermediary (FI) operation implemented by PT SMI. As the GoI's designated Fund Manager for the PISP, PT SMI will manage the Facility established with support from this Project. The MoF and MEMR, under a Joint Committee, will provide guidance to PT SMI on the strategic-level governance of the Facility.[6]The Project will have two components: Component 1, US$650 million, for geothermal resource risk mitigation; and Component 2, US$10 million, for technical assistance and capacity building.

17. Business Model and Fund Management: Each exploration drilling by sub borrowers will be blended financed from PT SMI depending on which sub borrowers window. Sub-projects of the GREM will follow WB's and GoI's safeguards guidelines. The table below summarizes the support between the two main windows, with terms subject to further discussions with key stakeholders and developers (take note that special terms will apply to the JV sub-window).

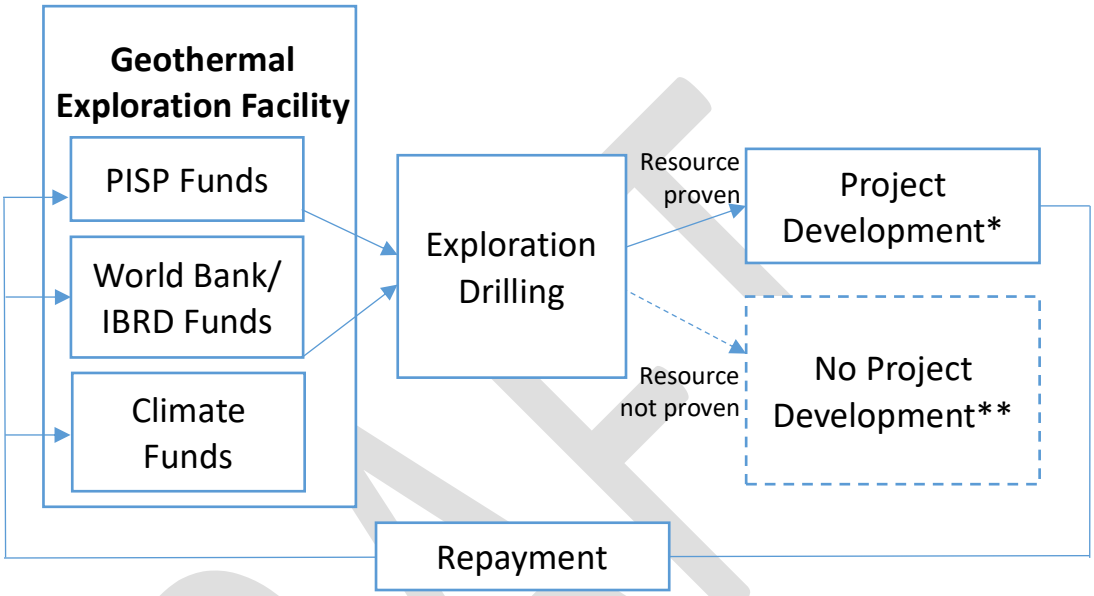
	Public Sector Window	**Private Sector Window**
Coverage	Resource confirmation	

[6]MEMR is responsible for the overall coordination of geothermal development in Indonesia, including setting and implementing policies related to allocating geothermal concessions, setting tariff and overseeing supporting regulations such as production bonus sharing with local communities from geothermal benefits. MoF is responsible for allocating funds to support sector development through dedicated program (such as PISP), ministerial budgetary allocations, or fiscal incentives.

	Public Sector Window	Private Sector Window
Funding size	Capped at US$30million, or three-quarters of the drilling costs, whichever is smaller	
Prior requirements	ess road and site infrastructure ıned	ess road and site infrastructure
Financing package	• 50%Blended soft loan (IBRD + GCF) • 50%PT SMI loan	• 75% IBRD Exploration Loan (potentially to be blended with climate funds - CF) • Guarantee/contingent financing to cover 50% of the loan (if the license is returned before 4 years after loan is effective) or 25% of the loan (if the license is returned after 6 years) • 25% Developer equity
Blended soft loan terms	Linked to IBRD and PISP terms	Linked to IBRD and CF terms
Repayment in case of successful drilling	• Repayment of IBRD originated loan after 25 years • Repayment of PT SMI loan as per agreement with PT SMI	• Repayment after six years with an option to pay back after four years in case no support is needed for delineation • Additional success fee payment when the project reaches financial closure (after four or six years respectively)
Obligations in case of unsuccessful drilling	• Repayment of the IBRD originated loan after 25 years; • Possible forgiveness up to 50% of PT SMI loan upon return of development license • Resulting maximum loan forgiveness: 25% of total investment	• Repayment of the Exploration Loan, with possible grant terms refinancing (through a guarantee/contingent financing arrangement) of 50% of the loan upon return of development licenses if the license is returned before four years • Guarantee / contingent financing arrangement of 25% of the loan if the license is returned after 6 years • Resulting maximum loan forgiveness: 37.5% of total investment (for 6 years option) or 18.75% of total investment (for 4 years option)

All standard operating procedure of the sub projects included in the Project Operation Manual (POM).

18. A schematic of the component design is presented below:



**Sub borrowers pays full payment for the loan*
***Sub borrowers received percentage of loan forgiveness from the Climate Funds on condition of the sub borrowers returning the Geothermal Working Permit (IPB) to the GoI*

19. Geographic Focus and Scope of Drilling Activities: Projects will be prioritized in line with the completeness of the preliminary data (first come first serve) and country's geothermal development objectives determined by the Directorate General of New Energy, Renewable and Conservation Energy (EBTKE) under MEMR and PLN's RUPTL. The facility will only provide financing for drilling and its related activities, and exclude the infrastructure development such as road access, well pad preparation, jetty, etc.

20. Site screenings are expected to be conducted as an assessment to the submitted proposals. It is expected that 20 subprojects will be developed as a result of the project interventions. For each site, PT SMI will prepare a report on the basis of the following information: (i) general details, including location and maps;(ii) screening and scoping of environmental and social baseline and potential risks and issues; and (iii) land denomination (e.g. conservation forest, protection forest, private land, village land etc.); while technical assessment report will be prepared by Center of Competence (COC) of PT SMI, that include: (i) field concept and summary of resource estimation; (ii) summaries of geology, geophysics, geochemistry surveys; (iii) summary of temperature gradient wells; (iv) existing electricity infrastructure in the area, including projected demand and power supply, transmission and distribution lines; and (v)

probable type of development (e.g. flash, binary). Feasibility reports will be updated with the results from exploration drilling and provided by the sub borrowers to PT SMI. If the defined work area is considered feasible, the subproject will be declared as successful.

21. Expected Impact: Component 1 will deliver drilled wells, which provide data that serve as inputs to investment decisions. Assuming a portfolio of several sub-projects owned by SOE and Private Sectors in Indonesia, the Project is expected to directly enable drilling of up to 20 subprojects or about 1000 MW of new geothermal power capacity, which, based on development costs of about $3,5 million per MW[7], would imply commercial investments of about US$3,5 billion. The outputs for Component 1 will be exploration loans for exploration and delineation well drilling and auxiliary infrastructure built by public and private developers. The outcomes will be resource risk removed on geothermal greenfield areas through drilling, and therefore financial close achieved for steam-field development and power plant construction. Depending on the project size, this would leverage an additional US$4 – 5.5 billion investments by 2030, an additional geothermal power capacity of 1 – 1.5 GW, and 5 – 7.5 McCO2e/year. The proposed Project will also bring employment for skilled and unskilled workers engaged in drilling, civil works, infrastructure construction, and auxiliary services in up to 20 locations throughout Indonesia, mostly in the Eastern Islands. Through technical assistance to a range of stakeholders, the proposed operation will enhance capacity of key state actors in the sector, thereby facilitating sector development in the long run.

22. Achievement of the Project Development Objectives will be measured through several indicators, namely:
    i. Additional electric power generation capacity enabled (megawatt)
    ii. Private capital mobilized for investment in geothermal power generation (US$ million)
    iii. Estimated GHG emission reduction compared to a business-as-usual baseline (metric tons)

1.2.2 Component 2: Technical Assistance and Capacity Building

23. The Component will finance a capacity building program to enhance PT SMI's capacity in managing the Facility, and technical assistance to key sector stakeholders in improving the overall sector governance and investment climate for geothermal in Indonesia. Capacity building to PT SMI will include broad support in governance of the Facility and management of the geothermal portfolio, including development of eligibility criteria, screening developers' proposals[8], validating complex geoscientific data, evaluating quality of environmental and social safeguards due diligence and developers' financial capability. The technical assistance will be delivered through strong on-site support and on-the-job training from technical consultants

[7] ESMAP "Geothermal Handbook: Planning and Financing Power Generation"
[8] PT SMI will need to carry out integrity due diligence of potential borrowers, such as Anti Money Laundering/Combating the Financing of Terrorism (AML/CFT), blacklists, reputational risk searches.

that are world-class experts in the geothermal field. Furthermore, the Component will support the development of capacity building program within PLN to improve its capacity for geoscientific assessment, management of its drilling operations and overall development of its geothermal portfolio.

24. In addition, the Component will provide regulatory advisory and operational support to key stakeholders, particularly MEMR, in improving the investment climate and doing business environment in the sector and addressing the key bottlenecks as above identified. Technical assistance will also be provided in several areas as expressly requested by MEMR. This would cover, among others, support to EBTKE and *Badan Geologi* in improving the tender process for unassigned WKPs, including undertaking geoscientific studies and surface exploration and conducting extensive market sounding to attract more international bidders, as well as improving the human resources, including provision of training to key staff, and geothermal resource database. This Component shall be financed by climate finance grant, and/or potential co-financing from the Government of New Zealand and KfW.

25. The technical support and capacity building will support operation cost of PT SMI in managing the GREM projects. Support will also be made available for the preparation of proposal assessment reports for exploration drilling services. Capacity building plans will also benefit the Geothermal Directorate and Badan Geologi (Indonesia's Geological Agency)under the Ministry of Energy and Mineral Resources.

1.3 Description of Geothermal Exploration Subprojects for funding under GREM

1.3.1 Geothermal Development – Overview

26. Geothermal development happens in a series of phases. These phases are defined in a number of ways across the industry; the World Bank's ESMAP[9] uses the following:

- Phase 1: Preliminary Survey
- Phase 2: Exploration
- Phase 3: Test Drillings
- Phase 4: Project Review and Planning
- Phase 5: Field Development
- Phase 6: Construction
- Phase 7: Start Up and Commissioning
- Phase 8: Operations and Maintenance

[9]ESMAP. 2012. Geothermal Handbook: Planning and Financing Power Generation. Technical Report.

With some subtle overlaps in the details, in broad terms the GOI's regulatory definition of 'Geothermal Exploration' is Phase 1 to Phase 4 and 'Geothermal Exploitation' is Phase 5 to Phase 8.

1.3.2 Geothermal Exploration Sub-Projects

27. Geothermal Exploration sub-projects developed by sub-borrowers will be funded under Component 1 of the GREM. Funds will be available to support activities directly related to well drilling and well testing, but all other costs related to associated facilities[10] to prepare the site will be funded through other sources.

28. The location of exploration investments is unknown at the time of GREM project preparation. There is potential for physical cultural resources (PCR), natural habitats, forests, protected areas, outstanding or unique landscapes and geological/geothermal features, Indigenous Peoples, vulnerable or non-resilient communities, subsistence livelihoods (relying on private, forest or communal resources), and sensitive economic activities such as tourism to be present in the project's Area of Influence (AOI).

29. The subproject'sAOI, for the purposes of the environmental and social assessment, will include the direct, indirect and cumulative impacts of the subproject drilling operations. The AOI also includes that of associated facilities[10], including subproject infrastructure and includes access routes, well pads, quarries, workers' camps, disposal areas, fresh water resources, wastewater discharge locations, resettlement areas, and unplanned developments such as spontaneous settlements, logging and land clearance along roads and pipeline routes, regardless of funding sources that are directly or significantly related to geothermal exploration. Therefore, all application proposals for the GREM projects are mandatory to follow the GREM safeguard framework documents.

    The sub-projects submitted for GREM funding approval will include the following activities:

    - *Mobilization / demobilization*: Moving large drilling rigs and heavy traffic can cause access disruptions and safety issues to other road users.
    - *Drilling*: Well depth can vary depending on the resource, but are usually deep (1000m to over 2500m). Each well will take approximately 45 to 50 days of around-the-clock drilling to complete. Drilling is noisy, and the rig and well pad will be lit for night-time operations. Fresh water is required to provide cooling and lubrication during drilling, and carry rock cutting to the surface. Synthetic polymers (xanthan gum and starch or cellulose derivatives) and solid barium sulphate are added in this process.

[10] Associated Facilities means facilities or activities that are not funded as part of the project and, in the judgment of the Bank, are: (a) directly and significantly related to the project; (b) carried out, or planned to be carried out, contemporaneously with the project; and (c) necessary for the project to be viable and would not have been constructed, expanded or conducted if the project did not exist. For facilities or activities to be Associated Facilities, they must meet all three criteria

- *Management of drilling muds / fluids and rock*: Drilling muds (bentonite clay), additives and fluids will be stored in settlement ponds adjacent to the well pad. Solids will accumulate at the bottom and the treated liquids will be discharged to reinjection wells or to surface water. Decommissioning may involve converting the ponds for community or private use, or returning the site to the pre-development condition. Pipelines will be required to transport fluids to reinjection wells. Rock will be used as fill in suitable sites nearby, unless they are considered hazardous and likely to leach contaminants, in which case they will be disposed to a lined landfill. Designated landfills may be required as part of project infrastructure, as it is unlikely that there will be suitable landfills operating in the locality.
- *Well testing and management of geothermal fluids (brine):* A significant amount of brine will be extracted during testing. This liquid typically contains heavy metals and can contain high concentrations of boron, arsenic and fluoride. Brine ponds will store brine until it is re-injected or treated and discharged to surface water. In areas that have sensitive ecosystems and where the receiving waters are critical to the needs of the local population, zero discharge system through reinjection of geothermal brine shall be implemented where feasible. Ponds will be located on or near the well pad. Decommissioning may involve converting the ponds for community or private use, or returning the site to the pre-development condition. Pipelines will be required to transport fluids to the reinjection wells. Steam plumes will be emitted during testing, and this can be noisy and create an aerosol or droplet discharge to neighbouring land. Gases (carbon dioxide and hydrogen sulphide) will be emitted during testing, which can produce localized 'acid' rain at high concentrations.
- *Support facilities*: Due to the remoteness of some prospect areas it is probable that sub-projects will require on-site workers' camps and maintenance facilities. These will require waste management, wastewater treatment and disposal, fresh water supplies, health and safety of workers and community, and provision of services.
- *Site restoration:* Removing all equipment, decommissioning wells, returning land to the agreed standard (revegetation), filling in ponds, removing contamination and waste, removing dams and water structures (or handing over to the community) etc.

30. Activities, that may be part of the overall Exploration project and be considered 'associated facilities', but not funded by GREM, may include one or more of the following:

- *New and upgraded transport infrastructure for site access*: Due to the remoteness of some geothermal prospect areas, and the nature of transport infrastructure out of the main centers, it is probable that the sub-projects will include upgrades to ports, wharves, bridges and roads. New infrastructure and new access roads may be required, depending on the distance of drilling pads and other project infrastructure from serviced areas. New infrastructure and roads are likely to require land acquisition and this may be involuntary

or voluntary depending on the location. Activities may include quarrying for fill materials, 'cut and fill' activities and vegetation clearance.

- *Well pad preparation*: Land for test well pads is only required on a short-term basis unless the well is identified as a future production well. Locations are usually flexible to avoid sensitive receptors and land can typically be negotiated on a willing buyer-willing seller, or lease arrangement. Land clearance and pad preparation will be required for up to 4 or 5 well sites per exploration activity. The land requirements are approximately 1.5 -2 hectares per pad, which includes the storage and treatment ponds. Activities may include quarrying for fill materials, 'cut and fill' activities and vegetation clearance.

1.3.3 Future Geothermal Exploitation as 'Associated Facility'

31. During the ESIA process for the GREM sub projects, a generic exploitation scenario will be developed with the Technical Team. Based on the scenario, a screening of sensitive receptors and potential environmental and social impacts will be performed.

32. Relevant activities in the Geothermal Exploitation Phases (post Exploration) that will have to be screened against GoI regulatory requirements and WB safeguard policiesare:

- Phase 4: Project Review and Planning
  - Feasibility study, ESIA and permits, drilling plan
- Phase 5: Field Development
  - Land acquisition and permits
  - Well drilling (production, reinjection, cooling water), well testing, reservoir simulations
- Phase 6: Construction
  - Pipelines, power plant, substation and transmission
- Phase 7: Start Up and Commissioning
- Phase 8: Operations and Maintenance
  - Managing well operations and brine reinjection
  - Managing the geothermal resource, reservoir monitoring and simulations
  - Generating electricity
  - Managing emissions, noise and waste
  - Well decommissioning
  - Make up well drilling, well testing, reservoir simulations

33. Exploitation activities will also include all of those mentioned above for the exploration phase. The scale of field development / well drilling will be larger than the exploration phase, with 10 - 20 well pad sites required for production and reinjection wells (depending on the size and location of the resource) and pipelines connecting the well(s) and the power plant. Permanent

land acquisition will be required for pads, roads, pipelines, ponds, distribution infrastructure etc. In addition, exploitation will involve the following activities:

- *Construction of geothermal power plants,*[11] *switch yard, substation and distribution infrastructure*: land acquisition, construction related hazards, wastes, noise and workforce. Temporary land uses such as workers' camps and workshops.
- *Emissions to air from cooling towers*: concentrations of contaminants such as mercury, carbon dioxide, methane and hydrogen sulfide, depending on geohydrology of location. Discharges are warmer than ambient air temperature.
- *Emission of noise*: from geothermal plant operation, mainly the cooling tower fans, steam ejectors and turbine 'hum'.
- *Solid and hazardous waste*: domestic waste, hazardous waste from workshops/maintenance and mineral precipitate sludge from cooling towers, scrubbers, steam separators etc.
- *Discharge of wastewater*: reinjection to the deep geothermal aquifer of geothermal fluids. Treatment and discharge of cooling water and other wastewater to reinjection wells or surface water.
- *Well operations*: well production reduces over time and wells are eventually abandoned and 'make-up wells' commissioned.
- *Renewable energy supply to local grids*: construction and operation of distribution infrastructure. Comparative reduction in greenhouse gas emissions compared with diesel generation. Delivery of electricity to new customers and delivery of low-carbon electricity into the existing grid.

[11] Three types of power plants are operating today:

- Dry steam plants, which directly use geothermal steam to turn turbines;
- Flash steam plants, which pull deep, high-pressure hot water into lower-pressure tanks and use the resulting flashed steam to drive turbines; and
- Binary-cycle plants, which pass moderately hot geothermal water by a secondary fluid with a much lower boiling point than water. This causes the secondary fluid to flash to vapor, which then drives the turbines.

2 THE GREM SAFEGUARD FRAMEWORKS

34. The objective of the **Environmental and Social Management Framework (ESMF)** is to guide the management of the environmental and social issues arising from the implementation of the Geothermal Resource Risk Mitigation project. It states the relevant laws and policies of GoI and the World Bank, and lays out the principles, rules, procedures and institutional arrangements to screen, assess, plan and implement the required measures to mitigate the environmental and social impacts of the investments under GREM. In particular, it lays out the environmental and social planning requirements for the investment proposal development by the sub-borrowers and the E&S management responsibilities of PT SMI in the review, approval and implementation monitoring of the E&S plans.

35. The purpose of issuance of the **Environmental and Social Management Framework** is to ensure that all stakeholders involved in the project comply with the requirements, procedures and regulations related to environmental management in accordance to prevailing GOI regulations and supplemental provisions in compliance with relevant World Bank Safeguard Policies. It focuses both on the environmental and social impacts of drilling and testing, as the impacts of associated facilities. It provides implementation arrangements and budgets for the financial intermediary (PT SMI) and sub-borrowers (private and public sector).

36. The **Resettlement Policy Framework (RPF)** is contained in Section6. It is prepared in line with the relevant laws of GOI relating to involuntary land acquisition and resettlement and World Bank OP 4.12 on Involuntary Resettlement.

37. The **Indigenous Peoples Planning Framework (IPPF)** is contained in Section**Error! Reference source not found.**. It is prepared in line with relevant laws of GOI relating to the management of impacts and benefits of projects to Indigenous Peoples and World Bank OP 4.10 on Indigenous Peoples.

3 SAFEGUARDS LAWS, REGULATIONS AND POLICIES

38. Below is a summary of regulations, laws and policies relating to environmental and social safeguards that are relevant for the ESMF. A summary of laws, policies and regulations relating to involuntary land acquisition and resettlement are provided in the RPF (Section 6) and those relating to Indigenous Peoples are provided in the IPPF (Section 7).

3.1 Indonesian Laws and Regulations

39. In the case of environmental and social management, the geothermal exploration sub-projects funded by GREM must refer to Law (UU) No. 32/2009 on Environmental Management and Protection, and Government Regulation (PP) No. 27/2012 on Environmental Permit, Regulation of the Minister of Environment No. 16/2012 on Guidelines for Preparing Environmental Documents (AMDAL and UKL/UPL), Law No. 26/2007 on Spatial Planning, and Ministry of Environment Regulation No. 5/2012 on the Types of Activities requiring AMDAL, Act No. 21 of 2014 on Geothermal, Government Regulation No 7/2017 on Geothermal for Indirect Utilization, Regulation of the Minister of Energy and Mineral Resources No 21/2017 on Management of Drilling Mud and Drilling Cutting Waste from Geothermal Drilling. From the screening process on the types of activities that require an AMDAL (MoE Regulation No. 5/2012), it is considered that no AMDAL is required for Geothermal exploration, only UKL-UPL is mandatory.

40. Act No. 32 of 2009 on the Protection and Management of the Environment (State Gazette of the Republic of Indonesia Year 2009 Number 140, Supplement to Statute Book No. 5059) with the main principles on guaranteeing the continued existence of all living things and conservation of the ecosystem, maintaining the conservation of environmental functions, and achieving the environmental congruence, harmony and balance. With regard to the geothermal activities, the law regulates the instruments for preventing pollution and/or damage to the environment, such as UKL/UPL and/or AMDAL.

41. Act No. 21 of 2014 on Geothermal has changed the geothermal activities from mining to indirect use, which allows the activities to be sited in the protected forest area, and where it is the case, the law on environmental protection prescribes that such activities should prepare UKL-UPL for exploration stage and full EIA (AMDAL) for exploitation stage.

42. Act No. 41 of 1999 on Forestry based on the sustainability of forest ecosystem and its functions for both economic purposes and ecology. The development activities other than forestry are permissible in a selective manner in order to avoid significant damage that can reduce forest functions. The strategic development activities that are avoidable can be permitted with prudent approach, such as for mining, electricity, communication, and water installation. Hence, this applies also to geothermal development that can be implemented in forest areas, even in protection forest.

43. Act No. 5 of 1990 on Conservation of Natural Resources and Ecosystems (State Gazette of the Republic of Indonesia Year 1990 Number 49, Supplement to State Gazette No. 3419) that regulates the ecosystem and habitats to support the livelihood, as well as its biodiversity to be studied, conserved, and utilized sustainably. The geothermal permit holders have to implement these regulations, in particular where the locations are within and in the proximity of the protected and conservation areas. The geothermal development in the forest areas, as well as in the protected and conservation forest areas, is permissible and considered as the utilization of its environmental services. This should be done in a prudent manner with the implementation of the forest and biodiversity sustainability principles. Such activity should obtain relevant permits from the Ministry of Environment and Forestry.

44. Act No. 26 of 2007 on Spatial Plan regulates the utilization planning of the land, marine, and air, including what is within the earth as one sovereignty for human and wildlife and their livelihood. The basic principle of the spatial plans is the sustainable utilization of the resources for people's welfare. Geothermal in this law is considered as a nationally strategic activity along with oil, gas, mineral, and groundwater. The local bylaws on spatial plans have to refer to this law, especially on geothermal resource where they have potency; hence its development will not be hindered accordingly.

45. Government Regulation No. 7 of 2017 on Geothermal for Indirect Utilization regulates the authority of geothermal development for indirect utilization, the mechanism of preliminary survey, exploration and exploitation, the preparation of geothermal working area and award process.

46. Government Regulation No. 27 of 2012 on Environmental Permit (State Gazette of the Republic of Indonesia Year 2012 Number 48, Supplement to State Gazette No. 5285) mandates that geothermal power plant development is considered as one of the nationally strategic activities that need to obtain environmental permit, and related activities for which are mandatory to have UKL/UPL and/or AMDAL. In the case of exploration, UKL/UPL is required (as per Act 21, 2014, outlined above).

47. Government Regulation No. 24 of 2010 on Forest Area Utilization, has allowed geothermal energy development within the protected forest areas as a nationally strategic activity. Such development should obtain the permit from the Ministry of Environment and Forestry and pay adequate levy as contribution to state revenues. The project proponent is required to submit the proposal to the Ministry along with the supporting documents outlined in the regulation.

48. Government Regulation No. 26 of 2008 on National Spatial Plan also provides for sustainable utilization of the resources to benefit the Indonesian people's welfare and recognizes geothermal as a nationally strategic activity along with oil, gas, mineral, and groundwater. The National Spatial Plan provides guidance for preparing the long-term plans, mid-term plans, land

use plan, balance between the regions, investment locations, national strategic areas, and provincial and district spatial plans.

49. Government Regulation No. 28 of 2011 on the Management of Natural Reserve Area and Nature Conservation (State Gazette of the Republic of Indonesia Year 2011 Number 56, Supplement to Statute Book No. 5217) allows for geothermal development activities in conservation areas so long as they are not classified as a mining process (Article 35, verse 1c). Geothermal activities are regulated as a type of service utilization of forest ecosystem.

50. Ministry of Environment Regulation No. 5 of 2012 on Activities that are AMDAL Mandatory categorizes development activities into several groups based on its potential environmental impacts and their magnitude to affect humans and the environment. The regulation states that any development activities in proximate or inside protected natural areas are 'AMDAL-mandatory'; however, geothermal exploration activities are exempt so UKL/UPL is sufficient.

51. Ministry of Environment Regulation No. 13 of 2010 on UKL/UPL and SPPLprescribes that projects or development activities that are not 'AMDAL-mandatory' are UKL/UPL-mandatory where the environmental impacts are less significant. The projects are designated as UKL/UPL-mandatory by the governors and/or head of districts based on prior screenings. The regulation also provides guidance and format of the preparation of the UKL/UPL, and mandates that its processing be completed by the local environmental agencies within 14 working days. After the project proponent submits the UKL/UPL proposal to the local environmental authority, the agency issues the recommendation of UKL/UPL at the least 7 days after the submission of the final proposal that will be used by the proponent as the basis for obtaining environmental permit and for implementing environmental impacts management and monitoring.

52. Ministry of Environment Regulation No. 16 of 2012 on Guidance on Environmental Documents Preparationprescribes how to prepare environmental documents, including AMDAL, UKL/UPL and SPPL, where the first two are key requirements to obtain the environmental permit. The regulation provides a detailed description of environmental documents to be prepared by the project proponents, including for geothermal exploration projects subject to UKL/UPL requirement.

53. Ministry of Environment Regulation No. 17 of 2012 on Guidelines for Public Involvement in Environmental Assessment and Environmental Permitting Process. The regulation based on the principles that: a) information provision in full and transparent; 2) equal position of all stakeholders; 3) resolution in fair and wise manner; and, 4) coordination, communication and cooperation among the involve parties. It regulates the public involvement in the AMDAL establishment and environmental permit issuance through announcement, inputs provision, feedbacks and public consultation, as well as in the AMDAL review commission. The public defines as: 1) project affected people; 2) environmental watchdog; and, 3) AMDAL process and

decision affected people. The regulation prescribes the FPIC principles and requirements for disclosure.

54. Ministry of Environment and Forestry Regulation No. P.46/Menlhk/Setjen/Kum.1/5/2016 on The utilization of Geothermal Environmental Services at National Parks, Grand Forest Parks, and Nature Recreation Parks. The regulation is the basis for allowing geothermal development in specified parts of conservation area, including infrastructure development, exploration and/or exploitation drilling, and power plant construction.

55. Minister of Energy and Mineral Resources Regulation No 21/2017 on Management of Drilling Mud and Drilling Cutting Waste from Geothermal Drilling. This regulation prescribes the the management of drilling mud and drilling cutting wastes from geothermal exploration and its reporting requirements to the authority.

56. When the geothermal exploration impacts cultural property, Law No. 5/1992 regarding Cultural Property (*Benda Cagar Budaya*) will be applied. It defines a cultural property "of important value for history, science, and culture", as being "a man-made object or group of objects"; movable (*bergerak*) or immovable (*tidak bergerak*); aged at least fifty years or natural objects with high historical value[12].

57. Law No. 11 of 2010 (Undang-Undang Cagar Budaya No. 11/2010) on National Heritage, especially prescribes guidance on observation and data collection on cultural heritage that may be affected by project activities.

3.2 PT SMI Environmental and Social Standard (ESS)

58. PT SMI ESS are comprised of ten elements which are:

(a) ESS-1: Assessment and management of environmental and social risks and impacts

- Prevent, or if prevention is impossible, to minimize, mitigate, or compensate the negative impacts on the environment and local communities.
- Ensure that permits, mandated by the government to identify and assess positive or adverse environmental and social impacts, are obtained by project proponents prior to the project execution.

(b) ESS-2: Labor and working conditions

[12] *UNESCO. Compilation of Law and Regulation of the Republic of Indonesia Concerning Items of Cultural Property", pp. 3f. Retrieved 6 May 2012.*

- Create, improve, and maintain relationships between the management and the workers.

- Encourage fair treatment without discrimination, equal opportunities for workers and efforts to comply with the law. Preventing children labour and forced labour. Encourage safe and healthy working conditions as well as protect and promote worker health.

(c) ESS-3: Pollution prevention and abatement

Prevent or minimize negative impacts on human health and environment by avoiding or minimizing pollution from project activities. Encourage reduction of emissions that contribute to climate change.

(d) ESS-4: Safety, health and security

- Prevent or minimize the risks and impacts on health, safety and security of workers and surrounding community both in routine and non-routine activities.

- Ensure protection of personnel and property is done properly so as to prevent or minimize risks to the community's safety and security.

(e) ESS-5: Land acquisition and resettlement

- Avoid the negative impact or at least minimize the risk of involuntary resettlement.

- Mitigate the social and economic impacts of land acquisition on the affected people by providing compensation for loss of assets at replacement cost; and ensuring that resettlement activities are undertaken properly, through information disclosure, consultation and informed participation of those affected.

- Improve or at least restore the livelihoods and standards of living of the relocated people.

(f) ESS-6: Biodiversity conservation and natural resources management

Protect and conserve biodiversity and encourage sustainable development and natural resource utilization by applying integrated conservation techniques.

(g) ESS-7: Indigenous peoples and local community

- Protect Indigenous Peoples and local communities from development which is not in accordance with their educational, social and cultural levels, and thus impacts them adversely.

- Encourage Indigenous Peoples and local communities to partner with the developers and share social and economic benefits of projects.

(h) ESS-8: Cultural heritage

- Protect the cultural heritage from negative impacts of project activities and support its preservation.

- Encourage the project developers to take responsibility towards protecting the cultural heritage around the project area.

(i) ESS-9: Energy conservation and environment-friendly energy

- Support energy conservation as a saving effort in the resources use in order to safeguard natural resources and encourage the planned and directed resources use in a sustainable manner.

- Encourage the sustainable development and energy use through an integrated application of conservation having the development priorities.

- Promote the development of environment-friendly green energy facilities which are as an effort to increase new and renewable energy

(j) ESS-10: Consultation and grievance mechanism

- Encourage the information transparency and encourage the participation of community and other stakeholders as fair and profitable consulting efforts.

- Encourage community participation in sustainable development in the affected area as an effort to facilitate the culture of consensus and democracy in the project and affected communities through a grievance mechanism

3.3 World Bank Safeguard Policies

59. Based on desk review of similar projects and preliminary environmental and social screenings, it is anticipated that the following World Bank Safeguard Policies are relevant and/or could be triggered by the GREM sub-projects[13]:

Table 1: Safeguards Policy Triggered by the Project

Safeguard Policies Triggered by the Project	**Yes**	**No**
Environmental Assessment OP/BP 4.01	X	
Natural Habitats OP/BP 4.04	X	
Forests OP/BP 4.36	X	
Pest Management OP 4.09		X
Physical Cultural Resources OP/BP 4.11	X	
Indigenous Peoples OP/BP 4.10	X	
Involuntary Resettlement OP/BP 4.12	X	
Safety of Dams OP/BP 4.37	X	
Projects on International Waterways OP/BP 7.50		X
Projects in Disputed Areas OP/BP 7.60		X

60. **OP 4.01 Environmental Assessment**. Under sub project Component 1, the project will fund exploration of geothermal resources at several sites with a defined geothermal working area (*Wilayah Kerja Panasbumi*/WKP). The sub-projects will fall into either Category B or Category A Classification. Category B sub-projects would be where the impacts would be local, reversible and readily managed with proven or standardized mitigation measures. Category A sub-projects are those with significant, sensitive, complex, irreversible and unprecedented potential adverse environmental and social impacts that may affect an area broader than the sites of facilities subject to physical work. All sub-projects will likely require a full Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plan (ESMP) to manage and mitigate such impacts in accordance with OP 4.01. The assessment of potential impact should also consider the social community or social living of the resident around the geothermal field location.

61. **OP 4.04 Natural Habitats** outlines the World Bank policy on biodiversity conservation taking into account ecosystem services and natural resource management and those used by project affected people (PAP). Projects must assess potential impacts on biodiversity. The policy strictly limits circumstances under which damage to natural habitats can occur, and prohibits projects

[13]OP4.10 Indigenous Peoples Policy is assessed in Section 6. OP 4.12 Involuntary Resettlement Policy is assessed in Section 7.

that likely result in significant conversion or degradation of critical natural habitats. Where a prospective geothermal site is located in an area that is designated as *hutan lindung* (HL) or 'protected forest area, to remain in forest cover for watershed protection' or conservation area, or similar, this policy will apply. Impacts will be assessed in the ESIA process.

62. **OP 4.11 Physical Cultural Resources (PCR)** sets out World Bank requirements to avoid or mitigate adverse impacts resulting from project development on cultural resources. It is likely that PCR will be found near geothermal exploration projects. In some cases in Indonesia, local communities consider the manifestations of geothermal energy as sacred. The ESMF includes the requirements for preparing PCR Management Plans (PCRMP), which will be developed as part of the ESIA and ESMP processes, as well as requirement for a chance find procedure to be attached to every ESMP.

63. **OP 4.36 Forests**. This policy recognizes the need to reduce deforestation and promote sustainable forest conservation and management. The prospect geothermal areas could be within a forest area as defined by its protection status based on the GoI regulations as well as definition of forests under the Policy. The impacts on forest health and functions, and the impacts on affected persons that rely on forest resources, will be assessed as part of the ESIA and Resettlement Action Plan processes and mitigation measures will be incorporated into the ESMP and LARAP.

64. **OP 4.37 Safety of Dams**. When the Bank finances a project that includes the construction of a new dam, this Policy requires that the dam be designed and its construction supervised by experienced and competent professionals. It also requires that the Borrower adopt and implement certain dam safety measures for the design, bid tendering, construction, operation, and maintenance of the dam and associated works. The Policy is triggered because the drilling process requires storage and settling ponds for brine and other drilling fluids. The requirements of the Policy will be included in the EMT contracts and drilling contracts, and the activities and outputs will be monitored under the ESMF.

65. **OP 4.10 Indigenous Peoples**. This policy requires the Government to engage in a process of free, prior and informed consultations with indigenous peoples, as described by the policy in situations where indigenous peoples are present in, or have collective attachment to, the project area and for the preparation of an Indigenous Peoples Plan (IPP) and/or Indigenous Peoples Planning Framework (IPPF). The objectives of the policy is that broad community support from Indigenous Peoples in the project area should be obtained and that the policy aims to minimise impacts and provide culturally appropriate benefits and mitigation measures.

66. **OP 4.12 Involuntary Resettlement**. This policy addresses direct economic and social impacts from the projects activities that will cause (a) involuntary taking of land resulting in (i) relocation or loss of shelter, (ii) loss of assets or access to assets or (iii) loss of income sources

or livelihoods and (b) involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons. The policy requires siting of project infrastructure to be so chosen so as to avoid these impacts altogether or to minimize them to the extent possible. Where these cannot be avoided, the policy requires the preparation of either or both of these instruments (i) resettlement policy Framework, (ii) Resettlement Action Plan, and for meaningful consultations with potentially affected people. The policy prohibits Community donations of lands for location-specific infrastructure.

67. The World Bank Group EHS Guidelines, including the Industry Sector Guidelines for Geothermal, will be integrated into the ESIA and ESMP processes and documentation.

3.4 Gap Analysis

68. Table 2 below presents the comparison of key features between the GOI's Laws and Regulations and the World Bank safeguards policies and how the gaps are addressed in the frameworks.

69. The significant difference between the Indonesian ESIA/AMDAL laws and regulations relating to geothermal exploration and Bank Policy relates to the applicable safeguard instrument. The GOI prescribes that only an Environmental Management Plan and Monitoring Plan (UPL / UKL) is required for geothermal exploration regardless of potential impacts, whereas OP4.01 requires an assessment of safeguard instrument depending on the classification of activity based on risk (Category A, B, or C). Both the Bank and country's own systems will be followed, and the content of documents will be harmonized where possible; however, separate sets of instruments will be prepared for separate approval processes.

70. OP4.01 Environmental Assessment requires an assessment of associated facilities where they are considered part of the Project (either geographically, or over time), whereas the GOI laws and regulations consider project activities discretely. Meanwhile, the GoI laws and regulations consider each phase as a separate environmental permit process, and thus require separate application and obtainment of approvals accordingly.

71. GoI laws and regulations have recently been amended to remove barriers to carrying out geothermal exploration and exploitation activities in forests and protected areas, and exempting requirements for full ESIA/AMDAL in many cases. These regulatory revisions take into account the low-impact use of ecosystem services and that geothermal is accepted and increasingly considered as a nationally strategic activity. In contrast, the Bank's OP4.01 Environmental Assessment, OP4.04 Natural Habitats and OP4.36 Forests have maintained its requirements and standards regardless of the activities. The Bank requires full impact assessment before sub-project appraisal; and would either require significant mitigations, or not fund certain exploration activities – that may result in degradation or removal of critical habitats – in forests and protected areas.

72. This ESMF is subject to the prevailing laws and regulations in Indonesia. Any update to the laws and regulations will still be strictly adhered by this ESMF.

73. Where there is conflict between the country's own systems and the Bank Policies, the highest standard prevails, meaning that the most precautionary, or the most restrictive in terms of avoiding or minimizing social and environmental impacts, will be followed in order to comply with both systems.

Table 2 Gap Analysis for Environmental and Social Safeguards Policies and Indonesian Laws and Regulations

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
OP 4.01 Environmental Analysis				
Reference to legal and administrative framework such as international environmental treaties, agreement, international standard policies etc.	OP 4.01 paragraph 3 OP 4.01 (Annex B) EA takes into account obligations of the country, pertaining to project activities under relevant international treaties or agreement.	Ministry of Environment Regulation No. 16/2012 section G.5 and B.4.a, stipulated that other data and information required in reporting UKL-UPL shall be incorporated including reference to other requirements.	Lack of reference to legal and administrative framework such as international environmental treaties, agreement, international standard policies etc. The current regulation only refers to "other data and information".	The ESMF follows OP4.01. The subproject ESIA, ESMP and UKL-UPL will also cover this gap and follow OP4.01.
Project Area of Influence.	OP 4.01 paragraph 2 OP 4.01 (Annex B) *EA evaluates a project's potential environmental risks and impacts in its area of influence, identifies ways of improving project selection and sitting etc.*	Ministry of Environment Regulation No. 16/2012 section B.4.c, requested project proponent to provide information in detail on this aspect with "*map, scale of operation and activities component*" that could be used to determine the project area of influence, availability of ancillary facilities and associated facilities during UKL UPL preparation as good practice. However it does not state about the project's area of influence outside the project's footprints.	Lack of analysis about project area of influence, ancillary facilities, induced impacts and site selection analysis for activities require UKL-UPL.	The subproject ESIA, ESMP and UKL-UPL will cover the project area of influence as per OP4.01.
Environmental	OP 4.01 paragraph 8	Ministry of Environment	Environmental screening based	The subproject ESIA, ESMP and

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
Impact Screening	OP 4.01 (Annex C) *Environmental screening of each proposed project to determine the appropriate extent and type of EA.*	Regulation No. 16/2012 section 4.C regulates the requirement to evaluate all possible impacts from the project and prepare mitigation measures to tackle those issues. However, further screening based on significant environmental impact evaluation is not clearly stated.	on technical thresholds only will result in inappropriate extent and type of EA.	UKL-UPL will include the environmental impact screening and scoping as stipulated at Section 5 of the ESMF.
Environmental Monitoring Data	OP 4.01 (Annex C) *Environmental monitoring data to evaluate the success of mitigation and to foster corrective actions.*	Ministry of Environment Regulation No. 16/2012 section C.3 clearly regulates the requirement for data monitoring of UKL-UPL.	Insufficient follow up, analysis, use of environmental monitoring data for evaluation and continual improvement. The environmental monitoring program is not sufficient or is not corresponding to the scale of the impact of the project.	The ESMP and UKL/UPL will address the gaps and include appropriate environmental monitoring programs appropriate to the scale of the impact of the project. Refer Appendix D.
Capacity Development and Training.	OP 4.01 Paragraph 13 *(When the borrower has inadequate technical capacity to carry out environmental safeguards management functions, the project includes components to strengthen*	Not covered.	Insufficient capacity development and training for EMP implementation	This is addressed in Section 9 of this ESMF.

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
	that capacity). OP 4.01 (Annex C). Paragraph 4 *(Technical Assistance program for EMP implementation)*			
Institutional Arrangements. Institutions responsible for environmental management and ESMP implementation	OP 4.01 (Annex C) Para 4 and 5. *(EMP must provide specific description of institutional arrangement and implementation schedule for mitigation and monitoring measures)*	Ministry of Environment Regulation No. 16/2012 section C.4 clearly regulates the institutional arrangement for UKL UPL implementation, monitoring and reporting. Also the frequency and detail location of monitoring and implementation effort (section C.3).	No gaps identified.	This is addressed in the Section 9 of this ESMF.
Cost estimate of ESMP to ensure "*the adequacy of financing arrangements for EMP*".	OP 4.01 (Annex C) Paragraph 5. *(EMP provides the capital and recurrent cost estimates and source of fund for EMP implementation).*	Ministry of Environment Decree No. 45/2005 concerning Guideline for Compiling the EMP Implementation Report.	The source of fund for ESMP implementation is not addressed in this GOI regulation.	This is addressed in the Section 10 of this ESMF.

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
Public Consultation.	OP 4.01- paragraph14 *Consulted with project affected groups and CSO during preparation and implementation* OP 4.01 (Annex B) *(For AMDAL but the gap analysis for UKL UPL is also useful as good practice* Consultation requirements are less clearly specified in the UKL UPL preparation especially during project implementation.	Ministry of Environment Regulation no. 17/2012 about The Guidelines for Public Involvement in Environmental Assessment and Environmental Permitting Process, including UKL UPL document. Ministry of Environment Regulation No. 16/2012 section C.4 clearly regulates regular reporting requirement for UKL UPL implementation (every 6 month)	No gaps identified.	This is addressed in the Section 8 of this ESMF.
Public Disclosure.	OP 4.01--Paragraph 15. *(Timely disclosure and understandable document in local language.)*	Not covered in the Ministry of Environmental Regulations but stipulated in the Ministry of Communication and Information Regulations.	No gaps identified.	This is addressed in the Section 8 of this ESMF.
OP 4.04 Natural Habitat				
Project consistency with national and Regional spatial planning for conservation	OP 4.04 - Paragraph 5. (*Wherever possible, Bank-financed projects are sited on lands already converted).*	Ministry of Environment Regulation no 16/2012 Appendix IV about UKL UPL preparation section B.4.a stipulated that any project proposal shall be rejected	No gaps identified.	

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
purpose	BP 4.04--Paragraph 5. (*Project consistency with national and Regional spatial planning for conservation purpose).*	if the project is not in line with the regional/district spatial planning and with the Presidential Instruction on 10/2011 about Forestry Permit/Environmental Permit moratorium at specific area (in primary forest, wetlands and other sensitive area etc.).		
Classification, criteria for Significant conversion (loss) and degradation of Critical and Natural Habitat whether directly (through construction) or indirectly (through human act) induced by the project ecosystem.	OP 4.04- Paragraph 4. (*The Bank does not support projects that, in the Bank's opinion, involve the significant conversion or degradation of critical natural habitats).*	Ministry of Environment Regulation no 16/2010 Appendix IV about UKL UPL preparation section B.4.a stipulated that any project proposal shall be rejected if the project is not in line with the regional/district spatial planning and with the Presidential Instruction on 10/2011 about Forestry Permit/Environmental Permit moratorium at specific area (in primary forest, wetlands and other sensitive area etc.).	The regulation does not specifically mention natural habitat and critical natural habitat as per 4.04.	Through the Screening Process (Section 5 and Appendix) and the ESIA process (Section 5) critical natural habitats and protected areas will be identified, and the potential for significant conversion or degradation of these areas, and mitigation options, assessed. Both sections identify that if the project is not consistent with Safeguards Policies or GOI laws and regulations, the subproject will not be funded.
Capacity Building for both local and national level institutions in Biodiversity Management or Nature	OP 4.04-- Paragraph 6. *(Borrower's ability to implement the appropriate conservation and mitigation measures strengthened by project component or other measures).*	Ministry of Environment Regulation No. 16/2010 section C.4 clearly regulates the institutional arrangement for UKL UPL implementation, monitoring and reporting. Also the frequency and detail location of monitoring	Not specifically regulated.	This is addressed in the Section 6.3.4.3 of this ESMF. A specific sub plan to the ESMP, the Biodiversity Management Plan, will include specific capacity building.

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
Conservation.		and implementation effort (section C.3).		
Public consultation efforts, stakeholder involvement including NGO	OP 4.04--Paragraph 9 – 10. (*The Bank expects the borrower to take into account the views, role, rights or groups including local NGO and local communities during planning, design, implementation, monitoring and evaluation).*	Ministry of Environment Regulation No. 17/2012 about The Guidelines for Public Involvement Environmental Assessment and Environmental Permitting Process, including UKL UPL document. Ministry of Environment Regulation No. 16/2012 section C.4 clearly regulates regular reporting requirement for UKL UPL implementation (every 6 months).	No gaps identified.	This is addressed in Section of the ESMF.
OP 4.11 Physical Cultural Resources				
Physical Cultural Resources Management Plan	OP 4.11 – Paragraph 17. *(For projects in which the physical cultural resources management plan incorporates provisions for safeguarding physical cultural resources, supervision missions include relevant expertise to review the implementation of such provisions.)*	Law No. 5/1992 regarding Cultural Property (*Benda Cagar Budaya*) will be applied. It defines a cultural property "of important value for history, science, and culture", as being "a man-made object or group of objects"; movable (*bergerak*) or immovable (*tidak bergerak*); aged at least fifty years or natural objects with high historical value.	No gaps identified.	PCR screening and impact assessment is addressed in Section 5 of the ESMF.

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
		Law No. 11 of 2010 (Undang-Undang Cagar Budaya No. 11/2010) on National Heritage, especially prescribes guidance on observation and data collection on cultural heritage that may be affected by project activities.		
OP 4.36 Forests				
The potential impacts of project on forests and protection of critical forest areas.	OP 4.36 – Paragraph 13 *(In accordance with OP/BP 4.01EA, in projects that trigger the Forests Policy, the environmental assessment (EA) should address the potential impact of the project on forests and/or the rights and welfare of local communities.)* OP 4.36 – Paragraph 14 *For projects involving the management of forests proposed for Bank financing, the borrower furnishes the Bank with relevant information on the forest sector concerning the borrower's overall policy framework, national legislation, institutional*	Act No. 41 of 1999 on Forestry based on the sustainability of forest ecosystem and its functions for both economic purposes and ecology. The development activities other than forestry are permissible in a selective manner in order to avoid significant damage that can reduce forest functions. The strategic development activities that are avoidable can be permitted with prudent approach, such as for mining, electricity, communication, and water installation. Hence, this applies also to geothermal development that can be implemented in forest	While the GoI Acts enable geothermal development in forested and protected areas, OP4.36 requires an assessment of impacts on the forest ecosystems and the rights and welfare of local communities, particularly of those using the areas for subsistence or livelihood purposes.	Screening and ESIA activities will identify the ecological and social values of the forests and undertake an impact assessment in accordance with OP4.01, OP4.04 and OP4.36. Even where GOI regulation enables geothermal development, Section 2 of the ESMF notes that a subproject must comply with both World Bank safeguards and GOI regulations.

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
	capabilities, and the poverty, social, economic, or environmental issues related to forests. This information should include information on the country's national forest programs or other relevant country-driven processes. BP 4.36 – Paragraph 4 *During project preparation, the TT ensures that the borrower provides the Bank with an assessment of the adequacy of land use allocations for the management, conservation, and sustainable development of forests, including any additional allocations needed to protect critical forest areas.*	areas, even in protection forest. Government Regulation No. 24 of 2010 on Forest Area Utilization, has allowed geothermal energy development within the protected forest areas as a nationally strategic activity. Such development should obtain the permit from the Ministry of Environment and Forestry and pay adequate levy as contribution to state revenues. The project proponent is required to submit the proposal to the Ministry along with the supporting documents outlined in the regulation. Government Regulation No. 28 of 2011 on the Management of Natural Reserve Area and Nature Conservation allows for geothermal development activities in conservation areas so long as they are not classified as a mining process (Article 35, verse 1c). Geothermal activities are regulated as a type of service utilization of forest ecosystem.		

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
		The Ministry of Environment and Forestry Regulation No. P.46/Menlhk/Setjen/Kum.1/5/2016 concerning Geothermal Environmental Service Utilization in the National Park, Grand Forest Park and Natural Recreation Park requiring the project proponent to obtain permit (IPJLPB/a Utilization Permit for Geothermal Environmental Services Region) for geothermal development.		
OP 4.37 Safety of Dams				
Design and Supervision of Dam Safety	Policy requires that dams be designed and its construction supervised by experienced and competent professionals. It also requires that the Borrower adopt and implement certain dam safety measures for the design, bid tendering, construction, operation, and maintenance of the dam and associated works.	Government of Indonesia Regulation No. 37/2010 concerning Dam Safety.	No gaps identified.	ESMF cover this in section 1.4.4.2. The requirements of the Policy will be included in the EMT contracts and drilling contracts, and the activities and outputs will be monitored under the ESMF.
OP 4.12 Involuntary Resettlement				
Scope/Topic	**Bank Policy**	**Government of Indonesia Regulation**	**Gaps Identified**	**ESMF**

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
Direct Impacts.	Covers provision of benefits to address direct social and economic impacts caused by loss of land, assets and income.	Relates to compensation for loss of land and assets also other losses that can be accounted caused by taking of land for a project.	No gaps identified.	Covered by the valuation methods as specified in the MAPPI Standards
Indirect impacts.	States that indirect social and economic impacts caused by project should be addressed under OP 4.01	Not covered, however indirect impact regulated in Ministry of Environment Regulation No. 16 of 2012 on Compilation of Environmental Document (AMDAL)	Indirect impacts are not covered in the land acquisition law.	It will be covered in the ESIA, ESMP and UKL/UPL
Related activities.	Covers impacts that result from other activities is if they are (i) directly and significantly related to the proposed project; (ii) necessary to achieve its objectives; and (iii) carried out or planned to be carried out contemporaneously with the project	Not covered	Related activities are not covered.	It is addressed in the RPF and will be considered in the LARAP process for each subproject.
Host Communities.	Impacts on host communities need to be considered, and host communities need to be consulted.	Not covered since option of resettlement/relocation is not sufficiently elaborated.	Host communities are not explicitly covered in the GOI regulations.	This will be addressed in the LARAP for each subproject
Resettlement as Sustainable Development Program.	Resettlement activities should be conceived as sustainable development programs, providing sufficient resources to enable persons displaced to share in	Resettlement (relocation) is an option of compensation but not sufficiently elaborated; focuses more on cash compensation.	Lack of non-cash support	RPF provides options for compensation consistent with OP4.12

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
	project benefits.			
Vulnerable Groups.	Pay particular attention to the needs of vulnerable groups among those displaced, especially those below the poverty line, the landless, the elderly, women and children, Indigenous Peoples, ethnic minorities, or other displaced persons who may not be protected through national land compensation legislation.	Project Affected People are not differentiated by vulnerability or gender.	No specific separation by vulnerability or by gender.	The LARAP will include information on the vulnerable groups (women, very poor, disable, etc.), particularly during the census survey.
Resettlement Planning Instruments.	Different planning instruments must be prepared to achieve the objectives of the policy (resettlement plan, resettlement policy framework or process framework) and must cover all aspects of the proposed resettlement.	Land acquisition plan[14] based on a feasibility study, the project suitability[15] to the spatial plan	Not equivalent with the development plan in LARAP/RP	Requirement to prepare a LARAP when subprojects involves involuntary land acquisition and resettlement
Eligibility for No Formal Legal Rights.	For those without formal legal rights to lands or claims to such land that could be recognized	Does not cover squatters (unless in good faith on public land), encroachers and renters on	Does not cover squatters	The RPF specifies that licensed appraisers compensation criteria include among others, assistance

[14]Not the same as World Bank LARAP/RP, here is more implementation procedure than development plan.
[15]At present the spatial-planning zoning could accommodate the function that proposed by the project. If not the project has to move to other place or revision of zoning should be issued by the local parliament proposed by the relevant government institution

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
	under the laws of the country, provide resettlement assistance in lieu of compensation for land to help improve or at least restore their livelihoods. Will covers squatters and encroachers	private land. • Landless and laborers are **not** expected to be **compensated and provided rehabilitation measured**; it is the responsibility of the landowner to compensate them.		and livelihood
Eligibility for Indigenous Peoples.	IPs are covered when screening identifies the presence of IPs as per characteristics in OP4.10 policy (which does not require any legal recognition).	Indigenous Peoples are covered by the land acquisition and resettlement legislation once they have been legally recognized[16]	Different ways to identify Indigenous People.	IPPF specifies that if a subproject needs to acquire land, RPF applies. **Error! Bookmark not defined.**
Land for Land (Resettlement).	Preference given to land based resettlement strategies for displaced people whose livelihoods are land based.	No time allocation and detail procedures to implement this resettlement scheme	The compensation does not prioritize land to land mechanism	RPF provides options for compensation
Benefits Package.	Provide technically and economically feasible resettlement alternatives and needed assistance, including (a) prompt compensation at full replacement cost for loss of assets attributable to the project;	Mainly cash; in MAPPI guideline compensation is market price plus transaction and other costs, plus premium (to cover beyond valuation cost such as emotional	No gaps identified	RPF provides requirements for compensation options, and licensed appraisers assess physical assets, cost and loss of non-physical assets and premium

[16]In BPN and Forestry Regulations IP institution should be recognized by local government, while institutions that in favor of IPs prefer that the recognition comes from independent IPs Committee.

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
	(b) if there is relocation, assistance during relocation, and residential housing, or housing sites, or agricultural sites of equivalent productive potential, as required; (c) transitional support and development assistance, such as land preparation, credit facilities, training or job opportunities as required, in addition to compensation measures; (d) cash compensation for land when the impact of land acquisition on livelihoods is minor; and (e) provision of civic infrastructure and community services as required.	lost). • Real Property (Physical Assets) ✓ Land ✓ Buildings & Facilities ✓ Plants ✓ Other things related to the land required to restore to the owner a property of at least the same quality as that owned prior to the land acquisition. • Cost & Loss (Non-Physical Losses) ✓ Transaction costs ✓ Moving costs ✓ Loss of on-going business (business interruption) ✓ Other losses of special nature, subjective and difficult to calculate • Premium		
Full Replacement Cost.	Requirement for compensation for land and asset to be at full replacement cost	"Fair and reasonable", based on value assessment made by the licensed appraisers.	No gaps identified	Criteria used by licensed appraisers as specified in the RPF included compensation for physical, non-physical and premium
Livelihood Restoration.	The resettlement plan or resettlement policy framework also include measures to ensure that	Once fair compensation given further consideration and impact	Impact mitigation not elaborated.	RPF included resettlement assistance and livelihood

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
	displaced persons are: (i) Offered support after displacement, for a transition period, based on a reasonable estimate of the time likely to be needed to restore their livelihood and standards of living such support could take the form of short-term jobs, subsistence support, salary maintenance or similar arrangements; and (ii) Provided with development assistance in addition to compensation measures described in paragraph 6 (a) (iii), such as land preparation, credit facilities, training, or job opportunities.	mitigation are not elaborated.		
Indigenous Peoples.	Land of indigenous people is addressed in both OP 4.12 and OP 4.10. If land of IPs is to be taken, requires broad community support and free, prior and informed consultation.	Land of indigenous people is treated in the same way as other, if land rights are recognized by relevant local government	WB policy requires specific engagement and broad community support by Indigenous Peoples.	RPF applies of a subproject involve land acquisition and/or resettlement, regardless of who own the land. Consultation as specified in the RPF and LARAP should be consistent with the IPPF (free, prior and informed consultation, broad community support), specifically tailored to the local context and the

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
				characteristics of the affected persons.[17]
Resettlement Cost.	The full costs of resettlement activities necessary to achieve the objectives of the project are included in the total costs of the project. [20]	Budget plan is part of land acquisition plan but tend not considering the resettlement cost.	Budget plan does not prioritize resettlement cost.	RPF and LARAP require that costs for land acquisition and resettlement is budgeted
Consultation and Complaint Procedure.	Displaced persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs (2.b) Grievance mechanism should take into account availability of judicial recourses and community and traditional dispute settlement mechanism (17)	Consultation to the Project Affected People needed to get permit for the proposed location of the project. There is no prior consultation before negotiation on option of compensation. The grievance redress mechanism is clearly described and within the court it will follows the court procedure. Understanding the limitation and over burden of the court system, the effectiveness of the implementation still in question	Consultation is limited, grievance redress mechanism is limited to the court system.	RPF and LARAP require consultation and implementation of GRM. Overall, the project has GRM in place as a continuation of the well-functioning GRM system of the PNPM-Urban/ND.
Monitoring of outcomes.	Requirement to carry out adequate monitoring and evaluation of all activities set out in the	Monitoring and evaluation covers the occupation, ownership, utilization and benefit of the result	No mechanism for enforcing corrective measures.	LARAP specify the requirement of monitoring of land acquisition and resettlement activities. Overall,

[17]Refer to the definition of Indigenous Peoples, the legal framework and to the consultation methods, in the IPPF, Section 7.

Scope/Topic	Bank Policy	Government of Indonesia Regulation	Gaps Identified	Addressed in the ESMF (This ESMF covers PT SMI's ESS)
	resettlement plan [24] Assess whether the objectives of the resettlement instrument have been achieved, upon completion of the project, taking account of the baseline conditions and the results of resettlement monitoring [24]	of land acquisition without clear on when, how and what correction measure could be enforced.		the project is required to monitor and report the preparation and implementation of LARAP (and EMPs and IPPs as well)

4 ANTICIPATED ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

4.1 Geothermal Exploration – Drilling Activities and Associated Infrastructure and Activities

74. The following anticipated impacts and mitigation measures are relevant for exploration sub-projects under GREM Component 1.

Table 3Environmental and Social Aspects, Potential Impacts and Mitigation Measures for Geothermal Exploration Activities

Environmental and Social Aspects and Issues	**Potential Impacts**	**Mitigation Measures**
Natural habitats, including critical natural habitats **Aquatic and terrestrial habitats and endemic species** **Forest resource users** **Water users** **Aesthetics and landscapes**	Land clearance for well pads, roads, pipelines and supporting infrastructure will cause direct damage or destruction to natural habitats.	Avoid, or otherwise minimize, development in sensitive areas (forest habitats, landscapes, scenic areas etc.) Adoption of directional drilling to avoid sensitive areas. Remove and decommission infrastructure after exploration and rehabilitate areas quickly, re-contour where necessary to natural ground conditions and replant with native species or commercial species (depending on land use). Prepare a mitigation plan for land use following the exploration activities, together with communities and local authorities to avoid indiscriminate development and potential conflict. Specifically, for project located in conservation forest: • Provide justification that there are no feasible alternatives for the project and its siting, and comprehensive analysis demonstrates that overall benefits from the projects substantially outweigh the environmental costs. • Minimizing habitat loss (e.g., strategic habitat retention and post-development restoration) and establishing and maintaining ecologically similar protected area.
	Roads, pipelines and drilling pads can create intrusions into natural and scenic landscapes.	
	Indirect impacts from induced development (agriculture, poaching, land clearances, land disputes) into forested areas and protected natural areas. The geothermal working area of the sub borrower may cover conservation forest areas.	
	Water abstractions and discharges to water of treated wastewater / drilling fluids and other wastes cause direct or indirect impacts on habitats and species. Pollution of water or water abstractions affects other water users.	Separate different waste streams and treat via ponds, dosing, cooling and other methods before discharge to land or water bodies. Avoid overexploitation of freshwater resources – find multiple sources, take from streams with high flow rate, time drilling for the rainy season, use storage dams or ponds, take no more than 1/3 of the seasonal low flow from surface water features. Identify other water uses such as farm irrigation and ensure sustainable abstraction rates that do not interfere with their water use, fishing etc.

Environmental and Social Aspects and Issues	Potential Impacts	Mitigation Measures
	Possible overflow or failure of ponds.	Discharge to reinjection wells wherever feasible. Reuse of drilling fluids. Use septic tanks to treat domestic waste water before discharge to land. Empty septic tanks regularly and dispose sludge to landfill. Resource planning and management, in conjunction with authorities & communities to locate storage ponds away from sensitive areas. Careful design of ponds in accordance with OP4.36 Safety of Dams and monitoring of pond structures for signs of failure.
	Indiscriminate dumping of hazardous and solid waste to riparian zones and water ways.	Maintain safe systems of hazardous materials and solid waste management as part of Construction and Drilling standard operating procedures and EMP. Separate waste streams and recycle, compost and reuse waste where possible. Keep waste tidy / covered / secure. Dispose of unrecyclable waste to designated landfills that have permits from local authorities. Clean and remove spills and remediate land quickly. Train staff to use spill equipment and respond to incidents. Prohibit dumping of waste.
	Poaching and hunting of animals by workers. Competition with locals for forest resources.	Prohibit poaching and hunting, and use of forest resources, as part of workforce management.
Land use, and soils (and subsequent surface and groundwater contamination)	Discharge of contaminated muds and fluids to ground.	Avoid discharging fluids to ground. Test muds for contaminants prior to disposal. Contaminated muds will be treated according to GOI regulation, for utilization and/or disposed to lined landfill.
	Spills of hazardous materials. Indiscriminate dumping of solid and hazardous waste.	Maintain safe systems of hazardous materials and solid waste management as part of Construction and Drilling standard operating procedures and EMP. Separate waste streams and recycle, compost and reuse waste where possible. Keep waste tidy / covered / secure.

Environmental and Social Aspects and Issues	Potential Impacts	Mitigation Measures
		Dispose of unrecyclable waste to designated landfills that have permits from local authorities. Clean and remove spills and remediate land quickly. Train staff to use spill equipment and respond to incidents. Prohibit dumping of waste.
	Loss of topsoil, landslides and other severe erosion from road construction, pipelines, pad construction, borrow pits, quarries, fill sites.	Avoid high risk areas such as steep terrain. Minimize land clearance, especially on slopes. Design bank stability, slope protection and drainage systems into road design, borrow pit design etc. Restore disturbed and damaged areas immediately. Employ sediment and erosion control measures during construction (fences, traps, treatment ponds etc.). Take / dispose material to approved sites.
	Land use change after drilling operation and abandoned unproductive wells	Land reclamation / rehabilitation.
Geothermal features	Interference from pumping or reinjection of geothermal water, or from abstraction of freshwater. Damage from road construction, pipelines or other ancillary activities.	Identify and avoid significant features (values such as cultural, historical, spiritual, scientific, biological, landscape, ecotourism etc.) Avoid damaging or disturbing geothermal features where possible. Monitor activity to identify interference from pumping or reinjection. Adjust well testing and reinjection where necessary to mitigate significant impacts. Provide barriers and avoid disturbances to features from construction operations where necessary.
Groundwater	Contamination of groundwater from interference with geothermal water from abstraction wells or reinjection wells.	Prepare wells with appropriate casing and well head protection to prevent contamination. Monitor well levels and pressure to identify leaks early and repair casing or decommission wells to avoid further contamination.
	Impacts on aquifer levels from over-abstraction for fresh water supplies.	Model yield to ensure sustainable groundwater use. Use multiple sources. Use storage tanks, ponds and dams to store water.
Ambient noise	Drilling rig operations, increased traffic, well discharge testing, heavy machinery,	Plan work to avoid disturbances at sensitive times (night, holidays)

<table>
<tr><th>Environmental and Social Aspects and Issues</th><th>Potential Impacts</th><th>Mitigation Measures</th></tr>
<tr><td></td><td>and blasting for roads or quarrying – all emit noise not otherwise experienced in the project area.

Disturbances to animals, domestic life, working life, schooling.</td><td>Locate sites away from noise-sensitive receptors such as schools and villages.

Restrict traffic through villages and near sensitive receptors.

Use noise barriers such as bunds, or the natural topography.

Warn people before noisy work begins and provide specific mitigation options to vulnerable people (such as temporary relocation).

Use appropriate construction methods and equipment (and keep maintained).

Prepare a study (use consultant services) to evaluate the acceptable noise level for animals in the geothermal exploration field location if required.

Use Guidelines for ambient noise levels (by receptor):
<table>
<tr><th rowspan="2">Receptor</th><th colspan="2">Maximum allowable Leq (hourly), in dB(A)</th></tr>
<tr><th>Daytime
07.00-22.00</th><th>Nighttime
22.00-07.00</th></tr>
<tr><td>Residential; institutional; educational</td><td>55</td><td>45</td></tr>
<tr><td>Industrial; commercial</td><td>70</td><td>0</td></tr>
</table>
</td></tr>
<tr><td rowspan="2">Ambient air quality</td><td>Discharge to air of contaminants from well testing and drilling (hydrogen sulfide, mercury, arsenic etc.), depending on the nature of the resource.</td><td>Locate sites away from sensitive receptors such as schools and villages.

Warn people before work begins and provide specific mitigation options to vulnerable people (such as temporary relocation).

Safety planning and measures for uncontrolled gas releases.

Remediation / replacement of any damaged vegetation, crops etc.</td></tr>
<tr><td>Dust emissions from road construction, land clearance, site activities.</td><td>Locate sites away from sensitive receptors such as schools and villages.

Control dust with water during windy and dry conditions.

Stage land clearance activities and rehabilitate open areas quickly.</td></tr>
<tr><td>Critical infrastructure</td><td>Damage or destruction to critical infrastructure (roads, ports, bridges)</td><td>Upgrade infrastructure prior to use.

Provide new, purpose-built infrastructure.

Repair damaged infrastructure to at least the pre-project condition.</td></tr>
<tr><td>Occupational health and safety</td><td>Risks relating to working with machinery, traffic accidents, falling into ponds,</td><td>Gas monitoring systems.

Appropriate personal protective equipment (PPE).</td></tr>
</table>

Environmental and Social Aspects and Issues	Potential Impacts	Mitigation Measures
	scalding from hot fluids and steam, toxic gas emissions. Non-routine risks such as well blow outs.	Appropriate training. Implement safety systems and procedures. Shielding surfaces where working with hot fluids and steam. Fencing ponds and mud pits. Well maintained vehicles and machinery. Emergency and incident planning and management. First aid training, and plans for evacuation to hospital.
Land ownership, livelihood and resettlement	Involuntary resettlement for quarries, roads, well pads, pipelines and other sites where land is required, leading to loss of livelihood and social disconnection. Loss of crops, structures, and other assets	Prioritize willing buyer-willing seller negotiations for land lease or land purchase. Consult widely and identify all affected persons, including squatters. Compensate at replacement value. Use the RPF guidance for involuntary land acquisition and resettlement.
	Restricting access to forests or other resources.	Consult widely and engage communities in any changes to forest access and management. Integrate resettlement and livelihood issues into the integrated management plans.
Social Wellbeing	Concerns and complaints of affected communities. Potential risks to the cultural integrity and social organization of indigenous peoples and other remote, vulnerable communities.	Consultation on risks and adverse impacts of the project and creation of opportunities to receive affected communities' views on project. Establishment of grievance mechanism to collect and facilitate resolution of affected communities' concerns and grievances regarding the sponsor's environmental and social performance. Transparent public disclosure to inform each phase of the project through web site, notice boards, telecommunication tools and public meetings. Establishing well designed and structured public questionnaire to receive feedback from affected communities Conducting screening assessment to avoid potential impact to cultural integrity and social organization. When affecting integrity and social organization, socio-cultural assessment to be applied to further develop option to protect /mitigate
Community health and safety	Risks to bystanders and community	Location of sites away from sensitive receptors.

Environmental and Social Aspects and Issues	Potential Impacts	Mitigation Measures
	relating to traffic accidents, toxic gas emissions,	Adoption of directional drilling to avoid populated and sensitive areas. Gas monitoring systems. Traffic warning systems (pilot vehicles, roadside signs) Appropriate training of drivers. Regular community consultation. Warning signs. Emergency planning includes community.
	Unauthorized access to drilling rigs and storage / treatment ponds	Fencing around well site, ponds and pits. Warning signs. Regular community consultation. ID required to use access road and/or work on site.
Physical cultural resources. **Historic, spiritual, archaeological, religious, graves, etc.**	Disturbance, degradation, desecration of sites or artefacts as a result of land disturbances, land acquisition, impacts on geothermal features or landscapes.	Locate sites away from PCR. Use the PCR Management Plan to remedy impacts (mitigation, minimization, relocation etc.). Use the chance find procedure to stop work immediately on the discovery of a PCR.
Indigenous Peoples	Potential impacts on access to resources and connection to the land. Lack of access to benefits of the project.	Consult early and extensively (Free, Prior and Informed Consultation) in accordance with the IPPF, in language and using methods appropriate to the IP group. Include IP in the project design, and ensure that benefits accrue to IP. Avoid and minimize harm to IP, and engage with them to identify appropriate mitigation.
Sub borrower's environmental and social capacity	Subproject asset transfer/acquisition to different sub borrower. Low capacity of safeguards.	Environmental and social audit to identify new sub borrower capacity for carrying out existing EA. Provide training / workshop and commitment letter if necessary.

4.2 Post Project Activities: Geothermal Exploitation – Energy Generation and Associated Infrastructure and Activities

75. In addition to those activities that are listed in Section 1, exploitation phase activities within the project area of influence will also be screened, as this information will be relevant to the risk assessment for exploration, and it will inform the recommendations as part of

the post-exploration Geothermal Data Package. The screening report will clearly state which risks relate to the funded exploration project and which relate to the future, post-project exploitation projects/activities. This partial assessment (screening) is part of the ESIA process. They will not be fully assessed as the nature and scale of the activities will not be confirmed at this time[18].

Table 4Environmental and Social Aspects, Potential Impacts and Mitigation Measures for Geothermal Exploitation Activities

Environmental and Social Aspects and Issues	**Potential Impacts**	**Mitigation Measures**
Natural habitats, including critical habitats **Aquatic and terrestrial habitats and species** **Forest resource users** **Water users** **Aesthetics and landscapes**	Land clearance for power station, substation, and transmission lines cause direct damage or destruction to natural habitats.	Avoid, or otherwise minimize, development in sensitive areas (habitats, landscapes, scenic areas etc.) Develop integrated resource management plans, inclusive of community-driven development opportunities, to manage long term impacts from induced development. Develop this in coordination with relevant land owners, communities, Ministries and local authorities to avoid indiscriminate development and potential conflict. Rehabilitate areas quickly, re-contour where necessary to natural ground conditions and replant with native species or commercial species (depending on land use). Specifically, for project located in conservation forest: • Provide justification that there are no feasible alternatives for the project and its siting, and comprehensive analysis demonstrates that overall benefits from the projects substantially outweigh the environmental costs. • Minimizing habitat loss (e.g., strategic habitat retention and post-development restoration) and establishing and maintaining ecologically similar protected area.
	Power station, substation, transmission lines can create intrusions into natural and scenic landscapes.	
	Indirect impacts from induced development (agriculture, poaching, land clearances, land disputes) into forested areas and protected natural areas. The geothermal working area of the sub borrower may cover conservation forest areas.	
	Water abstractions for cooling towers or domestic / office use and discharges to water of cooling water and other wastes cause direct or indirect impacts on habitats and species. Pollution of water or water abstractions affects other water users. Possible overflow or failure of ponds.	Separate different waste streams and treat via ponds, dosing, cooling and other methods before discharge to land or water bodies. Prioritize discharges to reinjection wells over surface water bodies and land. Avoid overexploitation of freshwater resources – find multiple sources, take from streams with high flow rate, time drilling for the rainy season, use storage dams or ponds, take no more than 1/3 of the seasonal low flow from surface water features. Identify other water uses such as farm irrigation and ensure sustainable abstraction rates that do not interfere with their water use, fishing etc. Reuse of cooled water for other plant uses, or use closed loop systems.

[18]Detailed impact assessment and preparation of ESIA/AMDAL would be undertaken in future, if exploitation was to be pursued. This is beyond the life of this project. This GREM ESMF will not apply to the post exploration stages.

Environmental and Social Aspects and Issues	Potential Impacts	Mitigation Measures
		Use septic tanks to treat domestic waste water before discharge to land. Empty septic tanks regularly and dispose sludge to landfill. Resource planning and management, in conjunction with authorities & communities to locate storage ponds away from sensitive areas. Careful design of ponds in accordance with OP4.36 Safety of Dams and monitoring of pond structures for signs of failure.
	Well blow-outs discharging contaminants. Possibility of discharge of mud or fluid from inside the well as the result of overburden pressure from the formation inside the well annulus.	Design of emergency response for well blowout and pipeline raptures including measures for containment of geothermal fluid spills. Use of geothermal energy exploration contractor that has high competency and certified with international standard well control certification, trained to detect any fluid kick potential from inside the borehole and able to give a quick response. Use of safety exploration devices with international standard, such as well head and blow out preventer that could minimalized the risk of fluid kick from inside the borehole. Use of mud pit to storage the potential fluid discharge from inside the borehole. Regular maintenance of wellheads and geothermal fluid pipelines: - corrosion control and inspection - pressure monitoring - use of blowout prevention equipment (e.g. shutoff valves)
	Indiscriminate dumping of sulphur, silica, and carbonate precipitates collected from cooling towers, air scrubber systems, turbines, and steam separators, and other hazardous wastes to riparian zones and water ways.	Maintain safe systems of hazardous materials and solid waste management as part of Power Station standard operating procedures and Environmental Management System. Separate waste streams and recycle, compost and reuse waste where possible. Keep waste tidy / covered / secure. Dispose of unrecyclable waste to designated landfills that have permits from local authorities. Clean and remove spills and remediate land quickly. Train staff to use spill equipment and respond to incidents. Prohibit dumping of waste.
	Poaching and hunting of animals by workers. Competition with locals for forest resources.	Prohibit poaching and hunting, and use of forest resources, as part of workforce management.
Land use, and soils (and subsequent surface and	Discharge of sulphur, silica, and carbonate precipitates collected from cooling towers,	Sludge / precipitates to be stored in bunded areas. Test sludge for leachability of contaminants prior to disposal.

Environmental and Social Aspects and Issues	Potential Impacts	Mitigation Measures
groundwater contamination)	air scrubber systems, turbines, and steam separators to land.	Contaminated sludge will be dewatered, treated as hazardous waste and disposed to lined landfill. Non-hazardous wastes will be buried away from water sources.
	Spills of hazardous materials. Indiscriminate dumping of other solid and hazardous waste.	Maintain safe systems of hazardous materials and solid waste management as part of Power Station standard operating procedures and Environmental Management System. Separate waste streams and recycle, compost and reuse waste where possible. Keep waste tidy / covered / secure. Dispose of unrecyclable waste to designated landfills that have permits from local authorities. Clean and remove spills and remediate land quickly. Train staff to use spill equipment and respond to incidents. Prohibit dumping of waste.
	Loss of topsoil, landslides and other severe erosion from distribution infrastructure construction and other construction sites.	Avoid high risk areas such as steep terrain. Minimize land clearance, especially on slopes. Use temporary haulage roads and restore promptly. Design bank stability, slope protection and drainage systems into site design. Restore disturbed and damaged areas immediately. Employ sediment and erosion control measures during construction (fences, traps, treatment ponds etc.). Take / dispose material to approved sites.
	Abandoning well pad area where the drilling failed or the well is not productive.	Land reclamation/rehabilitation.
Geothermal features	Interference from pumping or reinjection of geothermal water, or from abstraction of surface water.	Identify and avoid significant features (values such as cultural, historical, spiritual, scientific, biological, landscape, ecotourism etc.) Avoid damaging or disturbing geothermal features where possible. Model the geothermal reservoir and geothermal features. Monitor activity to identify interference from pumping or reinjection. Adjust production and reinjection where necessary to mitigate significant impacts. Provide barriers and avoid disturbances from construction and operations where necessary.
Groundwater and geothermal reservoir	Contamination of groundwater from interference with geothermal water from abstraction wells or reinjection wells.	Prepare wells with appropriate casing and well head protection to prevent contamination. Monitor well levels and pressure to identify leaks early and repair casing or decommission wells to avoid further contamination.

<table>
<tr><th>Environmental and Social Aspects and Issues</th><th>Potential Impacts</th><th>Mitigation Measures</th></tr>
<tr><td></td><td></td><td>Detailed analysis of aquifer structure and existing groundwater use at development area
Determination of existing groundwater users in the vicinity of the operational wells (e.g. 1 km) should be identified. In addition, some of technical information about existing groundwater wells (e.g. depth, flow, etc.) should be collected.</td></tr>
<tr><td></td><td>Impacts on aquifer levels from over-abstraction for fresh water supplies.</td><td>Model yield to ensure sustainable groundwater use.
Use multiple sources of fresh water. Use storage tanks, ponds and dams to store water.</td></tr>
<tr><td></td><td>Over-abstraction of geothermal resource, leading to subsidence, saline intrusion, impacts on aquifer levels, reduced geothermal yield</td><td>Modelling of geothermal abstractions and reinjections.
Locate make up and reinjection wells to maximise the efficient use of the geothermal resource and avoid land subsidence.
Monitor ground subsidence, groundwater levels and water quality.
Construct and maintain wells to avoid interference with groundwater.</td></tr>
<tr><td>Ambient noise</td><td>Construction works, cooling tower fans, the steam ejector, and the turbine ’hum’.
Disturbances to animals, domestic life, working life, schooling.</td><td>Plan work to avoid construction disturbances at sensitive times (night, holidays)
Locate sites away from noise-sensitive receptors such as schools and villages.
Use noise barriers such as bunds, or the natural topography.
Use Guidelines for ambient noise levels (by receptor):
<table>
<tr><th rowspan="2">Receptor</th><th colspan="2">Maximum allowable Leq (hourly), in dB(A)</th></tr>
<tr><th>Daytime
07.00-22.00</th><th>Nighttime
22.00-07.00</th></tr>
<tr><td>Residential; institutional; educational</td><td>55</td><td>45</td></tr>
<tr><td>Industrial; commercial</td><td>70</td><td>0</td></tr>
</table></td></tr>
<tr><td>Ambient air quality</td><td>Toxic gas emissions from cooling tower, open contact condenser cooling tower systems.</td><td>Locate plant away from sensitive receptors (model air emissions to assist with identification of suitable location of plant).
Consideration of total or partial re-injection of gases with geothermal fluids.
Using closed non-contact cooling alternatives.
Depending on the characteristics of source, venting of toxic chemicals (i.e. hydrogen sulfide and non-condensable volatile mercury) in line with current regulations.
Depending on the characteristics of source, removal of possible toxic chemicals from non-condensable gases.</td></tr>
<tr><td>Critical infrastructure</td><td>Damage or destruction to critical infrastructure (roads, ports, bridges) during construction.</td><td>Upgrade infrastructure prior to use.
Provide new, purpose-built infrastructure.
Repair damaged infrastructure to at least the pre-project condition.</td></tr>
</table>

Environmental and Social Aspects and Issues	Potential Impacts	Mitigation Measures
Occupational health and safety	Risks relating to working with machinery, traffic accidents, falling into ponds, scalding from hot fluids and steam, working at height, working in a noisy environment, construction site-related risks. Toxic gas emissions during operation of power plant Non-routine exposures include potential blowout accidents during operation.	Installation of hydrogen sulfide monitoring and warning systems. Development of a contingency plan for hydrogen sulfide release events, including all necessary aspects from evacuation to resumption of normal operations. Provision of an emergency response teams, with personal hydrogen sulfide monitors, self-contained breathing apparatus and emergency oxygen supplies, and training in their safe and effective use. Provision of adequate ventilation of occupied buildings to avoid accumulation of hydrogen sulfide gas. Appropriate PPE. Appropriate training. Implement site specific safety systems and procedures (construction and operation). Shielding surfaces where working with hot fluids and steam. Fencing ponds and pits. Well maintained vehicles and machinery. Emergency and incident planning and management. First aid training, and plans for evacuation to hospital. Design of emergency response for well blowout and pipeline raptures including measures for containment of geothermal fluid spills. Regular maintenance of wellheads and geothermal fluid pipelines: - corrosion control and inspection - pressure monitoring - use of blowout prevention equipment (e.g. shutoff valves).
Well-drilling impact	Induced seismicity or earthquake activity when large amounts of geothermal fluids are withdrawn and injected below the earth's surface Land subsidence Land subsidence can occur following the withdrawal of large amounts of fluid—water, oil, and even geothermal fluid—from beneath the earth's surface.	Ensure close monitoring of the activity Assure to Inject spent geothermal fluids back into reservoirs to sustain resources in order to prevent subsidence from occurring.
Land ownership, livelihood and resettlement	Involuntary resettlement for power plant, distribution infrastructure, associated facilities leading to loss of livelihood and	Prioritize willing buyer-willing seller negotiations for land lease or land purchase. Consult widely and identify all affected persons, including squatters.

Environmental and Social Aspects and Issues	Potential Impacts	Mitigation Measures
	social disconnection. Loss of crops, structures, and other assets.	Compensate at replacement value. Use the RPF guidance for involuntary land acquisition and resettlement.
	Restricting access to forests or other resources.	Consult widely and engage communities in any changes to forest access and management. Integrate resettlement and livelihood issues into the integrated management plans.
	Impacts on other economic activities such as tourism, fishing, agriculture.	Consult with the representatives of industries that could be affected by geothermal development. Work on opportunities to enhance the benefits to the sector (such as improved roads or more reliable electricity) or minimize impacts on the sector, as part of the EMP and integrated management plans.
Social Wellbeing	Concerns and complaints of affected communities.	Consultation on risks and adverse impacts of the project and creation of opportunities to receive affected communities' views on project. Establishment of grievance mechanism to collect and facilitate resolution of affected communities' concerns and grievances regarding the sponsor's environmental and social performance. Transparent public disclosure to inform each phase of the project through web site, notice boards, telecommunication tools and public meetings. Establishing well designed and structured public questionnaire to receive feedback from affected communities
	Potential risks to the cultural integrity and social organization of indigenous peoples and other remote, vulnerable communities.	Conducting screening assessment to avoid potential impact to cultural integrity and social organization. When affecting integrity and social organization, socio-cultural assessment to be applied to further develop option to protect /mitigate
Community health and safety	Risks to bystanders and community relating to traffic accidents, toxic gas emissions.	Location of sites away from sensitive receptors. Continuous operation of the hydrogen sulfide gas monitoring systems to facilitate early detection and warning. Construction traffic warning systems (pilot vehicles, roadside signs) Appropriate training of drivers. Regular community consultation. Warning signs. Emergency planning includes community.
	Unauthorized access to construction sites or power plant, substation and switch yard.	Fencing around all construction sites, power plant etc. Warning signs and security gates.

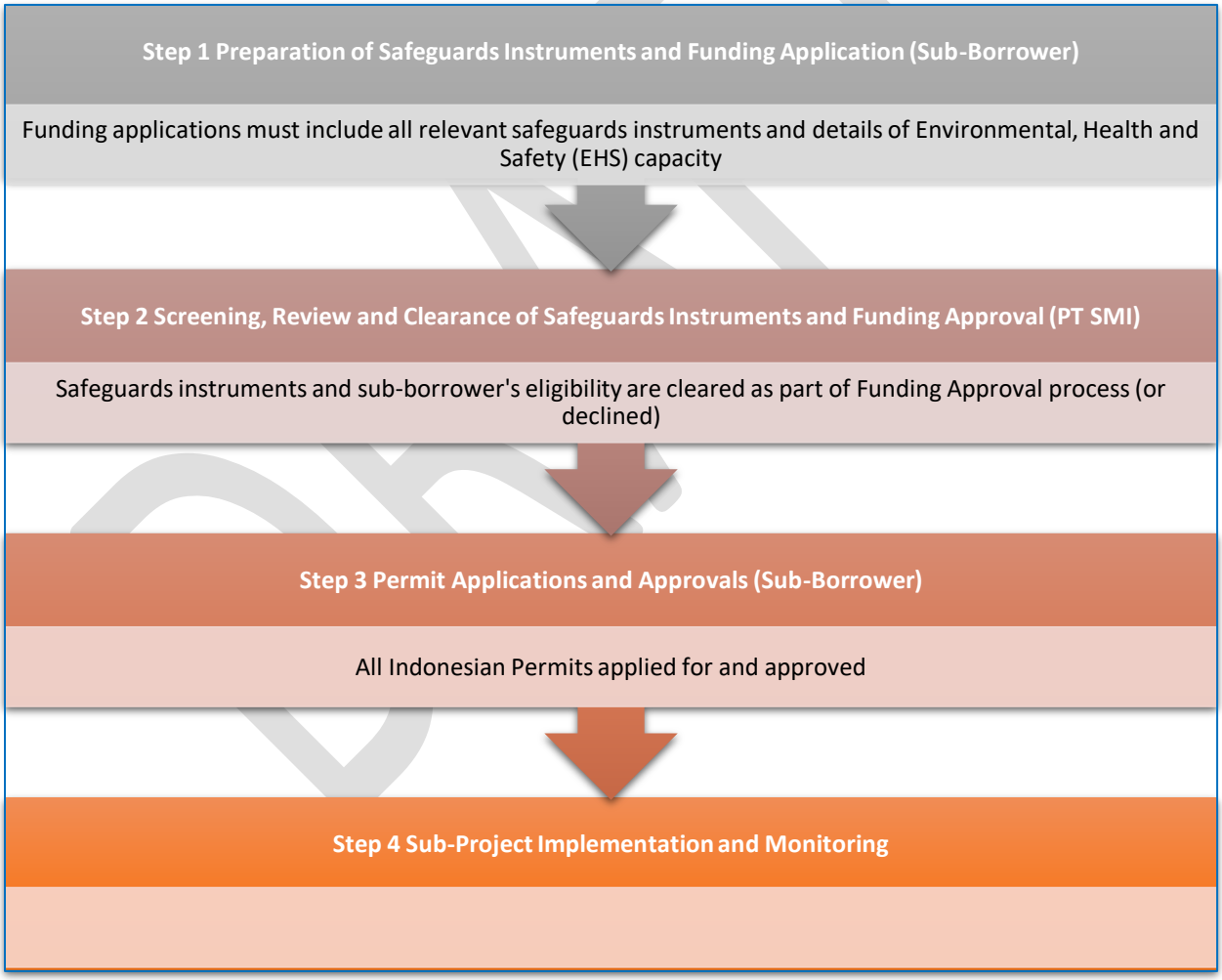
Environmental and Social Aspects and Issues	Potential Impacts	Mitigation Measures
		Regular community consultation. ID required to use access road and/or work on site.
Physical cultural resources. **Historic, spiritual, archaeological, religious, graves, etc.**	Disturbance, degradation, desecration of sites or artefacts as a result of construction of power station infrastructure or alignment of transmission lines.	Locate sites away from PCR. Use the PCR Management Plan to remedy impacts (mitigation, minimization, relocation etc.). Use the chance find procedure to stop work immediately on the discovery of a PCR.
Indigenous Peoples	Potential impacts on access to resources and connection to the land. Lack of access to benefits of the project	Consult early and extensively (Free, Prior and Informed Consultation) in accordance with the IPPF, in language and using methods appropriate to the IP group. Include IP in the project design, and ensure that benefits accrue to IP. Avoid and minimize harm to IP, and engage with them to identify appropriate mitigation.
Sub borrower's environmental and social capacity	Subproject asset transfer/acquisition to different sub borrower. Low capacity of safeguards.	Environmental and social audit to identify new sub borrower capacity for carrying out existing EA. Provide training / workshop and commitment letter if necessary.

5 SUB-PROJECT SAFEGUARDS OPERATIONAL PROCEDURES

5.1 Overview

76. All environmental and social impacts should be identified, and their mitigation interventions proposed as part the sub-project funding proposal. All exploration sub-projects under GREM should be required to comply or undergo the standard requirements and procedures commensurate with the nature and magnitude of the environmental and social risks. The sub-borrower will prepare the safeguards instruments and PT SMI will review, provide comment and clear the instruments as part of the agreement to fund the sub-project. The sub-borrower is responsible for the implementation of mitigation and management measures and PT SMI is responsible for supervision and enforcement.

Figure 2 Sub-project Safeguards Process



5.2 Step 1: Preparation of Safeguards Instruments and Funding Application (Sub-Borrower)

77. The sub-borrower will prepare all relevant safeguards instruments and EHS capacity as required by the ESMF, RPF and IPPF and submit them as part of the application for funding from PT SMI under the GREM project.

78. There are three scenarios for development under GREM:

i. Sub-borrower has not made any exploration activities (i.e. greenfield) and consequently no safeguard instruments have been prepared. Sub-borrower will be required to prepare safeguards instruments in accordance with the ESMF, RPF and IPPF with the funding application. In this case, PT SMI will review the safeguard instruments and obtain the commitment from the sub-borrower to fill any gaps as required.

ii. Sub-borrower already prepared the safeguard instruments, but the construction has not been initiated. In this case, PT SMI will carry out environmental and social due diligence (including for all relevant permits) and obtain the commitment from the sub-borrower to close the gaps and conduct additional study as required.

iii. Sub-borrower already started the construction and implemented the safeguard instruments (i.e. brownfield). This case might be found at private sector sub-borrower in which the sub-borrower has developed infrastructure to access the site, or even has drilled the first well and will continue drilling the next wells under GREM financing. In this case, PT SMI will carry out environmental and social due diligence (including for all relevant permits) and monitor the safeguard implementation. The sub-borrower will make the commitment to follow up the environmental and social due diligence results and conduct additional study and otherwise fill gaps as required by PT SMI.

5.2.1 EHS Capacity

79. Sub-borrower must provide evidence of the EHS policies and management system, staff, expertise, experience, relevant to managing the safeguards of the geothermal exploration.

5.2.2 Safeguards Instruments

80. The following are mandatory environmental and social planning requirements that a sub-borrower is required to carry out and complete as part of their sub-project proposal and these safeguard assessments and plans will be reviewed and assessed by PT SMI as part of their funding proposal.

5.2.2.1 Sub-Project UKL/UPL

81. In accordance with Indonesian regulations, every geothermal exploration sub-project is required to have a UKL/UPL and an Environmental Permit. The required format and contents of the document is provided in Appendix E. The sub-borrower should refer to the ESMF when

preparing the UKL/UPL for the GREM application. For the GREM, the content of the UKL/UPL mitigation and monitoring plans will be the same as the ESMP. To comply with OP4.01, the ESMP will contain additional information on capacity assessment and capacity building plans, implementation arrangements and implementation budget.

5.2.2.2 Sub-Project Environmental and Social Impact Assessment

82. Every geothermal exploration sub-project under GREM will require an ESIA. The breadth, depth and type of analysis will depend on the nature, scale, and potential impacts of the proposed sub-project. The sub-borrower should refer to this section and the relevant annexes of the ESMF when preparing the ESIA for the GREM application. The PT SMI review process will identify / confirm the scope / content of the ESIA.

83. The Environmental Assessment (EA) evaluates a sub project's potential environmental risks and impacts in its area of influence; and identifies ways of improving project planning, design and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts, including throughout the project implementation. Preventive measures will be favoured over mitigation or compensatory measures whenever feasible.

84. An EA takes into account the natural environment (air, water, land and groundwater), human health and safety, and project-related social (involuntary resettlement, Indigenous Peoples, and cultural property), trans-boundary, and global environmental aspects. The EA considers natural and social aspects in any integrated way. It takes into account the following aspects:

- variations in sub-project and country conditions;
- findings of country environmental studies;
- overall national policy framework, environmental actions plans, legislations and licensing and permitting requirements;
- World Bank Group EHS Guidelines;
- PT SMI's and sub borrowers' capabilities related to the environment and social aspects, and its history of compliance with national and local laws, including those on environment and public consultation and notification;
- An analysis of possible alternatives; and
- National obligations under international environmental treaties and agreements relevant to the sub-project.

85. Sub-projects that would contravene such country obligations as identified during the EA will not be supported under the GREM.

86. The social impact assessment and mitigation strategy will encompass the following activities:

(a) *Social assessment survey* of the community groups impacted by the geothermal exploration: collecting relevant data on Indigenous Peoples, income, livelihoods, access to services, customs and norms, and identifying vulnerable community members and gender issues;

(b) Identification of *land acquisition requirements* for the project footprint: assessments of the land ownership status, understanding of affected peoples' willingness to participate in voluntary or involuntary land acquisition, and accordingly apposite options and preferences (potentially suggested by affected people) for both voluntary and involuntary land acquisition scenarios;

(c) Development of approach and mechanism for *land lease for collective land ownership* or communally owned assets;

(d) Undertaking of a *survey of physical cultural resources (PCR)* in the area, through consultation with the affected communities and stakeholders, and identification and mapping of cultural heritage assets such as cultural, religious, historical and archaeological sites, including sacred sites, graveyards and burial places; and

(e) Screening for presence of Indigenous Peoples in the project area of influence will be included in the Social Assessment reviewing key aspects as listed in Appendix J. The social assessment of the indigenous peoples in Indonesia is provided in Appendix K.

(f) Assess potential, specific impacts and risks to IPs (if present) and the initiation of free, prior and informed consultations with affected IPs.

87. The ESIA methodology will include a detailed screening process to identify the potential risks and issues with the associated exploitation phase and the approach to how the phases of geothermal exploration and exploitation will be presented and discussed during consultation.

88. The ESIA will include an examination of the sub-project's potential negative and positive environmental impacts, and will compare them with those of feasible alternatives (including the 'without sub-project' situation). Recommendations will be made of any measures needed to prevent, minimize, mitigate or compensate for adverse impacts and improve environmental performance.

5.2.2.3 Sub-Project Environmental and Social Management Plan

89. Every geothermal exploration sub-project under GREM will require an ESMP. The scope will depend on the nature, scale, and potential impacts of the proposed sub-project. The contents of an ESMP are provided in Appendix D consistent with World Bank Policy OP4.01 Environmental Assessment and World Bank Group Industry Sector EHS Guidelines for Geothermal. The sub-borrower should refer to the ESMF when preparing the ESMP for the

GREM application. For the GREM, the content of the ESMP mitigation and monitoring plans will be the same as the UKL/UPL. To comply with OP 4.01, the ESMP will contain additional information on capacity assessment and capacity building plans, implementation arrangements and implementation budget.

90. An ESMP may include specific sub-plans such as a Physical Cultural Resources Management Plan, or Biodiversity Management Plan, Labour Influx Management Plan, Health and Safety Management Plan, Citizen Engagement Plan as necessary to manage specific and significant impacts.

5.2.2.4 Sub Project Land Acquisition and Resettlement Instruments

91. The sub-borrower should refer to the RPF for detailed requirements in this regard. The matrix for identifying the applicable instrument for land acquisition and resettlement is as follows:

Table 5 Land Acquisition and Resettlement Instrument Matrix

Trigger	**Instrument**
Voluntary land acquisition through a willing buyer-willing seller, or lease arrangement.	No LARAP is required List of land owners, size of land, minutes of consultations, sales agreements and invoices are documented.
Assets are affected by a sub-project, but not related to land acquisition or resettlement.	ESMP (Appendix D)
When involuntary land acquisition for a sub-project affects less than 200 people, less than 10% of households' productive assets are affected and/or does not involve physical relocation.	An abbreviated LARAP (Appendix M)
When involuntary land acquisition for a sub-project affects more than 200 people, affects more than 10% of households' productive assets and/or involves physical relocation.	A full LARAP (Appendix L)
When a sub-project leads to involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of displaced persons.	An abbreviated or full LARAP, depending on the scale.

5.2.2.5 Sub Project Indigenous Peoples Instruments

92. Where Indigenous Peoples are present in the project area, or have a collective attachment to the project area, an Indigenous Peoples Plan, or a broader Community Development Plan,

based on a Social Assessment in the ESIA (Appendix K), will be prepared. Refer to the IPPF for detailed planning and implementation requirements.

Table 6 Summary Table of Sub Project Instruments

Type of Document	**For All Exploration Projects**	**Exploration Projects where there is involuntary land acquisition or involuntary resettlement**	**Exploration Projects where there are Indigenous People in the Project Area**
ESIA, Includes screening of exploitation phase impacts.	√		√ (include a Social Assessment)
ESMP May include specific subplans such as PCR Management Plan, Biodiversity Management Plan, Labour Influx Management Plan	√		
UKL/UPL	√		
Records of voluntary land transactions (willing buyer willing seller)	√		
Abbreviated LARAP, or Full LARAP, depending on scale		√	
Indigenous People's Plan			√

5.2.3 Preparing Safeguards Instruments or Gap Filling

93. Terms of Reference (TOR) for safeguards instruments (for scenario i) and any gap filling tasks for scenario ii and iii will be prepared by sub borrower and reviewed by PT SMI before the work is tendered to competent and qualified environmental and social consultants. Consultants with

experience in Indonesian regulatory processes and World Bank safeguard policies will be engaged.

94. The scope of the ESIA, ESMP, UKL/UPL, LARAP and/ or IPP will be commensurate to the nature and scale of potential impacts.

95. Consultation and disclosure will be carried out as per Section 8.The sub-borrower will lead consultation with support from the consultants.

5.3 Step 2 – Screening, Review and Clearance of Safeguards Instruments and Funding Approval (PT SMI)

96. Screening, review and clearance will be done by PT SMI as part of the sub-project application review process. The processes in Appendix A and B will be used to guide the review process.

97. Review of sub-borrower's EHS capacity as part of eligibility assessment.

98. PT SMI will review the safeguards instruments as a desk top exercise and will visit the proposed site as part of a due diligence assessment of each funding application. This will include visiting areas of environmental or social significance, consultations, meeting with key stakeholders and informants, and for sub-projects under scenario iii where works have already started, to carry out an environmental and social audit of the existing work and the implementation arrangements.

99. The outputs of the safeguards review and due diligence shall contribute to the sub-project application review. In consultation with World Bank, PT SMI will either:

    (a) Provide clearance of the instruments without any changes

    (b) Provide feedback highlighting gaps and additional studies to be completed before the instrument will be reconsidered for clearance.

    (c) Provide recommendations that a sub-project will not proceed to development under GREM if a 'show stopper' is identified that would lead to a significant non-compliance with laws, policies or other significant issues that cannot be mitigated. An example would be where a sub-project would potentially have irreversible impacts on critical habitats. Significant potential impacts for the exploitation of the geothermal resource may also be considered a 'show stopper'.

    (d) Provide recommendation of EHS capacity of the sub-project.

5.3.1 Risk Category of Sub-Project

100. Sub-project will be classified into one of three categories (A, B and C), depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts.

101. **Category A:** When the sub-project is likely to have significant adverse environmental impacts that are sensitive, diverse or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. Examples are: exploration activities within conservation areas which may result in significant impacts on a population of endangered species or on a critical habitat; exploration activities that may improve access for induced development that will cause harm to Indigenous Peoples. All Category A sub-projects are required to have an ESIA and EMP.

102. **Category B:** When the sub-project's adverse environmental impacts on human populations or environmentally important areas (including wetlands, forests, grasslands, and other natural habitats) are less adverse than those of Category A sub-projects. Impacts would be site – specific; For example, if few of the impacts, if any, would be irreversible and mitigation measures can be designed more readily than for Category A sub-projects. The scope of environmental assessment for a Category B sub-project will vary based on the outcomes of the screening process. All Category B sub-projects will also require an ESIA and EMP. The scope of the ESIA will be based on the potential risks, address the sub-project's potential negative and positive environmental impacts, and recommend measures to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance.

103. **Category C:** If the sub-project is likely to have minimal or no adverse environmental impacts. Beyond screening, no further environmental assessment action is required for a Category C sub-project. It is expected that there will be no Category C sub-projects under the GREM.

5.3.2 Review Report

104. The review report will be prepared by PT SMI and include:

(a) Completed Screening Forms (Appendix A)

(b) World Bank safeguard policies and PT SMI ESS elements triggered.

(c) Risk Categorization of Sub-project

(d) Summary of significant environmental and social risks, the nature and scale of impact assessment and/or mitigation measures identified by the sub-borrower

(e) List of required changes, updates, additional studies, gaps to be filled in existing instruments and details of any additional safeguards instruments

(f) Requirements for any additional consultations and / or disclosure of information and instruments.

(g) Note any issues such as timeframes or budgets that may affect geothermal project feasibility or the development plan.

(h) Review of capacity of the sub-borrower to implement the safeguards instruments and their safeguards responsibilities for the duration of the GREM project, and requirements for gap filling (staff, equipment, training, resources etc.).

(i) The recommendations will be formalised between the sub-borrower and PT SMI in the funding agreement or other contractual documentation.

105. PT SMI will clear the instruments once all conditions and requirements are met by the sub-borrower. If significant risks remain that cannot be satisfactorily mitigated to meet World Bank safeguards policies and / or GoI laws, regulations and international commitments, the subproject will not be funded. PT SMI and sub borrower could choose to redesign the subproject and / or improve the avoidance, mitigation and management of significant potential impacts and resubmit a revised set of safeguards documents for review.

5.4 Step 3: Permit Clearances and Approvals

106. The UKL/UPL will be submitted for approval by the relevant Provincial or District Environment Agency; the UKL/UPL approval will be used as the basis to apply for the Environmental Permit. The final ESIA, ESMP, LARAP and IPP will be subject to review and endorsement by PT SMI. In Indonesia "*Dokumen Persiapan dan Pengadaan Tanah*" (based on UU No.2/2012) will be approved by the Governor and/or Head of the City/District where the project locates. Based on this approval, the location permit will be issued. LARAP can be prepared based on this documentation.

107. Other permits will also be applied for during this Phase by the sub-borrower, such as the Utilization Permit (Exploration Stage) for Geothermal Environmental Services (IPJLPB *Tahap Eksplorasi*) if the project area is located within a National Park, Grand Forest Park or Natural Recreation Park or Borrow Use Permit (*Izin Pinjam Pakai Kawasan Hutan*/IPPKH) of the project area is located within suspended area (*Peta Indikatif Penundaan Pemberian Izin Baru*/PIPPIB).

108. No work is to begin on site until:

(a) all sub-project safeguard instruments have been consulted and disclosed by the sub-borrower and cleared by the World Bank and PT SMI.

(b) the UKL/UPL documents have been cleared and the relevant regulatory approvals have been awarded.

(c) all resettlement is completed and compensation has been paid. Any new issue related to land acquisition and resettlement during the implementation should be addressed through grievance mechanism.

(d) the Contractor's Environmental and Social Management Plan has been cleared by PT SMI and the World Bank.

5.5 Step 4: Implementation and Monitoring

109. Sub borrower will prepare detailed implementation processes in the Project Operations Manual. In brief, implementation will occur as follows:

(a) The sub borrower's exploration team will integrate safeguards aspects into geothermal exploration plans (location of infrastructure, construction methods, mitigation measures relating to design etc.).

(b) The ESMP should include measures that have been identified as Good International Industry Practices such as:

- Emergency Response Plan - Geothermal well blowouts and spills from waste sumps are likely scenarios in geothermal drilling/development;
- Monitoring and alarm system for hydrogen sulfide;
- Periodic monitoring of surface water quality, and groundwater quality when reinjection is applied;
- Others as required.

(c) The sub borrower's exploration team will include the ESMP in the Contractor's bid documents and the Contractor's contract. Contractor's selection process will include the capacity to implement ESMP, and UKL/UPL.

(d) The Contractor will be required to prepare a Contractor's ESMP before work begins. The Contractor's ESMP will document, in detail, how the Contractor will fulfill its roles and responsibilities as documented in the Project ESMP.

(e) No work will begin on site (including ancillary works such as access roads) until land acquisition and resettlement has been completed and the Contractor's ESMP has been cleared by PT SMI Safeguards Team (to the satisfaction of the World Bank).

(f) The sub borrower's safeguards team will monitor and supervise the Contractor's ESMP implementation and be responsible for implementing other aspects of the project ESMP not under the Contractor's control.

(g) The sub borrower will be responsible for leasing, purchasing land through 'willing buyer/willing seller' or implementing LARAP for involuntary land acquisition/resettlement, including providing entitlements and other support to the affected and displaced persons.

(h) Training will be carried out by sub borrower and/or a third party consultant, where necessary, in accordance with the capacity building plans in the ESMP.

(i) Supervision, monitoring and reporting will be carried out by the Sub-borrower of the Contractor as per Section 10 and the detailed requirements of the ESMP.

(j) PT SMI will be responsible for periodic supervision of the sub-borrower for compliance with safeguards instruments.

5.6 Technical Advisory

110. PT SMI will ensure that the Terms of Reference for Technical Advisory under Component 2 of GREM require:

(a) Safeguards specialists to be part of the team, where necessary;

(b) Advice and outputs to comply with the ESMF, RPF and IPPF;

(c) Advice and outputs to be consistent with World Bank Safeguards Policies, PT SMI ESMS and policies on Gender and Disclosure;

(d) Broad consultation with relevant stakeholders, and the public where necessary; and

(e) Disclosure of technical documents / outputs.

111. PT SMI Safeguards Team will review any relevant technical advisory outputs and provide comment and input to ensure consistency with GREM framework documents.

6 RESETTLEMENT POLICY FRAMEWORK

6.1 Key Principles

112. Under the GREM, this Resettlement Policy Framework (RPF) provides guidance on resettlement screening, assessment, institutional arrangements, and processes regarding land acquisition and involuntary resettlement to be complied with by project management staff, consultants, and related parties.

113. The World Bank recognizes that land acquisition and land use restrictions induced by the project can have adverse impacts on land users and communities. The World Bank OP 4.12 on Involuntary Resettlement sets the standards on addressing and mitigating risks resulting from involuntary resettlement, including any case of involuntary land taking. Here "involuntary resettlement" refers both to physical displacement (relocation or loss of shelter) and economic displacement (loss of assets or access to assets that leads to loss of income sources or other means of livelihood) as a result of the project activities. This includes the involuntary restriction to access to legally designated parks and protected areas. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in physical or economic displacement. This occurs in cases of: (i) lawful expropriation, or temporary or permanent restrictions on land use, and (ii) negotiated settlements in which the buyer can resort to expropriation or impose legal restrictions on land use if negotiations with the seller failed.

114. **Willing seller willing buyer.** The majority (if not all) acquisition of the land for drilling activities is expected to use *willing seller-willing buyer*[19] approach. The RPF provides guidance for the acquisition of land through willing seller willing buyer or mutual agreement as the preferable mode of acquisition.

115. **Involuntary Land Acquisition and Resettlement.** Involuntary land acquisition is unlikely as the footprint of the infrastructure is flexible. There may be instances, such as access roads for large drilling equipment, where flexibility of alignment is not possible, and specific land is required. Should it be identified that specific land is necessary for the project (for example for aggregate material sourcing) or the options for land are limited because of topography or other constraints, and negotiated settlement is not successful, the requirements of involuntary land acquisition under this Resettlement Policy Framework (RPF) will be implemented.

116. Involuntary resettlement will also be avoided as a priority, but there may be cases, such as in protected areas and forests, where people's access is restricted or their livelihoods affected. In

[19] That is, market transactions in which the seller is not obliged to sell and the buyer cannot resort to expropriation or other compulsory procedures if negotiations fail

these cases the RPF requirements will also apply. The RPF specifies the preparation of Land Acquisition and Resettlement Action Plan (LARAP) for involuntary land acquisition or resettlement. Under this situation involuntary resettlement includes land acquisition implemented under the eminent domain principle that could involve physical and economic displacement. In all other cases of any adverse economic, social, or environmental impacts from project activities other than for land acquisition (e.g., loss of access to assets or resources or restrictions on land use), such impacts will be avoided, minimized, mitigated or compensated for through the process of social assessment as part of the environmental and social impact assessment. Sub borrowers will refer to the requirements of the World Bank OP 4.12 on Involuntary Resettlement to avoid, remedy or mitigate the impacts as part of this process.

117. The overall objectives of the Bank's policy on involuntary resettlement are the following:

(a) Involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs;

(b) Where it is not feasible to avoid resettlement, resettlement activities should be designed and executed as part of a sustainable development program, e.g., providing sufficient resources to enable the persons displaced by the project to share in project benefits. Persons displaced by the project should be meaningfully consulted and be given the opportunity to participate in the planning and implementation of resettlement programs; and

(c) Displaced persons should receive assistance in their efforts to improve their livelihoods and living standards, or at least to restore them, in real terms, to pre-displacement levels, or to levels prevailing prior to the project commencement, whichever is higher.

118. Prior to implementation of land acquisition and resettlement activities, Sub-borrowers will ensure the following approaches and methodology of social assessment as required by OP4.12 requirements:

(a) Avoid involuntary resettlement and, if unavoidable, minimize its potential impacts;
(b) Assess the potential economic and social impacts of involuntary land acquisition and resettlement on PAP and their livelihoods;
(c) Identify categories of affected persons and their respective entitlements;
(d) Set out clear process of consultation with and participation of Project Affected People in the preparation and planning of involuntary land acquisition and resettlement, if any, as well as information dissemination to the Project Affected People;
(e) Compensate for lost assets at full replacement cost;

(f) Compensate informal/illegal land users for lost assets and provide assistance in relocating, if needed;

(g) Compensate and obtain legal access to expropriated land before starting construction;

(h) Provide information and prepare special assistance programs for vulnerable groups including the persons without any immovable property; and

(i) Provide and prepare plans for grievance redress and monitoring in line with the RPF.

6.2 Indonesian Laws and Policies Relating to Land Acquisition

119. Geothermal exploration is important for energy infrastructure development, and under the country system it is categorized as public interest development. In case of land acquisition for infrastructure development for public purposes, any sub-project should refer to Law 2 of 2012 on Land Acquisition for Project Activity for Public Interest. The following are its implementing regulations: Presidential Decree No. 71 of 2012, Head of National Land Bureau Regulation No. 5 of 2012, Minister of Finance Regulation No. 13 / PMK.02 of 2013, and Ministerial of Home Affairs Regulation No. 72 of 2012.

120. The Presidential Decree No. 71 of 2012 has been amended four times. The key changes are: No. 40 of 2014 (…Land acquisition no more than 5 hectare can be directly conducted by the agency needing land with holders of land right through a business transaction or other way agreed by both parties…); No. 99 of 2014 (…Head of Land Acquisition Implementation issues compensation value resulted from appraiser or public appraiser); No. 30 of 2015 (…Finance for land acquisition can be sourced from a company (Badan Usaha) as Agency acquiring the land has been given the right to act on behalf of the state, ministerial, non-ministerial government agency, or provincial or district government; and the most updated one, No. 148 of 2015 (…Land acquisition for public interest development purpose up to 5 hectares does not need location determination letter. Agency needing land to use appraiser for land valuation…).

121. Minister of Finance Regulation No. 13/PMK.02 of 2013 has been also amended by No. 10 / PMK02 of 2016, which indicates a threshold budget allocation for land acquisition for public-interest development projects. Minister of Home Affairs Regulation No. 72 of 2012 indicated operational and supporting land acquisition implementation for public interest development source from a regional budget.

122. Head of National Land Bureau (BPN) Regulation No. 5 of 2012 has been amended by No. 6 of 2015, which highlights a bailout scheme to accelerate infrastructure development. The government revised the Ministerial of Agrarian and Spatial Planning (ATR) Regulation No.6 of 2015 for the Amendment Regulation of the National Land Bureau (BPN) No. 5 of 2012 on Technical Guidelines for the Implementation of Land Acquisition. This revision opens up the

opportunity for private entrepreneurs to bailout[20] *(dana talangan)* land acquisition fund for public-interest infrastructure projects. Then bailout is replaced using state budget funds through the relevant ministries or agencies.

123. Land acquisition for public interest development shall be performed in accordance with the Regional Spatial Plan; the National/Regional Development Plan; the Strategic Plan; and the Working Plan of the Agency needing land. However, as indicated in Elucidation of Article 7 (2) of Law 2 of 2012, geothermal energy activities are to a degree flexible, uncertain and changeable. Because of this, flexible planning is required in order to ensure the effectiveness and efficiency of the development of geothermal energy resources.

124. Law 2 of 2012 has significantly improved the country system for land acquisition with greater protection for the rights of property owners through consultation and fair compensation. It also deals with compensation for non-titled property if land acquisition is required. If the land is publically owned, the law do not apply and the required land would be cleared according to Law No. 5 of 1960, in which its Article 18 states that the rights on land may be expropriated by the government for public-interest activities by providing reasonable compensation in accordance to procedures stipulated in the Law. The Law also stipulates that public entities, including state-owned companies, are eligible to acquire land under this mechanism[21]. Similarly, private companies can also acquire land by establishing public private partnerships with state-owned enterprises and eligible government agencies.

125. Law 2 of 2012 and its supporting regulations stipulate that valuation of compensation should be done by "…Independent and Professionals Appraisers, who have a license from the Ministry of Finance as Public Appraiser and registered in National Land Bureau (BPN)". The Indonesian Society of Appraisers (MAPPI) issued the Valuation Standard 306, Valuation in the Context of Land Acquisition for Development for Public Interest, to guide and support the implementation of Law 2 of 2012. The Standard follows the same principles as the Law, where determination of the compensation amount is based on the "principles of humanity, fairness, usefulness, certainty, transparency, agreement, participation, welfare, harmony and sustainability." Fair Replacement Value is the based on the market value of the property, with attention to non-physical elements associated with loss of property ownership, caused by the land acquisition. The definition of Fair Replacement Value follows the same principles as that for compensation as cited earlier.

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[20] Private bails advance funds for land acquisition. This approach will benefit toll roads development and helps Toll Road Regulatory Agency (BPJT) can quickly build toll road. However, Minister Public Works and Housing (PUPR) also requires to prepare technical regulations of the private use of the bailout fund.

[21] Beside the Law 2 of 2012 and its implementing regulations, there are other regulations related to the land acquisition and resettlement for public interest, such as the Presidential Degree No. 40 of 2016 concerning the Acceleration of the Development of Electricity Infrastructure that has significant aspects in reducing the time of land acquisition process and determining the location.

126. Valuation consists of physical and non-physical components. Physical components that will be compensated include: a) land; b) space above- and under-ground; and c) buildings; and d) amenities and facilities supporting the building. Non-physical components to be compensated for includes:

- Disposal rights of landowners, to be given as a premium in monetary terms under existing legislations. The substitutions may include matters relating to: a) loss of employment or loss of business, including change of the profession (with respect to Law No. 2 of 2012 Article 33 letter f of the Elucidation); b) emotional loss associated with loss of shelter as a result of land acquisition (with due regard to the Act No. 2 in 2012 Article 1 Paragraph 10, Article 2 the elucidation and Article 9, paragraph 2).
- Cost of transaction, such as moving expenses and corresponding taxes.
- Compensation for waiting period, that is, payment to account for the time difference between the valuation date and the estimated payment date.
- Loss of value of the remaining land, which can be calculated over the entire land value if it can no longer be used as intended.
- Physical damage and repair costs to building and structure atop the land, if any, as a result of land acquisition.

127. If the sub-borrower is private sector, the process of the land acquisition should follow the relevant national regulations as well as principle of the World Bank's environmental and social performance standards that regulates in this ESMF to mitigate adverse social and economic impacts due to land acquisition and the transaction should conduct with good faith negotiation if the process of land acquisition or lease through voluntary acquisition.

6.3 World Bank Safeguard Policy OP4.12 Involuntary Resettlement

128. This policy aims to avoid involuntary resettlement where possible. However, it sets out – where necessary – requirements for participation in resettlement planning, as well as compensation provision that improves, or at least restores, incomes and living standards. The Bank's experience with geothermal projects in Indonesia with regard to involuntary resettlement indicates that land is acquired through commercial transactions rather than expropriation, and involuntary resettlement does not occur. However, this RPF establishes the principles and procedures for land acquisition and resettlement in case there are instances when PT SMI must invoke involuntary acquisition or resettlement.

129. The World Bank OP 4.12 does not apply to resettlement resulting from voluntary land transactions (i.e., market transactions in which the seller is not obliged to sell and the buyer cannot resort to expropriation or other compulsory procedures sanctioned by the legal system of the host country if negotiations fail). It also does not apply to impacts on livelihoods where the project is not changing the land use of the affected groups or communities.

6.4 Responsibilities of Land Acquisition and Resettlement

130. If subproject is undertaken by SoEs, the responsibility of the land acquisition should come from the sub borrower (SoEs) by following the Law 2 of 2012. In case the land will be acquired less than 5 hectares,the land acquisition can be done directly by the SoEs that require the land with the holders of land right, by way of sell or purchase or exchange or other ways agreed by both parties.

131. If the sub borrower is private sector land acquisition implementation will follow relevant national policies and regulations and will follow the international standard principles that set out in this ESMF. Subproject could be in the form of Public Private Partnership (being discussed for establishment). With this arrangement, Public Private Partnership stakeholders will conduct further discussion to define the parties who will be responsible for land acquisition and resettlement.

6.5 Gap Analysis

132. Section 3.4of the ESMF presents the comparison of key features between the GOI's Laws and Regulations pertaining Land Acquisition and Resettlement including specific requirements for IP, and how they are addressed in the RPF.

6.6 Process for Preparing and Approving Land Acquisition and Resettlement Action Plan

133. Depending on the ESIA results, LARAP will be prepared when there will be involuntary acquisition of land and/or resettlement and/or restriction of access to resources. Sub borrowers will prepare a LARAP in compliance with the Bank OP 4.12 and the country system[22]. Implementation of the LARAP requires the Bank's prior approval. The following sub-chapters detail the required elements to prepare a LARAP. A template for Abbreviated LARAP is in Appendix M and for a full LARAP in Appendix L.

6.6.1 Required Information for the Involuntary Acquisition

134. Sub borrower will first provide documentation regarding land acquisition needs (including the lands that will be needed for the project in future).The information will cover what land will be needed, where, and what the existing land ownership and land uses are. PTSMI's social specialist will review the documents and determine remedies if there are any circumstances that would jeopardize compliance with OP 4.12. If so, additional information and an appropriate course of action may be required by the Safeguards Team.

[22] In accordance to the country safeguard system, in this stage, PT SMI shall make a Plan of Land Acquisition in the Public Interest in accordance with the laws and regulations. The Plan shall refer to the Regional Planning, Spatial Planning and the development priority as stated in the Medium – Term Development Plan, Strategic Plan, and the Working Plan of the relevant Agencies.

135. The sub borrower will then use the enclosed reporting formats (Abbreviated LARAP in Appendix M or the full LARAP in **Error! Unknown switch argument.**) to cover the following issues:

(a) Assessment of the temporary and permanent impacts of land acquisition or expropriation, and categories of persons/households affected, number of lands/plots affected, percentage of land/plots affected in any landholding, land use before and after acquisition, prior land use and number of owners.

(b) Documentation of the socioeconomic situations of affected households, such as income stream and percentage of income derived from the acquired land in line with the WB safeguard policy requirements. The aim is to understand the adverse impacts on livelihoods of displaced persons and provide restoration measures to compensate for their income losses.

(c) Compensation standards applied for temporary and permanent loss of land, loss of crops, loss of productive trees, loss of residence and businesses (documenting the value equivalent to full replacement cost),

(d) Result of court decisions, if any,

(e) Provision for replacement land, if relevant, and

(f) Provision of documentation for vulnerable groups, grievance redress and monitoring.

136. Under Indonesian Law No 2/12, *Land Acquisition Plan in the Public Interest Document* prepared in the form of a land acquisition planning document must entail: (a) objectives of the development plan; (b) consistency with the Regional Spatial Planning and the National/Regional Development Plan; (c) land location; (d) land size needed; (e) description of the land (legal and physical) status; (f) estimated period of land acquisition; (g) estimated period of construction implementation; (h) estimated land value; (i) budget plan; and (j) that the Plan shall be made under a feasibility study prepared in accordance with the laws and regulations.

6.6.2 Required Information for the Acquisition of Public Land

137. OP4.12 also applies where public land (land owned by GOI or local government) is purchased, transferred, leased or used informally/temporarily by Sub borrowers. This also includes easements. While the land transaction may be 'voluntary' by the Government agency, there may be third parties who use the land (tenants, informal land users, squatters etc.) that will be subject to involuntary resettlement.

138. In this case, sub borrowers will submit a Social Impact Screening Summary to PT SMI. The sub borrower will document the transfer mechanism, the amount of land, whether it is in use and for what purpose(s), and the number, name, gender and status of land-users (e.g., tenants, informal users).

139. For each sub-project that requires involuntary resettlement of third parties from public land, sub borrowers will prepare a LARAP, and submit to PT SMI for approval before implementation

of land acquisition and resettlement. LARAPs will include a detailed description of resettlement planning and implementation in compliance with the World Bank OP 4.12. The scope and level of details of the LARAP will vary with the magnitude and complexity of the land acquisition and compensation issues. The Plan will indicate the number and ownerships of parcels to be acquired or subject to lease or easement, the number of parcels affected, estimated cost of the land and other assets to be acquired or subject to the acquisition, responsibility for execution and schedule for acquisition. The World Bank and PT SMI will review and ensure conformance of the land acquisition and resettlement process to OP4.12.

140. Once the LARAP is cleared by PT SMI and the World Bank, it will be disclosed locally at the subproject site and on the PTSMI's and sub borrowers' websites.

141. The sub borrowers will be responsible for implementation of the LARAP, including all support and entitlements to be paid.

142. PT SMI and the World Bank will supervise implementation and ensure that all activities are fully consistent with the LARAP and provide adequate monitoring and reporting. As part of LARAP implementation, sub borrower will provide a quarterly report of land acquisition activities to the World Bank and PT SMI, as part of the overall project progress report. The report will indicate the number and ownership of parcels affected and their current status, progress of negotiations and appeals, and the price offered and finally paid (reported as number of square meters of the original whole plot and the size of the specific area acquired, and amount per square meter). At the end of the project and as part of project completion report, sub borrower will provide the PT SMI and the World Bank with a completion report.

143. PT SMI and the World Bank supervise LARAP implementation to ensure compliance with OP 4.12. If necessary, it may contact affected parties to confirm the validity and determine whether or not the process and outcomes have complied with OP/BP 4.12. .

144. The sub borrowers under Public/SOE window should proceed to the establishment of land acquisition team under the Governor's instruction in the below steps:

(a) Notice of the development plan;
(b) Identification of the development plan;
(c) Undertaking public consultation concerning the development plan;
(d) Announcement of the 'location determination' (*Penetapan Lokasi Pembangunan);*
(e) Disclosure of the Determination of Location (to be printed and placed at the Kelurahan Office), and announcing it in local paper/electronic media.

145. For land acquisition using willing-seller and willing-buyer approach, sub borrower will document the land acquisition preparation and implementation that will include, at least: list of

affected land owners and size of land acquired, procedure for determining the assets value, minutes of consultation and negotiation and amount/level of compensation offered to the affected land owners.

6.6.3 Cut-off Date & Eligibility Criteria for Affected Persons

146. For the purposes of this framework, eligibility for a Project Affected Person will include:

(a) any person or household adversely affected by acquisition of assets or change in use of land due to exploration activities;

(b) any vulnerable and affected person including women, destitute, artisans, tribal communities, squatters,

(c) those with usufruct rights, poverty groups depending for livelihood upon the land to be acquired by the project; and

(d) any other person who may prove and establish his/her right as an affected person to the satisfaction of the sub borrowers.

147. The cut-off date for eligibility for compensation and/or resettlement assistance is the last day during the census/inventory of assets. The affected people / communities will be informed of the cut-off date through the responsible agencies, community elders and leaders. Individuals or groups that are not present at the time of registration but who have a legitimate claim to membership in the affected community can be accommodated.

148. Under the country system, the cut-off date is determined during the implementation stage after verification of eligibility has been conducted (See Section 6.7). The provincial-level Land Office (BPN) will be responsible for the implementation stage activities, which it has the authority to delegate to the district level[23]. Prior to the cut-off date, the Land Office will conduct these steps:

(a) Developing the implementation team, including at the local level;

(b) Inventory, identification and disclosure of result;

(c) Filing the objection and verification.

6.6.4 Proof of Eligibility

149. The sub borrowers which are responsible for land acquisition will consider various forms of evidence as proof of eligibility for affect people as stated in the RPF, for example, *formal legal rights*, such as land title registration certificates, leasehold indentures, tenancy agreements, rent receipts, building and planning permits, business operating licenses, and utility bills; or in

[23] Head of Land Office Decree 2 of 2013 concerned about the Delegation of Authority for Land Rights and Land Registration Activities

lieu of formal documentation, an *affidavit* signed by land owners and tenants witnessed by the administrative authority. Criteria for establishing claims to eligibility without any documentation will be determined on a case-by-case basis.

150. Only project affected persons enumerated during the census/inventory of assets shall be eligible for compensation or supplemental assistance. Any new structures or additions to existing structures carried out after the cut-off date will not be considered affected, and their owners or occupants will not be able to claim compensation or supplemental assistance for these, unless they can demonstrate that the census/inventory of assets has failed to identify them as affected.

6.6.5 Entitlement Policy

151. The World Bank safeguard policy requires that compensation be paid at replacement value in addition to transitional assistance. Land is replaced with that of equal value and amenities. Livelihood assets are replaced with those of equal value. Benefit sharing is assured through additional support mechanisms where possible.

152. Project Affected People will be entitled to value compensation, rehabilitation, and resettlement support as follows:

Table 7 RPF Entitlement Matrix

Type of Loss	**Category of Project Affected Person**	**Compensation Entitlements**
Permanent agricultural land loss	Owner: Person / group with legal title/registration of land ownership (including customary and traditional rights under Indonesian law)	Full replacement cost and relocation allowance.
	Tenant	Cash compensation for above ground assets and relocation allowance or other options agreed by both parties. Owner/tenant agreements apply.
	Encroachers/informal or unofficial land users	Cash compensation for above ground assets and relocation allowance or other options agreed by both parties.
Permanent residential land loss	Owner: Person / group with legal title/registration of land ownership (including customary and traditional rights under Indonesian law)	Full replacement cost and relocation allowance
	Tenant	Relocation allowance
	Encroachers/informal or unofficial land users	Relocation allowance
Permanent commercial land loss	Owner: Person / group with legal title/registration of land ownership (including customary and traditional rights under Indonesian law)	Full replacement cost and relocation allowance and compensation for temporary income loss
	Tenant	Relocation allowance, compensation for

Type of Loss	Category of Project Affected Person	Compensation Entitlements
	Encroachers/informal or unofficial land users	temporary income loss
Temporary land loss	Owner: Person / group with legal title/registration of land ownership (including customary and traditional rights under Indonesian law)	Cash compensation for rent, or, plot rehabilitation equivalent to 1/10th of market land value or other options agreed by both parties.
	Tenant Encroachers/informal or unofficial land users	Cash compensation lump sum equivalent to 1/10th of market land value, shared between land users as per proportions or other options agreed by both parties.
Residential building loss	Owner: Person / group with legal title/registration of ownership	Cash compensation for residential building atreplacement value based on market price free of depreciation/transaction costs and salvaged materialsplus relocation allowance or other options agreed by both parties. Partial impacts will entail the compensation of theaffected portion of the building plus repairs to return toat least pre-project standard.
	Tenants / squatters in residential buildings who are identified in census.	Relocation and severe impact allowance as below.
Commercial and non-residential buildings/ asset loss	Owner of commercial or non-residential buildings/assets with registration or who is identified in census	Cash compensation for non-residential building and other fixed assets at replacement value based on market price free of depreciation/transaction costs and salvaged materials plus relocation allowance or other options agreed by both parties. Partial impacts will entail the compensation of the affected portion of the building plus repairs.
	Tenants/squatters in commercial or non-residential buildings/assets who are identified in census	Relocation and severe impact allowance as below.
Crop losses	Owner of crops	Advance notice to harvest last crop Cash compensation to equal amount of market value of crop lost plus cost of replacement of seed based on Agriculture Department estimate or other options agreed by both parties.
Tree losses	Owner of tree	Advance notice to harvest tree products. Salvage material free of cost. Cash compensation to equal amount of market value of tree lost plus cost of replacement of seed based on Agriculture Department estimate taking into account type, age and productive value or other options agreed by both parties.
Income losses	All project affected people, all income (employment, business)	For a permanent impact, cash compensation of one year net business income or salary. For a temporary impact, cash compensation

Type of Loss	Category of Project Affected Person	Compensation Entitlements
		of net income or salary for the number of months of business or employment stoppage for a period of up to 1 year. Assessment to be based on paper evidence or oral testimony and Village Head confirmation. At least government decreed minimum salary will be provided or other options agreed by both parties.
Community structures or public infrastructure losses (including religious and public service structures)	The public via leadership of the relevant authority	Reconstruction of lost structure in consultation with community. They will be fully replaced or rehabilitated so as to satisfy their pre-project functions taking into account any recognised new needs that could increase use or service levels.
Allowance for severe impacts Rehabilitation assistance for PAPs with more than 10 percent of land holding affected or to be relocated	All severely affected PAPs including informal settlers and relocated tenants	For severe land impacts, an additional allowance equal to the market value of the land for one year. For those being relocated, a rehabilitation allowance of equal to six months of average annual salary or other options agreed by both parties.
Allowance for relocation (transport and transition costs)	All Project Affected People	Provision of funds to cover transport costs and livelihood expenses for 1 month of average annual salary or other options agreed by both parties.
Allowance for especially vulnerable people	Especially vulnerable' include households headed by a single parent, woman or widow; include a pregnant woman or woman with a newly born child; have more than six dependent children; and have a family member who has a disability, long term illness (including mental illness), or who has mobility challenges.	Allowance equivalent to 6 months of average annual salary and employment priority for a household family member in project-related jobs or other options agreed by both parties.
Unforeseen impacts		Will be documented and mitigated or compensated in the LARAP, based on the principles in this RPF.

6.7 Negotiated Land Settlement/ Voluntary Transaction

153. Negotiated land acquisition (willing-seller-willing-buyer), or voluntary transaction, will be the preferred method for acquiring land. The location of the drilling sites, and supporting infrastructure such as access roads, are flexible to a point, therefore, there can be some negotiations as to which site is selected based on land-owners' willingness to sell or lease land.

154. The sub borrowers will apply the following principles for negotiated land acquisition / voluntary transaction for exploration drilling stage:

- *Meaningful consultations* with Project Affected People, including those without legal title to land and assets;

- *Offer offair price* for land and other assets at replacement cost. Deduction of income tax for land transaction will be openly communicated with and agreed by the Project Affected People;

- *Transparency in negotiation free of pressure and coercion* with Project Affected People to reduce risks of asymmetry of information and bargaining power of the parties. An independent external party will be engaged to document and validate the negotiation and settlement process. Verification (for example, notarized or witnessed statements) of the voluntary nature of land donations must be obtained from each person selling or leasing land;

- Documentation of the process.

155. Under the country system, acquisition on behalf of GOI entity for land of up to 5 ha can be done through the willing seller-willing buyer mechanism. Indonesian Civil Laws (*Kitab Undang-undang Hukum Perdata*) Chapter 1458 on Selling and Buying spells out the principles and outlines buyer and seller obligations and responsibilities. Under this Law, the mechanism has an obligatory character, where the rights attached to the land or assets sold are not automatically transferred to the buyer. Unlike land transaction conducted under a customary law *(hukum adat)*, such transactions still require transfer of the land ownership right. Land registration is a precondition for land transfer under a negotiated land acquisition or willing buyer-willing seller mechanism.

156. The Head of the National Land Bureau's National Regulation No. 5/2012 specifies procedures for land registration. It outlines requirements for the land registration and acquisition process, and prescribes: (i) steps for scaling and mapping the land coordinates and accepted survey procedures, (ii) regulations pertaining to valuation in the land markets, (iii) necessary documentation, (iv) official publication of claim and title, (v) objection mechanism, (vi) title verification procedures, and (vii) issuance of land certificates.

157. However, valuation of the affected assets under the scope of GREM would follow the procedures as prescribed by Law 2 of 2012 and supporting regulations, under which valuation of compensation should be done by "…Independent and Professionals Appraisers who have license from Ministry of Finance as Public Appraiser and registered in National Land Bureau (BPN)". The Indonesian Society of Appraisers (MAPPI) issued the Valuation Standard (SPI) 306, Valuation in the Context of Land Acquisition for Development for Public Interest, to support the implementation of Law 2 of 2012. Valuation Standard 306 shares the same principles as the Law, which bases the determination of compensation amount on the principles of "humanity, fairness, usefulness, certainty, transparency, agreement, participation, welfare, harmony and sustainability."

158. The Fair Replacement Value is the value of the ownership, which equals the market value of a property, with attention to elements such as non-physical losses of ownership resulting from land acquisition. The Fair Replacement Value definition is same as definition for compensation in the Law 2 of 2012.

159. The Scope of Valuation consists of physical and non-physical components. Physical components that will be compensated for include: a) land; b) space above- and under-ground; c) buildings; and d) amenities and facilities supporting the building. Non-physical components to be compensated for include:

- *Disposal rights* of land-owners, to be given as a premium in monetary terms under existing legislations. The substitutions may include matters relating to: a) loss of employment or loss of business, including change of the profession (with respect to Law No. 2 of 2012 Article 33 letter f of the Elucidation); b) emotional loss associated with loss of shelter as a result of land acquisition (with due regard to the Act No. 2 in 2012 Article 1 Paragraph 10, Article 2 the elucidation and Article 9, paragraph 2).
- Cost of transaction, such as moving expenses and corresponding taxes.
- Compensation for waiting period, that is, payment to account for the time difference between the valuation date and the estimated payment date.
- Loss of value of the remaining land, which can be calculated over the entire land value if it can no longer be used as intended.
- Physical damage and repair costs to building and structure atop the land, if any, as a result of land acquisition.

6.8 Independent Verification

160. PT SMI will engage an independent monitoring agency to monitor a sample of land acquisition for compliance with the ESMF and RPF. The agency will audit the documentation and interview land owners and affected land / resource users to verify both the process and the outcomes. Any discrepancies or non-compliances will be brought to the attention of PT SMI and will be recorded as a grievance in the GRM for resolution through that process. PT SMI will include procedures for the independent monitoring and verification, and the resolution process,

161. When a subproject leads to involuntary restriction of access to the legally designated parks and protected areas resulting in adverse impacts from the livelihood of the displaced persons, a plan for action as a result of process framework(under Abbreviated LARAP) will be developed by sub borrowers.

7 INDIGENOUS PEOPLES PLANNING FRAMEWORK (IPPF)

7.1 Objectives and Principles

162. This IPPF will be applied when Indigenous Peoples (IPs) are present in a sub-project's area of influence as identified during the social and environmental screening process or subsequently during the ESIA. The sub borrowers are responsible for planning and implementing the necessary actions to meet the requirements outlined by this framework.

163. There is no universally accepted definition of Indigenous Peoples. Indigenous Peoples may be referred to indifferent countries by such terms as: indigenous ethnic minorities, aboriginals, hill tribes, minority nationalities, scheduled tribes, first nations, or tribal groups (known in Indonesia as *Masyarakat Adat* (Isolated Indigenous Community) or *Masyarakat Hukum Adat* (Customary Law Community).

164. The Government Indonesia defines indigenous as *Masyarakat Hukum Adat* (customary law community). Minister of Home Affairs Regulation no. 52/2014 on Guidelines for the Recognition and Protection of Indigenous Peoples Defines MHA as Indigenous Peoples Community is an Indonesian citizen who possesses distinctive characteristics, harmoniously living in accordance with their customary law, having a bond to the ancestral origins and or similarities of residence, there is a strong relationship with the land and the environment, and the value system that determines the economic, political, social, cultural, legal and utilization of one particular area from generation to generation.

165. The terms "indigenous and tribal peoples", "ethnic minorities" and "tribal groups", describe social groups with different social and cultural identities of the dominant public society that make them vulnerable to disadvantages in the development process. For this purpose, "indigenous and tribal peoples" is the term to be used to refer to these groups.

166. Indigenous and tribal peoples are usually the poorest segment of the population. According to the World Bank's policy, the term "Indigenous Peoples" is used in a generic sense to refer to different groups, vulnerable, social and cultural characteristics in varying degrees as follows:

(a) Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
(b) Collective attachment to geographically distinct habitats or ancestral territories in the project area and/or to the natural resources in these habitats and territories;
(c) Customary cultural, economic, social, or political institutions that are separate from those of the dominant society or culture;
(d) An indigenous language, often different from the official language of the country or region.

167. For the purposes of this Framework, the definition of indigenous and tribal peoples will follow both World Bank criteria and national regulations.

7.2 Indonesian Laws and Regulations relating to Indigenous Peoples Safeguards

168. When IPs are present and affected by the project, the project should provide benefit to and need to manage adverse impacts on the IPs[24]. Indonesia's national policies on Indigenous Peoples includes: (1) Presidential Decree (*Keppres*) No. 111/1999 concerning Development of Isolated Indigenous Community (KAT), which provides a broad definition of Indigenous Peoples and the need for government assistance; and (2) Law No. 41/1999 concerning Forestry Law which defines customary forest[25].

169. Other laws and regulations related to IPs are: UUD 1945 (Amendment) Chapter 18 Clause #2 and Chapter 281 Clause #3. The existence of *adat* communities is recognized in the Constitution Article 18 and its Explanatory Memorandum. It states that in regulating a self-governing region and *adat* communities, the government needs to respect the ancestral rights of those territories. After amendments, recognition of the existence of *adat* communities was provided in Article 18 B Para. 2 (concerning "*adat* law community" and regional government) and Article 28 I Para. 3 ("traditional community" and Human Rights).

170. Act No. 5 of 1960 concerning Basic Regulations on Agrarian Principles (or Basic Agrarian Law / BAL). Article 2 Para. 4, Article 3, and Article 5 provide general principles that accommodate recognition of *adat* communities, *ulayat* land rights, and *adat* laws. In later developments, BAL recognition of *adat* law is tied to "national interest".

171. Forestry Acts (Act No. 5 of 1967 and Act No. 41 of 1999). The Act divides forest area into two categories: state forest and proprietary forest. State forest is forest growing on land not covered by proprietary rights. The state forest category also covers *ulayat*, or adat forest. Proprietary forest is forest growing on land covered by proprietary rights. By including *ulayat* forest as state forest, the Act ignores *ulayat* rights of *adat* communities over their forest area.

172. The Constitutional Court Decision No. 35/PUU-X/2012 resolved a major ambiguity in Article 1 of the Forestry Act No. 41 of 1999 and formally recognized that customary forests are state forests located in the areas of customary communities. Article 5 of the same Law was revised to

[24]Identification of IPs follows the Bank's criteria. Identification of IPs will also meet the criteria of "*Masyarakat Hukum Adat*"- MHA- summarized from Indonesian Regulations and local values, as well as additional information gathered from respective citations.

[25] One fundamental change is related to Indigenous Peoples is the issuance of Constitutional Court Decision No. 35/PUU-X/2012 which changed Article 1 point 6 of Law No. 41/1999 on Forestry, which has now become "customary forest is a forest located within the area of an indigenous community". Before, there was a word of "state" in the article. With elimination of the word "state" from the definition, now it is understood that customary forests is now no longer a state forest.

mandate that state forest category does not cover customary forest. The ruling was made in favour of a petition filed by Indonesia's National Indigenous Peoples Alliance, or Aliansi Masyarakat Adat Nusantara (AMAN) in March 2012.[26]

173. Ministerial of Home Affairs (MOHA) Regulation No. 52 of 2014 on Guidelines for the Recognition and Protection of Indigenous Peoples can be used as a reference for local governments regarding customary communities. The Regent/Mayor may form a committee on Indigenous Peoples in the regencies/cities, which serves to identify, verify and validate Indigenous Peoples. Results of the verification and validation, then submitted to the head region. The Regent/Mayor can issue decision on the recognition and protection of Indigenous Peoples based on the committee's recommendations.

174. Ministerial of Forestry Regulation (MoF) No. P.62/Menhut-II/2013 (adjustment of Ministerial of Forestry Regulation No. P.44/2012) on the Establishment of Forest Area. This MoF regulation was criticized by AMAN for equating forest area with state forest, which they perceived to be against of the Constitutional Court Decision No. 35/PUU-X/2012.

175. Joint Regulation of Ministerial of Home Affairs (MOHA), Ministerial of Forest, Ministerial of Public Works and National Land Bureau No. 79/2014; No: PB.3/Menhut-11/2014; No: 17/PRT/m/2014: No: 8/SKB/X/2014 on Procedures to Settle Land Ownership Conflict in Forest Area. This regulation recognized that there are other rights such as customary rights over forest land.

176. Ministerial Regulation of the Land Agency and Spatial Development No. 9/2015 on the Procedures to Establish the Land Communal Rights on the MHA Land and Community Living in the Special Area. This regulates communal rights of not only the *Customary Law Community*, but also other groups of people residing and depending in the same land area. *Customary Law Community* is a community bound by customary law, both genealogically (common ancestor) and territorially (similar residence). These Communities have a socio-cultural bond with the land and its resources for a long time. Whereas "people in certain areas" are people who control the land for at least 10 years, who depend on forestry products and natural resources, and whose existing socio-economic activities are closely linked to the area. Communal rights addressed in Regulation No. 9/2015 are controversial, because they not distinguish the source of legitimacy for communal land rights between that based on membership to the *Customary Law Community* versus the land use and ownership of the area by other people not belonging

[26] In 1999, a national congress of Indonesian indigenous peoples took place, attended by over 200 *adat* community representatives from 121 indigenous peoples. The Congress agreed to establish a national alliance of indigenous peoples, AMAN. By 2001, AMAN had 24 affiliated organizations in islands and provinces. It has several objectives, including the restoration of sovereignty to *adat* communities over their socioeconomic laws and cultural life, and control over their lands and natural resources and other livelihoods.

to the Community for an extended period of time. Consequently, the Regulation has raised legal issues, namely competing claims between these two groups.

177. Law No. 6/2014 recognizing the existence of the Customary Village (*Desa Adat*). The local government is empowered to evaluate the boundary of a *Customary Law Community*'s area and designate a Customary Village through local regulation. Three criteria must be met: 1) the traditional customs and rights of the Customary Law Community are being practiced and maintained by members of the group, 2) the preservation of a Customary Village with all their traditional customs and rights is in accordance with the development of society, and 3) the purpose is in line with the principles of the Unitary Republic of Indonesia.

7.3 World Bank Policy OP4.10 Indigenous Peoples

178. The World Bank's OP 4.10 Indigenous Peoples recognizes that Indigenous Peoples may be exposed to different types of risks and impacts from development sub-project. The policy requires that sub-project identify whether Indigenous Peoples are affected by the sub-project, and accordingly, to undertake specific consultation activities, and avoid or mitigate impacts on these potentially vulnerable groups and also culturally appropriate interventions in benefit sharing. Site visits to confirm IPs presence will be done in accordance with the requirements specified in this IPPF.

7.4 Framework Social Assessment

179. A high level of social assessment is included in Appendix K.

7.5 General Requirements

7.5.1 Avoidance of Adverse Impacts

180. The sub borrowers will identify, through the social and environmental screening and ESIA, communities of Indigenous Peoples that may be present in the subproject's area of influence, as well as the nature and degree of the expected social impacts, impacts on physical cultural resources, environmental impacts as well as potential benefits to the Indigenous Peoples. The sub borrowers shall avoid adverse impacts whenever feasible.

181. When avoidance is not feasible, the sub borrowers will minimize, mitigate or compensate for these impacts in a culturally appropriate manner. The proposed actions will be developed with the informed participation of affected Indigenous Peoples and included in a time-bound Indigenous Peoples Plan (IPP), or a broader community development plan, depending on the nature and scale of impacts.

182. When the subproject is considered high impact due to other potential risk such as conflict around natural resources, the sub borrowers should obtain broad community support for the subproject before beginning of the subproject.

7.5.2 Information Disclosure, Consultation and Informed Participation

183. Sub borrowers shall establish an ongoing relationship with the affected IPs communities as early as possible in the sub-project planning and throughout the life of the sub-project. They will recruit specialist consultants to assist them, particularly to design and implement an appropriate consultation approach. In sub-projects with IPs communities in the project area, the consultation process will ensure their free, prior, and informed consultation (FPIC) and facilitate their informed participation on matters that affect them, such as proposed impact mitigation measures, sharing of development benefits and opportunities, and implementation issues. The process of community engagement will need to be culturally appropriate and correspond with the potential risks and impacts to the Indigenous Peoples. In particular, the process will include the following steps:

(a) Involve Indigenous Peoples representative bodies (for example, councils of elders or village councils, among others);

(b) Be inclusive of both women and men and of various age groups in culturally appropriate manner;

(c) Provide sufficient time for IPs' collective decision-making process;

(d) Facilitate the IPs' expression of their views, concerns, and proposals in the language of their choice, without external manipulation, interference, or coercion, and without intimidation;

(e) Ensure that the grievance mechanism established for the project is culturally appropriate and accessible for IPs communities; and

(f) Ensure that the IPP is available to the affected IPs communities in an appropriate form, manner and language.

184. The aim is to achieve broad community support for the subproject. This determination generally is based upon collective and often informal expression of supportive views regarding subproject purposes, plans, and implementation arrangements. This determination does not require unanimity; broad community support may exist even when there is internal disagreement within the community or when there is limited opposition to subproject purposes or proposed arrangements. The IPP will explain the basis upon which the determination has been made.

7.5.3 Development Benefits

185. Through the FPIC process and informed participation of the affected IPs communities, Sub borrowers shall identify opportunities for culturally appropriate development benefits. Such opportunities should be commensurate with the degree of project impacts, aimed at improving their living standards and livelihoods in a culturally appropriate manner, and to fostering the long-term sustainability of the natural resources on which they depend. The sub borrowers will document development benefits and provide them in a timely and equitable manner in the Indigenous Peoples Plan.

7.5.4 Sub-Projects Social Assessment

186. The social assessment for sub-projects will include the following elements (as relevant):

(a) description of the subproject and potential issues or impacts relating to communities (and identifying where some communities or subgroups may be affected differently);

(b) identification of relevant communities and other key stakeholders to be consulted;

(c) baseline information on the demographic, social, cultural, economic and political characteristics of relevant communities;

(d) assessment of the potential adverse impacts and benefits likely to be associated with the project based on consultation; and

(e) summary of preferences and concerns of communities relating to project objectives, access and cultural appropriateness of project benefits, mitigation of any adverse impacts, project implementation arrangements, and recommendations for action planning.

7.5.5 Indigenous Peoples Plan

187. Where Indigenous Peoples are identified in the project area through the screening process, an Indigenous Peoples Plan (IPP) will be prepared by sub borrowers. The Plan will be informed by a Social Assessment, prepared during the ESIA, and the consultation processes discussed above. The Plan will set out the measures through which sub borrowers will ensure that a) (a) Indigenous Peoples affected by the project receive culturally appropriate social and economic benefits; and (b) if potential adverse effects on Indigenous Peoples are identified, those adverse effects will be avoided, minimised, mitigated or compensated. The IPP will be integrated into project design. Contents of an IPP are included in Appendix J.

188. The plan will focus on the exploration phase. Post project activities will be discussed and agreed by all parties before the end of the project and the IPP will be updated at this time to cover potential long term impacts from the exploitation phase.

7.6 Special Requirements

189. Because Indigenous Peoples may be particularly vulnerable to the sub-project circumstances, appropriate requirements will be required as described below. When any of these special cases apply, sub-borrowers will engage qualified external experts to assist in conducting the Social Assessment and ensuring their adequate inclusion in the IPP or Community Development Plan.

7.6.1 Impacts on Traditional or Customary Land underuse

190. Indigenous Peoples are often tied to their customary land, as well as the natural and cultural resources on the land. While the land may not be under 'legal' ownership pursuant to national laws, the use of the land, including seasonal or cyclical uses, by the IPs communities for their

livelihoods, or cultural, ceremonial, or spiritual purposes that define their identity and community, can be substantiated and need to be duly documented.

191. If the subproject location is decided to be on traditional or customary land, and adverse impacts are expected on the livelihoods, or cultural, ceremonial, or spiritual uses that define the identity and community of the Indigenous Peoples, sub borrowers will work with the respected stakeholders that will lease or own the land to ensure that the process of land acquisition is respectful of their use of the land. They will do this by taking the following steps:

(a) Sub borrowers documents efforts to avoid or at least minimize the proposed subproject footprint;

(b) Experts will be engaged to document land uses in collaboration with the affected Indigenous Peoples communities without prejudicing their land claim;

(c) The affected Indigenous Peoples communities are informed of their rights with respect to their land under national laws, particularly those recognizing customary rights or use;

(d) The sub borrowers will offer the affected Indigenous Peoples communities fair compensation and due process similar to those with full legal land title, as well as culturally appropriate development opportunities (such as benefit-sharing mechanisms); and/or land-based and/or in-kind compensation in lieu of cash compensation where feasible;

(e) The sub borrowers enter into good faith negotiation with the affected Indigenous Peoples communities, and documents their informed participation and outcomes of the negotiation.

7.6.2 Relocation of Indigenous Peoples from Traditional or Customary Lands

192. Sub-borrowers shall consider alternative subproject designs to avoid relocation of Indigenous Peoples from their communally held traditional or customary land. If such relocation is unavoidable, sub-borrowers will not proceed with the sub-projects, unless there has been good faith negotiation with the affected Indigenous Peoples communities, and sub borrowers documents their informed participation and a successful outcome from the negotiation. Any relocation of Indigenous Peoples will need to be consistent with the World Bank safeguard policy OP. 4.12 Involuntary Resettlement and will be implemented by sub borrowers as the agent that will own or lease the land. Where feasible, there located Indigenous Peoples should be able to return to their traditional or customary land, should the reason for their relocation cease to exist.

7.6.3 Cultural Resources

193. Where a subproject proposes to use the cultural resources, knowledge, or practices of Indigenous Peoples for commercial purposes, sub borrowers shall inform them of: (i) their rights under national laws; (ii) the scope and nature of the proposed commercial development; and (iii) the potential consequences of such development. Sub borrowers shall not proceed with such commercialization unless it: (i) enters into a good faith negotiation with the affected

Indigenous People communities; (ii) documents their informed participation and a successful outcome from the negotiation; and (iii) provides for fair and equitable sharing of benefits from commercialization of such knowledge or practice consistent with their customs and traditions. However, this is an unlikely outcome of the GREM.

8 CONSULTATION AND DISCLOSURE

8.1 Safeguard Framework Consultation

194. The first stakeholder consultation has been conducted on April 12th, 2018 in Jakarta. The main purposes of the consultation were to seek inputs on the GREM project, and the draft ESMF, RPF and IPPF from stakeholders. Key stakeholder institutions, such as Ministry of Finance, Ministry of Energy and Mineral Resources, local governments, NGOs, private sector, the academia, the media/press were invited to participate in the consultation workshop.

195. Discussions focused on the ease of use and implementation of the ESMF, adequacy of safeguard mitigation mechanisms, and training needs for stakeholders. Following the consultations, stakeholders' inputs were recorded in Appendix N and have been considered for the finalization of the ESMF, RPF and IPPF.

196. Consultation on the GREM and the framework documents will not be carried out with any host communities, local Governments, or other local stakeholders because the sub-project sites where the exploration drilling will occur have not yet been identified. At the earliest stages of drilling site identification, consultations will begin.

8.2 Practice Guidance on Technical Advisory Consultation

197. Consultants will be engaged to prepare industry good practice guidance, which shall entail a stakeholder engagement process. The consultants will engage with key stakeholders throughout the process to gather and share information. Key stakeholder institutions include Ministry of Finance, Ministry of Energy and Mineral Resources (EBTKE), Ministry of Environment and Forestry, Badan Geologi, NGOs, private sectors, SoEs, development partners and universities. The draft guidance documentation will be shared with representatives of the institutions, and disclosed on PT SMI's website for comments from the broader public. Workshops will be held to discuss key issues and assist with finalization of the documents.

8.3 Stakeholder Engagement and Consultation on Geothermal Sub-Project

198. The sub borrowers' safeguard team shall lead the preparation of ESIA, ESMP, LARAP and IPP. In drafting the TOR for these works, it will provide detailed stakeholder consultation activities to be carried out by the consultant(s). Sub borrowers' safeguard team will lead public consultation(s) with support from the consultant and local government. This will ensure that sub borrowers have the necessary technical information and support to carry out consultations, as well as local buy-in and support for the plans, which are prepared to mitigate project impacts.

8.3.1 Stakeholder Identification

199. The sub borrowers shall prepare a Stakeholder Engagement Plan as part of the ESIA, and continue to implement the Plan throughout the sub-project. The safeguards consultants will be

required to undertake a stakeholder analysis before the consultation process. Stakeholders will vary depending on the subproject location, but are expected to include: host communities, land owners and users, environmental and social NGOs, local government agencies, forestry concession holders/owners, forest departments, conservation departments, universities and other research organizations and business owners. A stakeholder analysis shall: a) identify the individuals and groups with interest in the subproject and those expected to be affected by the subproject, b) identify experts and key informants, c) determine the nature and scope of consultation with each type of stakeholder, and d) determine the appropriate communication tools, timeframes, and methods.

8.3.2 Consultation Principles

200. The principles for consultation are:

(a) Providing clear, factual and accurate information in a transparent manner on an on-going basis to community stakeholders through free, prior and informed consultation;

(b) Providing information in a timely manner, in a way that can be easily understood by the audience. Some translation of technical language into everyday language may be necessary. Materials should be in Bahasa Indonesia and local dialects / languages as appropriate;

(c) Listening and learning about local and social culture and wisdom;

(d) Providing opportunities for community stakeholders to raise issues, make suggestions and voice their concerns and expectations with regard to the Project;

(e) Engaging with women, men, elderly, youth and vulnerable community members, as well as those in positions of authority and power;

(f) Providing stakeholders with feedback on how their contributions have been considered in the development of relevant assessments and plans;

(g) Building capacity among community stakeholders to interpret the information provided to them;

(h) Treating all community stakeholders with respect, and ensuring that all project personnel and contractors in contact with community stakeholders do the same;

(i) Responding to issues and requests for permission; and

(j) Building constructive relationships with identified influential community stakeholders through appropriate levels of contact.

201. There should be at least two consultation rounds[27]: once during ESIA preparation and baseline data collection, and another during presentation of the draft ESIA and EMP. The first consultation should take place around the drafting of and as inputs to the TORs of the ESIA to screen and scope out issues. This is a minimum requirement, and the Stakeholder Engagement

[27]A 'round' being a series of consultation meetings and information sharing with the stakeholders.

Plan should tailor consultation activities to the needs of the stakeholders. More consultation may be required if there are Indigenous Peoples in the project area, vulnerable people among the host community, sensitive environmental receptors and significant impacts that require early and ongoing communications with stakeholders. Specific consultation with people affected by involuntary land acquisition and resettlement, and with Indigenous Peoples communities, shall be planned in addition to general project consultations. In between consultation rounds there can be information updates and other project communications to keep stakeholders informed.

202. Sub borrower will prepare a detailed Stakeholder Engagement Plan, including consultation planning, specific to each subproject. It will include methods and procedures for the following:

- Stakeholder analysis – who will be consulted, how, when, by whom, how often, which language to use;
- How women and vulnerable community members will be consulted;
- Roles and responsibilities for coordinating, undertaking and following up on consultation feedback, safeguards consultants, and local government);
- Key messages;
- Timeframes / programme;
- Public communications (see below) including how the public can get in touch with the exploration team and how to use the GRM process;
- Disclosure plan – what will be disclosed, when, and how;
- How feedback will be managed;
- List of materials and tools that will be used.

8.4 Public Consultation Tools

203. Communication during subproject development will involve seeking and imparting information, and reaching agreements through dialogue. The following table summarizes some of the most commonly used techniques for conveying information to the public and their respective advantages and disadvantages. Sub borrower may use any of these techniques in developing the Consultation Plan.

Table 8 Techniques for conveying information to the public

Printed materials	Information bulletins, brochures, reports: Text should be simple and non-technical and relevant to the reader Provide clear instructions on how to obtain more information	Direct Can impart detailed information Cost-effective Yields a permanent record of communication	Demands specialized skills and resources Not effective for illiterate stakeholders	During ESIA preparation phase

Displays and exhibits	Can serve both to inform and to collect comments Should be located where the target audience gathers or passes regularly	May reach previously unknown parties Minimal demands the public	Costs of preparation and staffing Insufficient without supporting techniques	During ESIA preparation phase
Print media	Newspapers, press releases, and press conferences can all disseminate a large amount and wide variety of information Identify newspapers likely to be interested in the project and to reach the target audience	Offers both national and local coverage Can reach most literate adults Can provide detailed information	Loss of control of presentation Media relationships are demanding Excludes illiterates and the poor	During ESIA preparation phase
Electronic Media	Radio, internet, social media, and video: Determine the coverage (social media, internet, or radio), the types of viewer; the perceived objectivity, and the type of broadcast offered. Determine how to disseminate the social media hashtag / web address etc. to the audience.	May be considered authoritative Many people have access to radio and cell phones Social media is cheap	Disadvantages those without cell phones / internet access	During ESIA preparation phase
Advertising	Useful for announcing public meetings or other activities Effectiveness depends on good preparation and targeting	Retain control of presentation	May engender suspicion	During ESIA preparation phase
Formal information sessions	*Targeted briefing:* Can be arranged by project sponsor or by request, for a particular community group, NGO etc.	Useful for groups with specific concerns Allow detailed discussion of specific issues	May raise unrealistic expectations	At the latest 2 weeks before ESIA preparation phase for project plan

				dissemination; During ESIA preparation phase for potential impact discussion
Informal information sessions	*Open House, Site Visits, and Field Offices*: A selected audience can obtain first-hand information or interact with project staff. Visits should be supported with more detailed written material or additional briefings or consultations.	Provide detailed information Useful for comparing alternatives Immediate and direct Useful when the project is complex Local concerns are communicated to staff May help reach non-resident stakeholders	Attendance is difficult to predict, resulting in limited consensus-building value May demand considerable planning Field offices can be costly to operate Only reach a small group of people	At the latest 2 weeks before ESIA preparation phase for project plan dissemination; During ESIA preparation phase for potential impact discussion

Source: World Bank Environmental Assessment Sourcebook, Number 26

Table 9 Techniques for listening to the public

Survey techniques	Interviews, formal surveys, polls and questionnaires can rapidly show who is interested and why May be structured (using a fixed questionnaire) or non-structured Experienced interviewers or surveyors familiar with the project should be used Pre-test the questions Open-ended questions are best	Shows how groups want to be involved Allows direct communication with the public Helps access the views of the majority Less vulnerable to the influence of vocal groups Identifies concerns linked to social grouping Statistically representative results Can reach people who are not in organized groups	Poor interviewing is counter-productive High cost Requires specialists to deliver and analyse Trade-off between openness and statistical validity	During ESIA preparation phase

Small Meetings	Public seminars, or focus groups create formal information exchanges between the sponsor and the public; may consist of randomly selected individuals or target group members; experts may be invited to serve as a resource.	Allows detailed and focused discussion Can exchange information and debate Rapid, low-cost monitor of public mood A way to reach marginal groups	Complex to organize and run Can be diverted by special interest groups Not objective or statistically valid May be unduly influenced by moderators	At the latest 2 weeks before ESIA preparation phase for project plan dissemination; During ESIA preparation phase for potential impact discussion
Large Meetings	Public meetings allow the public to respond directly to formal presentations by project sponsors. Effective meetings need a strong chairman, a clear agenda, and good presenters or resource people.	Useful for medium-sized audiences Allow immediate response and feedback Acquaint different interest groups	Not suitable for detailed discussions Not good for building consensus Can be diverted by special interest groups Attendance is difficult to predict	At the latest 2 weeks before ESIA preparation phase for project plan dissemination; During ESIA preparation phase for potential impact discussion
Community organizers/ advocates	These work closely with a selected group to facilitate informal contacts, visit homes or work places, or simply be available to the public.	Mobilize difficult-to-reach groups.	Potential conflicts between employers and clients Time needed to get feedback	At the latest 2 weeks before ESIA preparation phase for project plan dissemination; During ESIA preparation phase for potential impact discussion

Source: World Bank Environmental Assessment Sourcebook, Number 26

8.5 Disclosure

204. The first draft ESMF GREM, incorporating the RPF and IPPF, had been disclosed on the PT SMI website, www.ptsmi.co.id, and on the World Bank website, www.worldbank.org, in late February 2018 prior to public consultation. This final version of the documentation will be disclosed on both websites.

205. All sub-project safeguards instruments shall be disclosed by the sub-borrowers.

9 INSTITUTIONAL ARRANGEMENTS AND CAPACITY BUILDING

206. The successful implementation of the ESMF, RPF and IPPF depends on project stakeholders. This chapter provides an overview of the GREM's institutional arrangements, and the responsibilities of each stakeholder for operationalizing the safeguards instruments. It also provides an analysis of the PT SMI's capacity as the Financial Intermediary with key safeguard responsibilities and a plan for capacity building.

9.1 Institutional Roles and Responsibilities

207. As the overall project implementation is a business-to-business process between sub borrowers and PT SMI, sub borrowers will be responsible to obtain and manage permitting and all technical components and implement the drilling and well testing activities. PT SMI will manage the GREM fund, and conduct due diligence and/or monitor sub-project implementation. PT SMI could hire consultants to support environmental and social due diligence and/or audit if necessary. PT SMI will be assuming the overall responsibility for the ESMF compliance.

9.2 Safeguards Roles and Responsibilities

208. PT SMI will be responsible for screening and reviewing the implementation of safeguards by the sub-project in each subproject. The team responsible is the PT SMI Safeguards Team. The capacity and responsibilities of the team are provided in Section 9.3.

209. The implementation of safeguards relating to sub project activities will be undertaken by the **Safeguards Team** of sub borrower. The sub borrower's Safeguards Team will be responsible for planning and implementing the ESMP, IPP and LARAP, and supervise the Contractor's ESMP implementation. The sub borrower's Safeguards Team will be responsible for managing land acquisition, community liaison, complaints and grievance redress and environmental and social monitoring. Overall, it is PT SMI's responsibility to review, clear, monitor and advise on implementation.

210. PT SMI will not own or lease any land, or be responsible for land transactions, paying entitlements, support and other compensation under the LARAP. Sub borrower will undertake this responsibility, while PT SMI will review and give necessary concerns.

Table 10 Safeguards Roles and Responsibilities

Institution / Team	Roles and Responsibilities
PT SMI Management	Provide sufficient resources (staff and budget) for Environmental Social and Advisory Evaluation Division staff and consultants to undertake their roles and responsibilities.
Sub borrower	Prepare safeguards instruments and fill gaps as directed by PT SMI to meet the requirements of the ESMF, RPF and IPPF. Engagement of staff with safeguards supervision expertise to ensure adequate supervision and full compliance with all safeguards documents. This includes field-based safeguards specialists overseeing the drilling and civil works contractors. Implement all aspects of the ESMP, UKL/UPL IPP and LARAP. In particular stakeholder engagement, grievance redress, Contractor supervision, land acquisition and resettlement activities, environmental and social monitoring, incident management and safeguards reporting. Ensure that qualified engineers design and provide specifications for storage ponds, and that pond construction, management and decommissioning is supervised and monitored. Integration of ESMP, UKL/UPL, LARAP and IPP into subproject design, specifications, tender documents, contract documents for contractors. Provide sufficient budget and timeframes for safeguards supervision and implementation during exploration activities. Investigate incidents and complaints as well as resolve issues. Ensure the Stakeholder Engagement Plan conducted and use of public consultation tools with local government and residents living around the geothermal field location so that all information will be passed through and to minimize the potential of resident's rejection towards the GREM sub-projects. Ensure that stakeholders concerns are addressed in the layout of infrastructure and the drilling operations.
PT SMI's Environmental Social and Advisory Evaluation Division	Manage safeguards via a management plan, keeping track of resources, tasks, timeframes etc. for each sub-project. Prepare TOR, estimate budgets and manage the procurement of safeguards consultants to support PT SMI Safeguards Team. Review the sub borrower's safeguard instruments and provide comments and recommendations for gap filling. Undertake field visits and conduct due diligence. Clear safeguards instruments for disclosure and approval processes.

Institution / Team	Roles and Responsibilities
	Review subproject consultation process and/or result from sub borrower. Supervise each subproject ESMP, LARAP, IPP and UPL-UKL implementation. Review TOR of TA under Component 2 for inclusion of safeguards aspects. Review TA outputs as required. Review project implementation and monitoring report related to implementation of ESMP, IPP and LARAP documents. Implement the GREM grievance redress mechanism. This responsibility includes supervising the implementation of the sub-project grievance redress mechanism and reporting into the PT SMI Corporate GRM system. Monitor incident investigation, complaints and non-conformances. Provide safeguards input and recommendations to sub borrower. The team must be willing to present information to the wider team that may conflict with the technical and economic assessment of feasibility, in order to prevent potentially significant impacts from geothermal development. Provide or organize training to sub borrower and stakeholders, if necessary, on the implementation of safeguards instruments and the PT SMI safeguards management system. Quarterly safeguards reporting to World Bank and other stakeholders. Maintain and update GREM framework documents as required.
Sub borrower's Field Safeguards Team	Supervision of Contractors' ESMP, HSMP, compliance management, non-conformance management, and issuance of penalties on a day-to-day basis, with reports to the PT SMI Safeguards Team. Provide training to Contractors as required on technical matters of environmental and social impact mitigation (e.g. sediment and erosion control). Provide technical training to Contractors on GRM, complaints management, community engagement and other aspects of environmental and social impact mitigation where necessary, or recruit consultants to perform training. Manage local stakeholder engagement and community liaison and respond to complaints and grievances. Environmental and social monitoring.
Sub-Project contractors (civil and drilling)	Full compliance with the ESMP and UPL / UKL throughout the contract. Provision of Safeguards Managers and Officers on site throughout the Contract.

Institution / Team	Roles and Responsibilities
	Prepare a comprehensive Contractors ESMP and HSMP before works begin. Implement the Contractors ESMP and HSMP throughout the Contract, including community engagement, avoidance and management of impacts, monitoring, GRM, incident management, training and other tasks. Construct, maintain and decommission ponds in accordance with designs and specifications provided by qualified and experienced engineers. Comply with the laws of Indonesia and obtain any permits as necessary (hazardous waste, blasting and explosives, etc.). Provide reports to the sub borrower's Safeguards Team. Undergo training as required. Ensure all staff are suitably trained and have suitable protective equipment at all times.

9.3 PT SMI Environmental and Social Management System

211. PT SMI has extensive experience in managing World Bank's and other donors'safeguards policies under the Investment Guarantee Fund (IGF), Indonesia Infrastructure Facility Fund (IIFF), the Regional Infrastructure Development Fund (RIDF), and the Geothermal Energy Upstream Development Project (GEUDP). PT SMI is an infrastructure financing company established in 2009 as a state-owned enterprise (SOE) wholly owned by the GoI through the Ministry of Finance (MOF). PT SMI plays active role in facilitating infrastructure financing, as well as preparing projects and serving in an advisory role for infrastructure projects in Indonesia. PT SMI supports the government's infrastructure development agenda through public-private partnerships with private and multilateral financial institutions. As such, PT SMI serves as a catalyst in accelerating infrastructure development in Indonesia.

212. PT SMI has developed a specific Operations Manual and Environmental and Social Management System (ESMS) for use on its programs supporting local government investments through various infrastructure funds. PT. SMI's Environmental and Social Management System (ESMS) is based on the country system (i.e. Indonesian regulations), and heavily weighted to environmental management (with gaps in terms of social impact management, land acquisition, and health and safety). However, it is currently being updated to comply with IFC Performance Standards, World Bank Safeguards Policies and other development partners' safeguards policies.

213. The ESMS has processes to screen proposed subprojects, determine environmental and social risk level, and carry out due diligence assessment, all of which will determine the gaps of meeting the requirements specified in the ESMS. Sub borrowers seeking financing via a PT SMI-

administered fund is required to prepare a corrective action plan (CAP) to address the gaps identified in the due diligence assessment and meet the requirements specified in the ESMS.

214. The ESMS is overseen by Environmental Social and Advisory Evaluation Division of PT SMI. The team is headed by an experienced team leader. Currently, PT SMI has four environmental (including 1 team leader and three staffs) and two social safeguards specialists.

215. PT SMI also has ready access to environmental and social consultants through the Project Advisory Division if ad hoc support is required.

216. The Environmental Social and Advisory Evaluation Division will oversee the implementation of the ESMF, RPF and IPPF, with necessary support from at least one dedicated staff/consultant.

9.4 Capacity Building

217. Capacity needs assessment is on going. A final capacity building plan will be included in the final ESMF. Awareness raising will be done for the Environmental Social and Advisory Evaluation Division of PT SMI. The team will receive basic training in environmental and social impacts and management of impacts for geothermal exploration projects. This is so they can perform their oversight role for GREM more effectively. This will be provided by a third party, or by dedicated Environmental or Social Specialists.

218. The Environmental Social and Advisory Evaluation Division PT SMI, with the support of the World Bank, will provide awareness raising on ESMF, RPF, IPPF and PT SMI ESMS for the project. This will occur at the launch workshop and on an ad hoc basis as required through the project.

219. Other safeguards training is also planned as follows:

Capacity Building	**Audience / Participants**	**Trainer**	**Program**
How to review geothermal exploration ESIA, ESMP UKL/UPL, IPP and LARAP On the job training and mentoring, ad hoc workshops	Environmental Social and Advisory Evaluation Division of PT SMI	World Bank Safeguards Specialists	Throughout GREM
Awareness raising to sub-borrowers	Sub-borrowers (public and private)	PT SMI	Throughout GREM

220. The Environmental Social and Advisory Evaluation Division of PT SMI will maintain records of the training programs, including details such as agenda, duration, trainers and trainers' qualifications for conducting training, and participants' attendance sheet. PT SMI Environmental Social and Advisory Evaluation Division will maintain an annual plan for training.

10 BUDGET

Table 11GREM Safeguards Budget Estimate

Task	**Cost Estimate $US**	**Notes**
Recruitment of consultants	$300,000 per year	
Institutional arrangement	$150,000 per year	
Independent monitoring of land transactions	$350,000	Assumption for 20 sub-projects
Independent environmental and social review (mid-term review)	$40,000	
Internal ESMF, RPF and IPPF workshops for GREM Team (x4)	$50,000	
Sub-borrowers workshops	$50,000	

11 MONITORING AND REPORTING

221. PT SMI's Environmental Social and Advisory Evaluation Division shall be responsible for the monitoring and reporting on the efficacy of the environmental and social safeguards implementation. It will be part of an overall project monitoring and reporting system outlined in the GREM Project Implementation Manual.

222. For PT SMI, safeguards monitoring will include:

(a) PT SMI's Environmental Social and Advisory Evaluation Division will undertake periodic monitoring of the implementation of the framework documents as part of collecting and analyzing data and information for quarterly project reporting. This includes analyzing the effectiveness of screening and other tools in the frameworks, type and number of training events and people trained, GRM and complaints management, management of quality and timeliness of deliverables from consultants, availability of resources (staff, budget) to undertake framework responsibilities, compliance/non-compliance with frameworks, World Bank safeguard policies and Indonesian laws and regulations.

(b) PT SMI's Environmental Social and Advisory Evaluation Division will engage an independent monitoring agency to review and audit the implementation of LARAP – the involuntary land acquisition, resettlement and livelihood restoration processes of the sub borrowers.

(c) PT SMI's Environmental Social and Advisory Evaluation Division could engage an independent consulting firm to carry out an environmental and social monitoring of the subprojects. This will be done once prior to the mid-term review of GREM. The scope of monitoring will include a review of the design and implementation effectiveness of the GREM frameworks. This would review the structure of the frameworks, content and coverage of potential activities, impacts and mitigation measures, interpretation of the frameworks into the Project Operations Manual and other project management tools. Interviews and observations on the efficacy of organizational structures, training, and the capacity and ability of team members to undertake their responsibilities. Site visits to subprojects will also be carried out to review the effectiveness of environmental and social mitigation measures outlined in safeguards documents.

223. For sub borrowers, safeguards monitoring will include:

(a) Sub borrower should set up subproject specific monitoring program that will document social and environmental impact monitoring and the monitoring of the efficacy of the ESMP, Contractor's ESMP and supervision tasks. This information will contribute to the framework monitoring and reporting. LARAP and IPP will also contain specific monitoring programs for impact monitoring and auditing of procedures for compensation, livelihood restoration and any other community development programs.

224. A matrix of reporting is provided below:

Table 12 Matrix of Safeguards Reporting

Report Type and Content	**Program**	**Responsibility:**	**Reporting to:**
ESMF, RPF and IPPF review reports (as part of funding application review) *Sub project activities and progress (safeguard instrument preparation, implementation, closure)* *Monitoring outputs* *Complaints/GRM summary* *Incident reports* *Training and capacity building activities*	Bi-annualy Bi-annually	PT SMI Sub borrower	World Bank SMI
Drilling Safeguards Supervision Reporting *Project progress* *Monitoring outputs* *Training* *Complaints / GRM Summary* *Incidents*[28] *Framework updates*	Monthly	Sub borrower's SMT Safeguards Team	PT SMI's GREM Safeguard Team
Sub-project ESMP UKL/UPL Environmental and Social Monitoring Report	Quarterly	Sub borrower's SMT Safeguards Team	PT SMI's Safeguard Team
Sub-project LARAP Independent Monitoring Report	Quarterly	Sub borrower's Consultant	PT SMI's Safeguards Team

[28]Incident reporting will be determined between sub borrower's SMT, sub borrower's Contractor and PT SMI's Safeguards Team. Very high risk incidents are reported immediately and low risk incidents a reported monthly.

12 GRIEVANCE REDRESS MECHANISM

12.1 Introduction

225. As part of its mandate to become a future national infrastructure development bank, PT SMI promotes transparency and accountability for sustainable infrastructure development in the country, not only from the environmental and social safeguards perspectives but also from the technical, financial, economic and political viewpoints. In this light, PT SMI is open to constructive inputs and aspirations from the public and stakeholders of the GREM project. As part of the efforts to achieve these objectives, PT SMI has a Grievance Redress Mechanism (GRM) to serve as an effective tool for early identification, assessment, and resolution of complaints on GREM sub-projects.

12.2 Approach to Grievance Redress

226. PT SMI will use their Corporate GRM system "*Pedoman dan Prosedur Pengelolaan Keluhan Masyarakat Terdampak dan Kelompok Pemerhati*" to capture and manage GREM project and sub-project grievances. The Corporate Secretary Division of PT SMI is the one that responsible for the GRM. It is under and reporting directly to the President Director of PT SMI. The Corporate Secretary Division will receive all the inputs, complaints, aspirations, ideas that are addressed to PT SMI and will store them in the database. The Corporate Secretary Division will pass them on to the Environmental and Social safeguards team to assign to the responsible team for response. In addition, there is also already guidance for a Whistle Blowing System (WBS) of PT SMI, namely "*Pedoman Sistem Pelaporan Pelanggaran*" if the substance of grievance contains business ethics.

227. Affected members of the public, stakeholders, IPs communities or individuals, and Project Affected People will be able to file complaints and to receive satisfying responses in a timely manner. The system will record and consolidate complaints and their follow-ups. This system will be designed not only for complaints regarding the preparation and implementation of LARAP and IPP, but also for handling complaints of any types of issues (including environmental and other social safeguards issues) related to the projects financed by the PT SMI and the Word Bank under this Project.

228. The purpose of the GRM is to:

- Be responsive to the needs of people impacted by the sub-project and to address and resolve their grievances;
- Serve as a conduit for soliciting inquiries, inviting suggestions, and increasing community participation;
- Collect information that can be used to improve operational performance;
- Enhance the project's legitimacy among stakeholders;
- Promote transparency and accountability; and
- Deter fraud and corruption and mitigate project risks.

12.3 The GREM Grievance Redress Mechanism

229. In addition to the GRM at PT SMI, sub-borrower is also required to develop their own GRM at sub-project level. This sub-project level GRM may comprise the following commensurate to the nature and risk of the sub-project:

Step 1: Access point / complaint uptake:

(a) An easily accessible and well publicized focal point or user-facing 'help desk' will be setup within sub borrowers and with each sub borrower.

(b) Uptake channels will include email, SMS, webpage, and face-to-face. The uptake channels will be publicized and advertised via local media and via the Contractor under sub borrowers.

(c) Staff members who receive complaints verbally will put them in writing to be considered. Many complaints may be resolved 'on the spot' and informally by the Contractor or sub borrowers Safeguards staff. Resolutions should be logged to (i) encourage responsiveness; and (ii) ensure that repeated or low-level grievances are being noted in the system.

(d) The Contractor's and sub borrower GRM system will be coordinated with the project GRM so that all complaints are captured within the PT SMI GRM system.

(e) The GRM will have the ability to handle anonymous complaints.

(f) The complainant will be provided with a receipt and 'roadmap' telling him/her how the complaint process works and when to expect further information.

Step 2: Grievance log

(g) All complaints will be logged in writing and maintained in a simple database.

(h) Complaints received will be assigned a number that will help the complainant track progress via the database.

(i) Complainants will be handed a receipt and a flyer that describes the GRM procedures and timeline (staff should be trained to read this orally for illiterate complainants).

(j) Where possible, the grievance log will capture complaints being made via informal or traditional systems, such as village councils or elders.

(k) This will often require informing local people and putting in place a formal link between the traditional systems and the GREM GRM (this could take the form of a verbal agreement or a written MoU).

(l) At a minimum, the database will track and report publicly the complaints received, complaints resolved and the complaints that have gone to mediation. The database will also show the issues raised and location of complaints circle around.

Step 3: Assessment, acknowledgment, and response

(m) Eligibility will be a procedural step to ensure that the issue being raised is relevant to the project.

(n) Complaints that cannot be resolved on the spot will be directed to the grievance focal point within borrower's Safeguards team who will have reasonable response time to assess the issue and provide a response to the complainant commensurate with nature of the complaint.

(o) Grievances will be categorized according to the type of issue raised and the effect on the environment/claimant if the impacts raised in the complaint were to occur. Based on this categorization, the complaint will be prioritized based on risk and assigned for appropriate follow up.

(p) Assessment of the issue will consider the following:

i. **Who is responsible for responding to this grievance? Is it the Contractor, sub borrowers, sub borrowers' Safeguards Team, or someone else?** It is anticipated that the majority of issues raised during the sub-project preparation will be informational in nature or feedback that requires small course corrections; these should generally be handled by the SMT. During infrastructure and drilling operations, the majority of complaints will be the responsibility of the Contractor.

ii. **What is the risk-level of this complaint?** Is it low risk, medium risk, or high risk? Complaints that constitute a higher-risk issue for the project should be overseen by the EPM.

iii. **Is the complaint already being addressed elsewhere?** If an issue is already being handled, for example by a local court or mediation body, or within the World Bank, then the issue will be excluded from the grievance redress process in order to avoid duplication and confusion on the part of the complainant.

(q) *Resolution:* Once the above issues have been considered, the complainant will be offered option(s) for resolution of their issue. The option offered is likely to fall into one of the following three categories:

i. The complaint falls under the mandate of sub borrowers' safeguard team or the Contractor and resolution can be offered immediately according to the request made by the complainant. The response will describe how and when resolution will be provided by the sub-borrower and the name and contact information of the staff member responsible for it.

ii. The complaint falls under the mandate of sub borrowers or the Contractor but various options for resolution can be considered and/or extraordinary resources are required. The focal point will invite the complainant to a meeting to discuss these options.

iii. The complaint does not fall or only partially falls under the mandate of PT. SMI . The focal point will indicate that the complaint has been referred to the appropriate body, which will continue communications with the complainant.

Step 4: Appeals

(r) Where an agreement has not been reached, the complainant will be offered an appeals process. This will be through the national courts, unless the complainant requests facilitation or mediation via a third party.

i. If the complainant accepts the option, and an agreement is reached, implementation will be monitored by the independent monitoring agency and a memo will be signed signalling the complaint has been resolved.

ii. If the complainant does not accept these options or if he/she does but an agreement is not reached, the case will be closed. The complainant may seek redress through courts or other mechanisms available at the country level.

Step 5: Resolve and follow-up

(s) Where there is an agreement between the complainant and sub borrowers' safeguard team or Contractor on how the complaint will be resolved, a memo will be drafted and signed by both parties. After due implementation of it, a new memo will be signed stating that the complaint has been resolved.

(t) All supporting documents of meetings needed to achieve resolution will be part of the file related to the complaint. This will include meetings that have been escalated to an appeals level or are handled by a third party.

(u) Sub borrowers' Safeguards Team will provide periodic reports to the public that track the complaints received, resolved, not resolved, and referred to a third party. PT SMI will receive either the raw grievance data or the periodic reports, in order to support the sub borrowers' safeguard team in early identification of developing risks.

(v) The GRM data will be available to feed into PT SMI reports to demonstrate responsiveness and early resolution of issues.

12.4 GRM Assessments for Sub-projects

230. The approach to redress grievance at the sub-project level will involve the following:

(a) Assessment of risks and potential grievances and disputes for each sub-project: Thesub borrowers' Safeguards Teammust understand the issues that are – or are likely to be – at the heart of disputes related to each sub-project, such as clarity over land rights or labor issues. For this, the sub-borrower must conduct a rapid review of contentious issues, stakeholders, and institutional capacity for each sub-project during the ESIA preparation, strongly relying on existing information from civil society and other non-state institutions. The review must map who the key stakeholders to these issues are and what the nature of the debate is

(informed, polarized, etc.). Attention must be paid to the local dispute resolution culture and particularly to the capacity and track-record of stakeholders to settle disputes through mediation or constructive negotiation.

(b) Capacity Assessment: The review must also cover the availability, credibility and capabilities of local institutions to address the issues related to geothermal drilling and exploration activities. For each of the institutions that are expected to deal with these issues, a credibility assessment must be undertaken, based on the following criteria:

i. Legitimacy: is its governance structure widely perceived as sufficiently independent from the parties to a particular grievance?
ii. Accessibility: does it provide sufficient assistance to those who face barriers such as language, literacy, awareness, cost, or fear of reprisal?
iii. Predictability: does it offer a clear procedure with a time frame for each stage and clarity on the types of results it can (and cannot) deliver?
iv. Fairness: are its procedures widely perceived as fair, especially in terms of access to information and opportunities for meaningful participation in the final decision?
v. Rights compatibility: are its outcomes consistent with applicable national and international standards? Does it restrict access to other redress mechanisms?
vi. Transparency: are its procedures and outcomes transparent enough to meet the public interest concerns at stake?
vii. Capability: does it have the necessary technical, human and financial resources to deal with the issues at stake?

231. Action Plan: Action plans must be sub-project-specific, but should focus on tangible steps that can be taken during preparation and implementation to strengthen grievance redress capacity.

Appendix A. DESKTOP REVIEW CHECKLIST

Instructions:

This form is to assist PT SMI with review of safeguards instruments and the environmental and social risks and impacts of sub-project applications from sub-borrowers. Use the checklist to review the documents. Supplement the due diligence process by using google earth, maps, technical reports and other published data.

.

Provide a short report to accompany the filled in checklist, detailing significant findings and providing recommendations for the site visit and due diligence process. Attach relevant maps and supporting data. Provide a separate analysis of potential risks from the exploitation phase, noting any new risks or risks that may have more significant impacts.

Sub-project Name:_____

Location:_____

Province:_____

Description of Proposed Activities (test well drilling, access roads, workers camps etc.):_____

_____

_____

_____

Description of downstream exploitation project activities that are relevant:_____

_____

_____

_____

_____

_____

Data collected (tick all that apply, and explain where necessary):	
Topographic maps	
Geothermal prospect and resource data (from technical team)	
Google earth images	
Land tenure maps / data	

Data collected (tick all that apply, and explain where necessary):	
(forest maps, land ownership maps, land use maps etc.)	
District and Provincial Spatial Plans	
District and Provincial bylaws, policies etc.:	
Demographic data / census data	
Meteorological data	
Published documents or data (list):	

Basic Screening Checklist

Screening Question for Geothermal Exploration Area of Influence* *Note on the checklist or in an attached report where issues may relate only to downstream exploitation	**Answer**		**Relevant Policy**
	Yes? **Unknown but possible?** **Yes, associated with exploitation?** Rank Significant, Moderate or Minor Risk of potential impacts Provide details on map or in checklist and make recommendations for 1) the detailed screening phase and 2) feasibility report	**No?** **Unknown but unlikely?** Low risk. Proceed to next screening question. Make recommendations for the detailed screening phase for any unknown risks.	
Are there unique or remarkable landscapes or geothermal or geological features in the area?			*OP 4.01 Environmental Assessment*
Are there economic or subsistence livelihoods that rely heavily on natural resources in the area (ecotourism, subsistence agriculture or fisheries, logging, irrigation)?			*OP 4.01 Environmental Assessment* *OP4.36 Forests*
Are there forests, lakes, wetlands, peatlands, coastal areas, rivers in the area?			*OP4.04 Natural habitat* *OP4.36 Forests*

Screening Question for Geothermal Exploration Area of Influence* *Note on the checklist or in an attached report where issues may relate only to downstream exploitation	Answer		Relevant Policy
	Yes? **Unknown but possible?** **Yes, associated with exploitation?** Rank Significant, Moderate or Minor Risk of potential impacts Provide details on map or in checklist and make recommendations for 1) the detailed screening phase and 2) feasibility report	**No?** **Unknown but unlikely?** Low risk. Proceed to next screening question. Make recommendations for the detailed screening phase for any unknown risks.	
Are there any endangered or critically endangered species likely to be in the area?			*OP4.04 Natural habitats*
Are there any protected areas (such as national parks, conservation areas etc.) in the area?			*OP4.04 Natural habitats* *OP4.36 Forests*
Are there any nationally or internationally significant cultural sites, archaeological sites, spiritual sites, or other PCR in the area?			*OP4.09 Physical Cultural Resources*

Screening Question for Geothermal Exploration Area of Influence* *Note on the checklist or in an attached report where issues may relate only to downstream exploitation	Answer		Relevant Policy
	Yes? **Unknown but possible?** **Yes, associated with exploitation?** Rank Significant, Moderate or Minor Risk of potential impacts Provide details on map or in checklist and make recommendations for 1) the detailed screening phase and 2) feasibility report	**No?** **Unknown but unlikely?** Low risk. Proceed to next screening question. Make recommendations for the detailed screening phase for any unknown risks.	
Is there a possibility that Indigenous People[29] will be present in the area so that specific consultation and a Social Assessment is required?			*OP4.10 Indigenous Peoples*
Is there communally owned land or resources in the area so that land acquisition may be complicated?			*OP4.12 Involuntary Resettlement*

[29] Ethnic communities, minorities, indigenous communities, as per the defining characteristics listed in Section 7.

Screening Question for Geothermal Exploration Area of Influence* *Note on the checklist or in an attached report where issues may relate only to downstream exploitation	**Answer**		**Relevant Policy**
	Yes? **Unknown but possible?** **Yes, associated with exploitation?** Rank Significant, Moderate or Minor Risk of potential impacts Provide details on map or in checklist and make recommendations for 1) the detailed screening phase and 2) feasibility report	**No?** **Unknown but unlikely?** Low risk. Proceed to next screening question. Make recommendations for the detailed screening phase for any unknown risks.	
Is there private land or forestry land where land acquisition can be negotiated? (Note that 'yes' is a positive aspect of the project).			*OP4.12 Involuntary Resettlement*
Is it likely that people will be restricted from accessing protected areas for livelihood purposes?			*OP4.12 Involuntary Resettlement*
Other risks or benefits identified not on the list:			

Appendix B. DETAILED SCREENING CHECKLISTS

Instructions:

Competent environmental and social specialists will be engaged to complete the detailed screening.

As part of the safeguards instrument and sub-project application process undertake a site visit and use this checklist to inform the due diligence assessment to identify environmental and social risks, World Bank policies triggered, and safeguards instruments required. Use the checklist as a prompt and for documenting results.

Screening Activities:

a. Review published data, carry out field visits, gather primary data, and consult with the local environmental and planning agencies to discuss their spatial plans and bylaws, assess institutional capacity and consult with key informants / stakeholders.
b. Identify sensitive receptors in the project area of influence such as: forests, natural habitats (terrestrial and aquatic), protected areas (national parks, conservation areas), sites of ecological importance, communities, community assets, land owners, indigenous people and/or their lands / domain, communal land / resources, physical cultural resources, geothermal features, landscapes and geological forms.
c. Identify land tenure and land uses. Identify water users and uses. Identify applicable local laws and planning frameworks.
d. Identify stakeholders and their sentiment about geothermal development.
e. Using professional opinion and experience, review the adequacy of the assessment of potentially significant impacts on sensitive receptors from the sub project and the mitigation measures proposed.
f. Policy trigger: From the checklist, identify the policies triggered by the sub-project (including linked activities).
g. Category Screening: Classify the sub-project as Category A if any one of the answers in the checklist triggers an A, otherwise classify the sub-project as Category B. If any of the aspects of the linked activities triggers an A sub-project will be classified as Category A.
h. Safeguard instruments: List all of the relevant instruments as per the screening checklist. Note where specific tasks for the ESIA are required, such as Social Assessment for Indigenous Peoples. Identify any gaps in the sub-project application.

Reporting:

i. Provide a full report for the application evaluation process. Include key findings and recommendations for gap filling.

Sub-project Details

Sub-project Name:_____

Location:_____

Province:_____

Description of Proposed Activities:_____

_____

_____

_____

Significant Sensitive Receptors_____

_____

_____

_____

Description of Linked Activities:_____

_____

_____

_____

Significant Sensitive Receptors of Linked Activities_____

_____

_____

_____

Safeguard Screening, Policy Triggering and Safeguard Instrument Checklist

Question *Note on the checklist or in an attached report where issues may relate only to downstream exploitation	**Answer**		**If Yes** **Policy triggered**	**Category and Safeguard Instrument**
	Yes Significant, Moderate, Minor	No		
Are the subproject impacts likely to have significant adverse **environmental** impacts that are sensitive,[30] diverse or unprecedented?[31] Provide brief description:			*OP 4.01 Environmental Assessment*	If "No": Cat B If "Yes": Cat A ESIA, ESMP, UKL/UPL
Are the subproject impacts likely to have significant adverse **social** impacts that are sensitive, diverse or unprecedented?[32]Provide brief description.			*OP 4.01 Environmental Assessment*	If "No": Cat B If "Yes": Cat A ESIA, ESMP, UKL/UPL

[30] Sensitive (i.e., a potential impact is considered sensitive if it may be irreversible, e.g., permanently affect significant landscape features.
[31] Large scale induced slash and burn agricultural development into forested areas.

Question *Note on the checklist or in an attached report where issues may relate only to downstream exploitation	Answer		If Yes Policy triggered	Category and Safeguard Instrument
	Yes Significant, Moderate, Minor	No		
Do the impacts affect an area broader than the sites or facilities subject to physical works and are the significant adverse environmental impacts irreversible? Provide brief description:			*OP 4.01 Environmental Assessment*	If "No": Cat B. If "Yes": Cat A ESIA, ESMP, UKL/UPL

Question *Note on the checklist or in an attached report where issues may relate only to downstream exploitation	Answer		If Yes Policy triggered	Category and Safeguard Instrument
	Yes Significant, Moderate, Minor	No		
Will the subprojects have positive environmental or social benefits? Provide brief description:			*OP 4.01 Environmental Assessment*	If "No": Cat B. If "Yes": Cat B ESIA, ESMP, UKL/UPL
Will the subprojects adversely impact physical cultural resources?[33] Please provide brief justification.			*OP 4.11 Physical Cultural Resources*	If "Yes / Significant": Cat A. Prepare PCR Management Plan as part of ESMP. If Yes / Moderate or Yes / Minor: Cat B. If 'No': Use chance find procedures.
Will the subprojects involve the conversion or degradation of non-critical natural habitats? Please provide brief justification.			*OP 4.04 Natural Habitats*	If 'No': Refer to next screening question. If "Yes / Significant": Cat A. If "Yes / Moderate or Yes / Minor': Cat B

[33] Examples of physical cultural resources are archaeological or historical sites, religious or spiritual sites, particularly sites recognized by the government.

Question *Note on the checklist or in an attached report where issues may relate only to downstream exploitation	Answer		If Yes Policy triggered	Category and Safeguard Instrument
	Yes Significant, Moderate, Minor	No		
Will the subprojects involve the conversion or degradation of critical natural habitats?[34]			*OP 4.04 Natural Habitats*	If "No": Refer to next screening question. If "Yes/Significant": not eligible for project financing as would be inconsistent with the Policy. If "Yes / Moderate or Yes Minor": Cat A
Do the subprojects involve involuntary land acquisition? Significant >200 people displaced or 10% households' assets affected. Moderate <200 people or 10% of households' assets affected.			*OP 4.12 Involuntary Resettlement*	If "No": Refer to next screening question. If "Yes / Significant": Cat A, LARAP If "Yes / Moderate": Cat B, Abbreviated LARAP

[34]Sub-projects that significantly convert or degrade critical natural habitats such as legally protected, officially proposed for protection, identified by authoritative sources for their high conservation value, or recognized as protected by traditional local communities, are ineligible for Bank financing.

Question *Note on the checklist or in an attached report where issues may relate only to downstream exploitation	**Answer**		**If Yes** **Policy triggered**	**Category and Safeguard Instrument**
	Yes Significant, Moderate, Minor	No		
Do the subprojects involve loss of assets or access to assets, or loss of income sources or means of livelihood as a result of involuntary land acquisition? Please provide brief justification			*OP 4.12 Involuntary Resettlement*	If "No": Refer to next screening question. If "Yes / Significant": Cat A, LARAP If "Yes / Moderate or Minor": Cat B, Abbreviated LARAP
Do the subprojects involve loss of assets but not as a result of involuntary land acquisition?			*OP4.01 Environmental Assessment*	If "No": Refer to next screening question. If "Yes": Cat B. Manage compensation at replacement value under ESMP.

Question *Note on the checklist or in an attached report where issues may relate only to downstream exploitation	Answer		If Yes Policy triggered	Category and Safeguard Instrument
	Yes Significant, Moderate, Minor	No		
Are there Indigenous People present in the subprojects' areas?: Self-identify as part of a distinct social and cultural group, and Maintain cultural, economic, social and political intuitions distinct from the dominant society and culture?, and Speak a distinct language or dialect?, and Been historically, socially and/or economically marginalized, disempowered, excluded and/or discriminated against?			*OP4.10 Indigenous Peoples*	If "No": Refer to next screening question. If "Yes": Cat A Refer IPF for requirements for Social Assessment in the ESIA and IPP.

Question *Note on the checklist or in an attached report where issues may relate only to downstream exploitation	Answer		If Yes Policy triggered	Category and Safeguard Instrument
	Yes Significant, Moderate, Minor	No		
Will the subprojects directly or indirectly benefit or target Indigenous Peoples?			*OP4.10 Indigenous Peoples*	If there are no IP in the project area, or this question is otherwise not relevant, put NA in each column. If "No benefit or target" or "Yes benefit or target": Cat A. Address in Social Assessment and IPP preparation.
Will the subprojects directly or indirectly affect Indigenous Peoples traditional socio-cultural and belief practices? (E.g. child-rearing, health, education, arts, and governance)?			*OP4.10 Indigenous Peoples*	If "No": Refer to next screening question. If "Yes": Cat A Refer IPF for requirements for Social Assessment in the ESIA and IPP.
Will the subprojects affect the livelihood systems of Indigenous Peoples? (e.g., food production system, natural resource management, crafts and trade, employment status)?			*OP4.10 Indigenous Peoples*	If "No": Refer to next screening question. If "Yes": Cat A Refer IPF for requirements for Social Assessment in the ESIA and IPP.

Question *Note on the checklist or in an attached report where issues may relate only to downstream exploitation	Answer		If Yes Policy triggered	Category and Safeguard Instrument
	Yes Significant, Moderate, Minor	No		
Will the subprojects be in an area (land or territory) occupied, owned, or used by Indigenous Peoples, and/or claimed as ancestral domain?			*OP4.10 Indigenous Peoples*	If "No": Refer to next screening question. If "Yes": Cat A Refer IPF for requirements for Social Assessment in the ESIA and IPP.

Appendix C. ESIA REPORT OUTLINE FOR CATEGORY A SUB-PROJECTS

With reference to Annex B to OP 4.01 - Content of an Environmental Assessment Report for a Category A Project.

An ESIA report for a Category A subproject focuses on the significant environmental issues of a project. The report's scope and level of detail should be commensurate with the project's potential impacts. The report submitted to the Bank is prepared in English and the executive summary in English.

The ESIA report should include the following items (not necessarily in the order shown):

(a) *Executive summary*. Concisely discusses significant findings and recommended actions.

(b) *Policy, legal, and administrative framework*. Discusses the policy, legal, and administrative framework within which the EA is carried out. Explains the environmental requirements of any co-financiers. Identifies relevant international environmental agreements to which the country is a party.

(c) *Subproject description*. Concisely describes the proposed project and its geographic, ecological, social, and temporal context, including any offsite investments that may be required (e.g., dedicated pipelines, access roads, power plants, water supply, housing, and raw material and product storage facilities). Indicates the need for any resettlement plan or Indigenous Peoples Plan (see also sub-para. (h)(v) below). Normally includes a map showing the project site and the project's area of influence.

(d) *Baseline data*. Assesses the dimensions of the study area and describes relevant physical, biological, and socioeconomic conditions, including any changes anticipated before the project commences. Also takes into account current and proposed development activities within the project area but not directly connected to the project. Data should be relevant to decisions about project location, design, operation, or mitigation measures. The section indicates the accuracy, reliability, and sources of the data.

(e) *Social Assessment.* Assessment of the social context, including the presence of Indigenous Peoples, in accordance with OP4.10. It will include a description of the subproject and potential issues or impacts relating to communities (and identifying where some communities or subgroups may be affected differently); identification of relevant communities and other key stakeholders to be consulted; baseline information on the demographic, social, cultural, economic and political characteristics of relevant communities; assessment of the potential adverse impacts and benefits likely to be associated with the project based on consultation; and summary of preferences and concerns of communities relating to project objectives, access and cultural appropriateness of project benefits, mitigation of any adverse impacts, and project implementation arrangements.

(f) *Environmental and social impacts*. Predicts and assesses the project's likely positive and negative impacts, in quantitative terms to the extent possible. Identifies mitigation measures and any residual negative impacts that cannot be mitigated. Explores opportunities for environmental enhancement and improvement of the welfare and livelihoods of affected people. Identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions, and specifies topics that do not require further attention.

(g) *Analysis of alternatives*. Systematically compares feasible alternatives to the proposed subproject site, technology, design, and operation—including the "without subproject" situation--in terms of their potential environmental impacts; the feasibility of mitigating these impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements. For each of the alternatives, quantifies the environmental impacts to the extent possible, and attaches economic values where feasible. States the basis for selecting the particular project design proposed and justifies recommended emission levels and approaches to pollution prevention and abatement.

(h) *Environmental and social management plan (ESMP)*. Covers mitigation measures, monitoring, and institutional strengthening; see outline in **Error! Unknown switch argument.**.

(i) Appendixes

- List of EA report preparers--individuals and organizations.
- References--written materials both published and unpublished, used in study preparation.
- Record of interagency and consultation meetings, including consultations for obtaining the informed views of the affected people and local non-governmental organizations (NGOs). The record specifies any means other than consultations (e.g., surveys) that were used to obtain the views of affected groups and local NGOs.
- Tables presenting the relevant data referred to or summarized in the main text.
- List of associated reports (e.g., resettlement plan or indigenous people development plan).

Appendix D. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN TEMPLATE

With reference to Annex C to World Bank Safeguard Policy OP 4.01 - Environmental Management Plan

A subproject's environmental and social management plan (ESMP) consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. The plan also includes the actions needed to implement these measures. To prepare an ESMP, PT SMI will (a) identify the set of responses to potentially adverse impacts; (b) determine requirements for ensuring that those responses are made effectively and in a timely manner; and (c) describe the means for meeting those requirements. More specifically, the ESMP will include the following components.

Mitigation

The ESMP identifies feasible and cost-effective measures that may reduce potentially significant adverse environmental impacts to acceptable levels. The plan includes compensatory measures if mitigation measures are not feasible, cost-effective, or sufficient. Specifically, the ESMP:

a. identifies and summarizes all anticipated significant adverse environmental impacts (including those involving indigenous people or involuntary resettlement);
b. describes--with technical details--each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate;
c. estimates any potential environmental impacts of these measures; and
d. provides linkage with any other mitigation plans (e.g., for involuntary resettlement, Indigenous Peoples, or cultural property) required for the project.

Monitoring

Environmental monitoring during project implementation provides information about key environmental aspects of the project, particularly the environmental impacts of the project and the effectiveness of mitigation measures. Such information enables the borrower and the Bank to evaluate the success of mitigation as part of subproject supervision, and allows corrective action to be taken when needed. Therefore, the ESMP identifies monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the ESIA report and the mitigation measures described in the ESMP. Specifically, the monitoring section of the ESMP provides:

a. a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and
b. monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

Capacity Development and Training

To support timely and effective implementation of environmental subproject components and mitigation measures, the ESMP draws on the ESIA's assessment of the existence, role, and capability of environmental units on site or at the agency and ministry level. If necessary, the ESMP recommends the establishment or expansion of such units, and the training of staff, to allow implementation of ESIA recommendations. Specifically, the ESMP provides a specific description of institutional arrangements--who is responsible for carrying out the mitigation and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training). To strengthen environmental management capability in the agencies responsible for implementation, most ESMPs cover one or more of the following additional topics: (a) technical assistance programs, (b) procurement of equipment and supplies, and (c) organizational changes.

Implementation Schedule and Cost Estimates

For all three aspects (mitigation, monitoring, and capacity development), the ESMP provides (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the ESMP. These figures are also integrated into the total project cost tables.

Integration of ESMP with Project

The borrower's decision to proceed with a project, and the Bank's decision to support it, are predicated in part on the expectation that the EMP will be executed effectively. Consequently, the Bank expects the plan to be specific in its description of the individual mitigation and monitoring measures and its assignment of institutional responsibilities, and it must be integrated into the project's overall planning, design, budget, and implementation. Such integration is achieved by establishing the ESMP within the project so that the plan will receive funding and supervision along with the other components.

The following tables are the suggested template for summary of the mitigation and monitoring plans for the exploration and development phase of geothermal activities.

A. TEMPLATE MITIGATION PLAN FOR EXPLORATION

			Cost to:		Institutional Responsibility to:		Comments (e.g. secondary or cumulative impacts)
Phase	Impact	Mitigating Measure	Install	Operate	Install	Operate	
Exploration phase							
Decommissioning							

Phase							

B. MONITORING PLAN FOR EXPLORATION

						Cost to:		Institutional Responsibility to:	
Phase	What (parameter)	Where	How (equipment)	When (frequency)	Why	Install	Operate	Install	Operate
Exploration phase									
Decommissioning Phase									

Appendix E. FORMAT OF UKL/UPL

The following form is the Format for the Environmental Management Plan (UKL) and Environmental Monitoring Plan (UPL). It describes the impact of the planned activities on the environment and how it will be managed. As an integral part of the UKL/UPL, the Statement of Assurance for Implementation of UKL/UPL also included. This format complies with the Regulation of the Minister of Environment No. 16/2012 which can be referred to for further guidance.

Title of Chapter/Sub-Chapter	Content/Remarks
Statement Letter from Project Management	
	a. The statement letter from project management will state their accountability to ensure that the Environmental Management Plan (*Upaya Pengelolaan Lingkungan* / UKL) and Environmental Monitoring Plan (*Upaya Pemantauan Lingkungan* / UPL) will be done. This statement Letter should be signed on a stamp duty acknowledged by the Head of BLHD (local environmental agency) and the Head of Local Government (Governor/Bupati/Mayor). b. Project management consists of those parties who prepare and implement the Subproject Activities, those parties who are responsible for the operations and maintenance of the Project Activities, and other parties responsible for environmental management and monitoring.
I. Description of subproject management	
1.1 Company Name	…….
1.2 Name of Subproject Management Entity	Name of subproject management entity and their job description at each stage of the Subproject Activities, which should include: a. Agency or office responsible for the preparation and implementation of Project Activities. b. Agency or office responsible for the operations and maintenance of the Project Activities after the work is completed. c. Agency or office responsible for environmental management and monitoring.
1.3 Address, Number	Clear address of the named agencies or offices related to the Project

Title of Chapter/Sub-Chapter	Content/Remarks
Phone and Fax, Website and Email	Activities in accordance to the point 1.1 above.
II. Description of Subproject Activities and its impact	
2.1 Subproject Activities Name	Name of Subproject Activities in a clear and complete manner.
2.2 Subproject Activities Location	a. Location of the Subproject Activities in a clear and complete manner: *Kelurahan*/Village, District/city, and Province where the Project Activities and its components take place. b. Location of the Subproject Activities should be drawn in a map using an adequate scale (for example, 1:50.000, accompanied with latitude and longitude of the location).
2.3 Scale of the Subproject Activities	An estimation of the scale and type of SubprojectActivities (using accepted units of measurement). For example: the construction of a market of certain capacity may need to be accompanied by supporting facilities in line with the Environmental Management Plan that must mention the type of component as well as the scale.
2.4 Component of Subproject Activities in brief outline	A brief and clear explanation on any component of the Subproject Activities which have potential environmental impacts. Work components should be divided based on stages as follows: a. Pre-construction, for example: mobilization of workforce and materials, transportation, etc. b. Construction, for example the use of ground water, laying out of utility pipes, etc. c. Operations and Maintenance: Post-construction, for example: clearing of excavated waste material, etc. Also, attach the flowchart/diagram to explain the flow of work to be done, if applicable.
III POTENTIAL ENVIRONMENTAL IMPACT	Explain in a brief and clear manner about any Subproject Activities with potential environmental impacts, type of impacts which might occur, magnitude of impacts, and other matters needed to describe any potential environmental impacts on the natural and social environment. Such descriptions can be presented in tabulation, with each column representing

Title of Chapter/Sub-Chapter	Content/Remarks
	each of the aspects. A description of the size or magnitude of the impacts should be accompanied with measurement units based on applicable laws and regulations or specific scientific analysis.
IV. environmental management and monitoring program	
4.1 Environmental Management Plan	a. The Environmental Management Plan (UKL) consists of the plan itself, as well as the party in charge, frequency of interventions, implementation schedule, and types of mechanisms (e.g.: procedures for management, methods, etc.) in order to mitigate the environmental impacts identified Section III above. b. The plan can be presented in a table format, which at minimum contains the following columns: type of impact, source, magnitude, threshold, management plan, and frequency of interventions, party in charge, and other remarks.
4.2 Environmental Monitoring Plan	a. The Environmental Monitoring Plan (UPL) consists of the plan itself, party in charge, frequency of interventions, implementation schedule, and types of mechanisms (e.g.: procedures for monitoring, methods, etc.) in order to monitor the environmental management plan described in section 4.1 above. b. The plan can be presented in a table format, which at minimum contains the following columns: type of impact, source, magnitude, threshold, management plan, and frequency of interventions, party in charge, and other remarks. In this monitoring plan, the thresholds should comply with the prevailing laws and regulations which are applicable according to the environmental impacts as already identified in Section III above.
V. SIGNATURE AND OFFICE SEAL	After the UKL-UPL document is prepared and complete, the Project Manager should sign and put an official seal on the document.
VI. REFERENCE	Insert various references used in the preparation of UKL-UPL.
VII. ATTACHMENTS	Attach any relevant documents or information to the UKL-UPL, e.g. tables displaying the monitoring results, and others.

Appendix F. STATEMENT OF ASSURANCE FOR UKL-UPL

No:…….

In an effort to prevent, minimize and/or address the potential environmental impacts from the Construction Work of....., in the District/Province of..... as well as in accordance to the duty and authority of the Dinas....., of the District/Province of shall carry out an Environmental Management Plan (UKL) and Environmental Monitoring Plan (UPL) and include the recommendations from UKL-UPL into the Detailed Design.

For the next stage, which is the physical work, implementation of the recommendations from UKL/UPL shall be done by the party in charge for the physical work, which is "Satker..... of the District/Province....."

This statement is duly made, as confirmation to support the Environmental Management Plan (UKL) and Environmental Monitoring Plan (UPL) on the Construction Work for the Construction of ....., in the District/Province of.....

Location,....., Date…….

DINAS……

DISTRICT/PROVINCE OF .....

Satker

NAME .....

Appendix G. PCR CHANCE FIND PROCEDURE

Definition. A chance find is archaeological, historical, cultural, and remain material encountered unexpectedly during project construction or operation. A chance find procedure is a project-specific procedure which will be followed if previously unknown cultural heritage is encountered during project activities. Such procedure generally includes a requirement to notify relevant authorities of found objects or sites by cultural heritage experts; to fence off the area of finds or sites to avoid further disturbance; to conduct an assessment of found objects or sites by cultural heritage experts; to identify and implement actions consistent with the requirements of the World Bank and Indonesian law; and to train subproject personnel and subproject workers on chance find procedures.

Objectives.

- To protect physical cultural resources from the adverse impacts of subproject activities and support its preservation.
- To promote the equitable sharing of benefits from the use of PCR.

Procedure.

a. If PT SMI, sub borrower's consultants or Contractors discover archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, they shall:
b. Halt the construction activities in the area of the chance find;
c. Delineate and fence the discovered site or area;
d. Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities or the District/Provincial Department of Culture, or the local Institute of Archaeology if available to take over;
e. Forbid any take of the objects by the workers or other parties;
f. Notify all sub-project personnel of the finding and take the preliminary precaution of protection;
g. Record the chance find objects and the preliminary actions;
h. Notify the responsible local authorities and the relevant Institute of Archaeology immediately (within 24 hours or less);
i. Responsible local authorities would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the local Institute of Archaeology. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;
j. Decisions on how to handle the finding shall be taken by the responsible authorities. This could include changes in the sub-project layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage;

k. Implementation for the authority decision concerning the management of the finding shall be communicated in writing by relevant local authorities;
l. The mitigation measures could include the change of subproject design/layout, protection, conservation, restoration, and/or preservation of the sites and/or objects;
m. Construction work at the site could resume only after permission is given from the responsible local authorities concerning safeguard of the heritage; and
n. PT SMI, sub borrower consultants and their contractors, shall cooperate with the relevant local authorities to monitor all construction activities and ensure that the adequate preservation actions are taken and hence the heritage sites protected.

Appendix H. SAMPLE OF GRIEVANCE FORM

Reference No	
Full Name	
Please mark how you wish to be contacted (mail, telephone, e-mail).	Please mark how you wish to be contacted
Province/District	
Date	

Category of the Grievance	
1. On abandonment (hospital, public housing)	
2. On assets/properties impacted by the project	
3. On infrastructure	
4. On decrease or complete loss of sources of income	
5. On environmental issues (ex. pollution)	
6. On employment	
7. On traffic, transportation and other risks	
8-Other (Please specify):	

Description of the Grievance What did happen? When did it happen? Where did it happen? What is the result of the problem?
What would you like to see happen to resolve the problem?

Signature: Date:

Appendix I. SAMPLE OF GRIEVANCE CLOSE OUT FORM

Grievance closeout number:		
Define immediate action required:		
Define long term action required (if necessary):		
Compensation Required?	[ ] YES [ ] NO	
CONTROL OF THE REMEDIATE ACTION AND THE DECISION		
Stages of the Remediate Action		Deadline and Responsible Institutions
1.		
2.		
3.		
4.		
5.		

COMPENSATION AND FINAL STAGES

This part will be filled and signed by the complainant after s/he receives the compensation fees and his/her complaint has been remediated.

Notes:

Name-Surname and Signature

Date…./…../…..

Of the Complainant:

Representative of the Responsible Institution/Company

Title-Name-Surname and Signature

Appendix J. GENERIC CONTENTS OF INDIGENOUS PEOPLES PLAN

Background and Context

i. The sub-project components

ii. Brief description of Indigenous Peoples in the relevant project area

iii. Relevant legal framework

iv. Summary of the findings of the Social Assessment (part of ESIA), including among others:

a. Baseline data of IPb. Maps of the area of subproject influence and the areas inhabited by IP

c. Analysis of the IP social structure and income sources

d. Inventories of the resources used by IP, and technical data on their production systems

e. Information on cultural practices and patterns

f. Relationships of IP to other local/national groups

v. Key positive sub-project impacts on IP

vi. Key negative sub-project impacts on IP

Objectives of the IPP

i. Explain the purpose of the IPP

Development and/or Mitigation Activities

i. Describe detail of development activities

ii. Describe detail of mitigation activities

Strategy for IPP anticipation

i. Describe mechanism for participation by IP in planning, implementation, and evaluation

ii. Describe procedures for redress of grievance by IP

Institutional Arrangements

i. Identify main tasks and responsibilities in planning, managing, and monitoring development, and/or mitigation activities

ii. Identify role of NGOs or IP organizations in implementing the development and/or mitigation activities.

Budget and Financing

i. Identify development and/or mitigation activity costs and funding resources

Supervision, Monitoring, and Evaluation

i. Specify arrangements for supervision, monitoring, and evaluation

ii. Implementation strategy and schedule

iii. Prepare a plan for internal monitoring of the targets of the major development and/or mitigation activities

Appendix K. SOCIAL ASSESSMENT

Geothermal potentials and development in Indonesia. Geothermal resources are one of Indonesia's largest potential sources of renewable energy. Development of geothermal power provides a significant opportunity to address the power shortage in the country, particularly in remote areas of Indonesia. Studies have been undertaken to reveiw the geothermal resources physical spread, its future exploitation, environmental and social impacts associated, as well as the legal and regulatory framework in mitigating and managing these impacts. These were carried out through desk analysis, in-depth analysis of sample cases, field visits and public consultations.

Environmental and social impacts of geothermal development. Assessment in the sector indicates that the majority of geothermal potential is located in or close to forest areas and its development activities would require forest clearance and road construction. Given the remote and mountainous terrain, Indonesia would require probably twice as much road construction than other countries. These development and construction activities, along with other road-facilitated activities, such as hunting, illegal logging, use of fire etc. would have significant impacts on the environment, wilf life and the indigenous population living within these areas who are likely to experience loss of land, forest product access, impacts on their livelihoods, a sense of unfair sharing of benefits, outsider encroachment into their traditional territory and lives, and possible conficts with in-migrants, including the construction workers. One other important assessment is specifically focusing on indigenous people in Indonesia and the challenges they face in the development process. Key elements are summarized below. These informed the development and further strenghthening of this IPPF.

Definition and identity of indigenous people in Indonesia. Indonesia is the world's fourth most populous nation and one of the most ethnically and linguistically diverse, with over 700 distinct local ethno-linguistic groups represented within a population of over 260 million people, placing Indonesia at the second-highest level of ethnic and linguistic diversity in the world. The concept of indigenous peoples has long been the subject of debate. About 20 percent of the Indonesian population self-identify as indigenous peoples, or *masyarakat adat*. Furthermore, Indonesia's indigenous peoples' customary territory may encompass as much as 80 million hectares, including much of the remaining rainforests and ecologically important (and carbon rich) peatlands, mangroves, water catchment and nearshore marine areas.

Since the end of the New Order regime in 1998, the issue of indigenous peoples' rights, expressed through the term *adat* community rights, has re-emerged as a major socio-political movement in Indonesia. Since then Indonesia has seen a particularly intensive period of reassertion of indigenous identities or *adat* revitalization. Representations of indigenous identity have become increasingly sophisticated. In some cases, strengthened identity has been fostered by indigenous peoples themselves, often by elites, while in others, representative organizations and NGOs have assisted. Nationally, various

peoples' organizations have also been established, which in turn have been instrumental in championing and pushing for a unified definition of indigenous peoples at the government level.

Livelihoods of indiengous peoples in Indonesia. The wellbeing, livelihoods and identities of indigenous peoples have always been intimately linked to customary lands, reefs and seas, and to the natural resources contained therein. Indigenous peoples, in Indonesia as elsewhere, are highly dependent on land and marine natural resources for subsistence, income, and their social, cultural and spiritual identity and health. They have developed ecological knowledge and practices tailored to their environments, but these are diminishing as indigenous peoples have been denied access and tenure security across Indonesia over the last century.

Most of Indonesia's indigenous peoples use natural resources for subsistence needs, for food and water, energy/fuel and shelter, as well as for commercial purposes. To support their subsistence needs they practice farming (for example, paddy, taro, tuber, vegetables in mixed farming and agro-forestry contexts), fishing, hunting and harvesting or gathering and using forest timber and non-timber forest products (honey, rattan). Natural resources also support indigenous livelihoods through commercial uses, in timber, fishing/aquaculture, and plantation enterprise

Indigenous Indonesians have used a wide variety of forest timber for houses, bridges, canoes and other practical purposes for eons, as well as extracting timber for trade purposes historically and in modern times. Indigenous peoples also make use of an extremely wide range on non-timber forest products for their subsistence and income generation, including both a wide range of mammals, reptiles, birds, fishes, and insects, as well as many species of plants producing edible tubers, starches, grains, fruits, nuts, medicines and aromatic woods and oils, pigments, dyes and tanning agents, fibres and cordage, thatching and construction materials, gums and resins, waxes, rubbers, rattan, honey and more. Most of these are collected from the wild, though some may be cultivated or semi-cultivated. Four important NTFP for indigenous peoples in Indonesia, especially in terms of income generation from natural resources, are rattan, sago, honey and *gaharu*. Firewood and twigs are also still used widely as fuel for cooking, boiling water and heating in mountain areas in many provinces. Over time the level of dependence on NTFPs has generally declined, due to a variety of factors including the expansion of agriculture and plantations, loss of access to forests as well as market fluctuations and government policies. Indigenous communities in Indonesia also hunt and trap a wide variety of wild game species, including deer, crocodiles, primates, walabies and other marsupials.

Since the late 19th Century indigenous peoples throughout Indonesia have adopted a wide range of cash crops including rice, vegetable, legumes, spices, fruits, timber, medicinal plants, biofuels and essential oils. The most important cash crops include Indonesia's five major export-oriented agricultural commodities: copra, rubber, cacao, coffee and oil palm. Cash cropping by indigenous peoples arises both from their traditional practices, influence from migrants and opportunities from markets and transport systems. Rubber, cacao, coffee and copra are the main viable and more sustainable cash crops.

Artisanal and small-scale mining (ASM) operations are another way that indigenous peoples utilize the environment in Indonesia; such activities have become an important source of income for some indigenous. Many artisanal miners operate without government authorization and are therefore considered illegal or wild miners (*petambang ilegal*, *petambang liar*). These activities are fraught with risk and prone to generate conflict. Indigenous peoples in ASM are generally laborers or self-employed in the most

manual work, whereas the more skilled roles, and value-adding to the products mined by indigenous peoples, tend to be done by migrants.

Governance system among indigenous communities. Indonesia has a wide spectrum of adat governance and legal systems, reflecting cultural diversity across the archipelago. These include small band and tribal societies, which are usually highly egalitarian with quite fluid and merit-based leadership arrangements, decision making processes are largely consensus based, guided by communal values and practices and concerned with maintaining socio-cosmic harmony. On the other hand, chiefly and 'house' societies usually exhibit far more hierarchical structures including hereditary leaders and relatively prescriptive social roles for all community members. In these types of societies, adat governance and legal systems are often based on more elaborate sets of unwritten rules, and are often more concerned with maintaining social order and upholding the honor of the individuals and groups which make up society.

Villages are generally the highest level of political governance amongst indigenous peoples, however in fact various combinations of clans, corporate houses, lineages and/or households are the functional level at which most decisions are made. Decision making regarding access to land and resources is usually conducted at the level of clans or houses, rather than by the village. However, in some cases multi-village governance units exist, such as the Nagari of the Minangkabau people in West Sumatra, Desa Pakraman in Bali, paired villages in Tanimbar, and the Ratschaap (Kingdoms) in Kei, though generally the powers of such higher level leaders or titular rulers are quite limited, and they are expected to respect the cascading rights of the lower levels of social organization and governance.

Legal framework related to indigenous communities in Indonesia. The Indonesia legal hierarchy includes all regulations made by the People's Consultative Assembly (MPR), the People's Representative Council (DPR), the Regional Representative Council (DPD), the Supreme Court, state commissions, ministerial departments, non-ministerial departments, provincial and district/municipal houses of representative (DPRD), governors, district heads/mayors and village heads. Various Indonesian laws exist with provisions specifically for indigenous peoples related to forestry, marine and small island management, spatial planning, social development, environmental permitting, and village development. The 2012 Constitutional Court ruling on social forestry was a landmark in recognizing indigenous people as a legal personality with legitimate rights and obligations in forest areas. Environmental impact and permitting laws (AMDAL) also have some minimal provisions for consultation with indigenous peoples. Under social affairs legislation there are ongoing, specific programs for certain indigenous peoples. The Village Law (No. 6/2014) provides new space for indigenous peoples to potentially define their space and participation in local development.

In general, all provisions in these laws stipulate that the State respects the customary rights of indigenous peoples over land and natural resources, as well as their traditional knowledge and wisdom related to the environment. Additionally, there are other laws that pertain provisions on indigenous peoples relating to spatial planning, human rights, cultural heritage, traditional intellectual property rights, education etc. In recent years, several initiatives led by government agencies and civil society organizations have been undertaken to draft new laws or revise existing ones. Three draft laws have been prepared so far are, namely the Draft Law on the Recognition and Protection of the Rights of Indigenous Peoples, the Draft Law on Land, and the Draft Law on Biodiversity Conservation.

Development challenges and opportunites for indigenous communities. Being a significant portion of Indonesia's togaltal population, indigenous peoples face many challenges in the development process. They are disproportionately represented among its poorest population of the country.

- Indonesia's indigenous peoples have historically had access to significant swathes of territory all over the country, and have derived their sustenance and livelihoods from the resources in those territories. The absence of formal land tenure security limits their ability in handling land transactions. Since they normally rely so heavily on natural resources for their livelihoods and have few other resources or safety nets, ensuring access to natural resources and improving land tensure is critical in reducing their vulnerability.
- The welfare of indigenous communities is hampered by lack of service provision, or by provision of services that are ineffective because they do not meet locals' needs by accommodating specific cultural beliefs, habits and preferences. Their remote geographical locations, lack of infrastructure, language, low literacy social cultural barriers, and lack of capacity of the service providers etc are all at play.
- Due to their locations and socio-economic status, Indonesia's indigenous peoples are also more vulnerable than most other Indonesians to negative impacts of natural resource extraction and depletion, climate change and natural disasters such as forest fires and earthquakes. Similarly, indigenous peoples are the traditional owners and residents of Indonesia's low-lying islands and coastal areas that are extremely vulnerable to the impacts of climate change and rising sea levels. As such, they have both a knowledge base and a strong rationale to engage with these issues in various roles.
- Regarding natural-resource-based livelihoods, many indigenous peoples require targeted support for enterprise development to enable them to develop robust indigenous economies, and to compete with other Indonesians/migrants in the market economy. Much development assistance has been failing to effectively reach indigenous peoples, especially women, who face additional barriers to obtaining information, accessing markets and drawing on financial support. The concept of sustainable indigenous economies, based on environmentally-friendly and economically-viable alternatives to large plantations for indigenous peoples, need to be promoted and supported at a policy and technical level.
- Many of Indonesia's indigenous peoples aspire to supplement their livelihoods with cultural and eco-tourism, which has proven high potential for sustainable income generation, maintaining natural resources and preserving or revitalizing cultural identities and traditions. There are successful experiences of such in Indonesia and intenationally.
- Wiithin indigenous societies, the issues of social structures compounds with factors such as leaders having better Indonesian language skills and confidence in dealing with outsiders. Currently, low levels of capacity among government personnel often result in privileging certain individuals or social groups within communities over others. Adaptive policies, tailored approaches and capacity building among government personnel are needed to improve basic services such as health, education and livelihood-related extension activities.
- Principle barriers to indigenous peoples in Indonesia generating cash from the natural resources under their control are the lack of infrastructure and cost of transport. They are predominantly located in areas that are geographically distant or isolated from markets, making it difficult to connect with buyers and access information on market prices. This renders them at the mercy

of middlemen or forces them to front often high transportation costs, which reduce the viability of their transactions at market. Perishable products such as fresh fish, which require refrigeration, pose additional challenges.

- Compensation/rent/payment for resources, products or labor compensation, rents and payments from companies are an important source of income in some indigenous communities. Sometimes these payments are not made or made inadequate. When such payments are made, it is usually made to the village head and, depending on the transparency and accountability of the village head or *adat* leaders (such as a King), the depending on the ability of community members to negotiate over these payments, they may or may not be shared or find their way into the village fund. These could lead to conficts between the users and communities.
- Mechanisms that enable indigenous peoples to have a say in large-scale programs, projects or processes that have the potential to impact their environment or livelihoods can act as environmental and social impact safeguards. These safeguard mechanisms in Indonesian policies have the potential to help support the interests of indigenous peoples with regard to natural resources and land, but are still too poorly implemented at present to contribute much value.
- Even within indigenous communities, certain groups are especially vulnerable to marginalization and exclusion. Specifically, indigenous women, youth, elderly, disabled, minority sub-groups (such as sub-villages, lower castes, urban fringe dwellers in illegal settlements, etc.), indigenous people living with HIV/AIDS etc. often suffer double discrimination and exclusion from social, economic, basic services and political processes. While some indigenous communities display high levels of egalitarianism, with kinship structures, and ideals and practices of reciprocity and redistribution that generally minimize economic marginalization within communities, this is not always the case.
- Since 1999, efforts have been made to increase community participation in development, primarily through the institution of a top-down/bottom-up planning system, which involves multi-stakeholder Development Planning Consultation Forums, or Musrenbang (*Musyawarah Rencana Pembangunan*) at the provincial, district and village levels. Some regional governments have also tried to strengthen public participation by enacting local by-laws to increase transparency, deepen consultative approaches down to the village level and increase involvement of regional parialments (*Dewan Perwakilan Rakyat Daerah*, or DPRD) and CSOs, as well as providing training for officials and villagers in more participatory methodologies and cross-cultural communication.

Appendix L. CONTENT OF FULL LAND ACQUISITION AND RESETTLEMENT ACTION PLAN (LARAP)

The scope and level of detail of the resettlement plan vary with the magnitude and complexity of involuntary resettlement. The plan is based on up-to-date and reliable information about (a) the proposed resettlement and its impacts on the displaced persons and other adversely affected groups, and (b) the legal issues involved in resettlement. The resettlement plan covers the elements below, as relevant.

1. *Description of the subproject*. General description of the subproject and identification of the subproject area.
2. *Potential impacts*. Identification of the subproject component or activities that give rise to resettlement; the zone of impact of such component or activities; the alternatives considered to avoid or minimize resettlement; and the mechanisms established to minimize resettlement, to the extent possible, during subproject implementation.
3. *Objectives*. The main objectives of the resettlement program.
4. *Socioeconomic studies*. The findings of socioeconomic studies to be conducted in the early stages of subproject preparation and with the involvement of potentially displaced people, including a. the results of a census survey covering
    a. current occupants of the affected area to establish a basis for the design of the resettlement program and to exclude subsequent inflows of people from eligibility for compensation and resettlement assistance;
    b. standard characteristics of displaced households, production systems, labour, and household organization; and baseline information on livelihoods (including, as relevant, production levels and income derived from both formal and informal economic activities) and standards of living (including health status) of the displaced population;
    c. the magnitude of the expected loss--total or partial--of assets, and the extent of displacement, physical or economic;
    d. Information on vulnerable groups or persons as provided for in OP 4.12, para. 8, for whom special provisions may have to be made; and
    e. Provisions to update information on the displaced people's livelihoods and standards of living at regular intervals so that the latest information is available at the time of their displacement.
5. Other studies describing the following
    a. land tenure and transfer systems, including an inventory of natural resources which are a common property, from which people derive their livelihoods and sustenance, non-title-based usufruct systems (including fishing, grazing, or use of forest areas) governed by local recognized land allocation mechanisms;

b. the patterns of social interaction in the affected communities, including social networks and social support systems, and how they will be affected by the project;

c. public infrastructure and social services that will be affected; and

d. Social and cultural characteristics of displaced communities, including a description of formal and informal institutions (e.g., community organizations, ritual groups, nongovernmental organizations (NGOs)) that may be relevant to the consultation strategy and to designing and implementing the resettlement activities.

Legal framework. The findings of an analysis of the legal framework, covering

a. the scope of the power of eminent domain and the nature of compensation associated with it, in terms of both the valuation methodology and the timing of payment;

b. the applicable legal and administrative procedures, including a description of the remedies available to displaced persons in the judicial process and the normal timeframe for such procedures, and any available alternative dispute resolution mechanisms that may be relevant to resettlement under the project;

c. relevant law (including customary and traditional law) governing land tenure, valuation of assets and losses, compensation, and natural resource usage rights; customary personal law related to displacement; and environmental laws and social welfare legislation;

d. laws and regulations relating to the agencies responsible for implementing resettlement activities;

e. gaps, if any, between local laws covering eminent domain and resettlement and the Bank's resettlement policy, and the mechanisms to bridge such gaps; and

f. Any legal steps necessary to ensure the effective implementation of resettlement activities under the project, including, as appropriate, a process for recognizing claims to legal rights to land--including claims that derive from customary law and traditional usage (see OP 4.12, para.15 b).

g. gaps, if any, between local laws covering eminent domain and resettlement and the Bank's resettlement policy, and the mechanisms to bridge such gaps; and

h. Any legal steps necessary to ensure the effective implementation of resettlement activities under the project, including, as appropriate, a process for recognizing claims to legal rights to land--including claims that derive from customary law and traditional usage (see OP 4.12, para.15 b).

Institutional Framework. The findings of an analysis of the institutional framework covering

a. the identification of agencies responsible for resettlement activities and NGOs that may have a role in project implementation;

b. an assessment of the institutional capacity of such agencies and NGOs; and

c. Any steps that are proposed to enhance the institutional capacity of agencies and NGOs responsible for resettlement implementation.

Eligibility. Definition of displaced persons and criteria for determining their eligibility for compensation and other resettlement assistance, including relevant cut-off dates.

Valuation of and compensation for losses. The methodology to be used in valuing losses to determine their replacement cost; and a description of the proposed types and levels of compensation under local law and such supplementary measures as are necessary to achieve replacement cost for lost assets.

Resettlement measures. A description of the packages of compensation and other resettlement measures that will assist each category of eligible displaced persons to achieve the objectives of the policy (see OP 4.12, para. 6). In addition to being technically and economically feasible, the resettlement packages should be compatible with the cultural preferences of the displaced persons, and prepared in consultation with them.

Site selection, site preparation, and relocation. Alternative relocation sites considered and explanation of those selected, covering

a. institutional and technical arrangements for identifying and preparing relocation sites, whether rural or urban, for which a combination of productive potential, locational advantages, and other factors is at least comparable to the advantages of the old sites, with an estimate of the time needed to acquire and transfer land and ancillary resources;
b. any measures necessary to prevent land speculation or influx of ineligible persons at the selected sites;
c. procedures for physical relocation under the project, including timetables for site preparation and transfer; and
d. Legal arrangements for regularizing tenure and transferring titles to resettles.

Housing, infrastructure, and social services. Plans to provide (or to finance resettlers' provision of) housing, infrastructure (e.g., water supply, feeder roads), and social services (e.g., schools, health services);plans to ensure comparable services to host populations; any necessary site development, engineering, and architectural designs for these facilities.

Environmental protection and management. A description of the boundaries of the relocation area; and an assessment of the environmental impacts of the proposed resettlement and measures to mitigate and manage these impacts (coordinated as appropriate with the environmental assessment of the main investment requiring the resettlement).

Community participation. Involvement of re-settlers and host communities,

a. a description of the strategy for consultation with and participation of re-settlers and hosts in the design and implementation of the resettlement activities;
b. a summary of the views expressed and how these views were taken into account in preparing the resettlement plan;

c. a review of the resettlement alternatives presented and the choices made by displaced persons regarding options available to them, including choices related to forms of compensation and resettlement assistance, to relocation of individuals as families or as parts of pre-existing communities or kinship groups, to sustaining existing patterns of group organization, and to retaining access to cultural property (e.g. places of worship, pilgrimage centers, cemeteries);**5** and

d. Institutionalized arrangements by which displaced people can communicate their concerns to project authorities throughout planning and implementation, and measures to ensure that such vulnerable groups as indigenous people, ethnic minorities, the landless, and women are adequately represented.

Integration with host populations. Measures to mitigate the impact of resettlement on any host

1. consultations with host communities and local governments;
2. arrangements for prompt tendering of any payment due the hosts for land or other assets provided to resettlers;
3. arrangements for addressing any conflict that may arise between resettlers and host communities; and
4. Any measures necessary to augment services (e.g., education, water, health, and production services) in host communities to make them at least comparable to services available to resettlers.

Grievance procedures. Affordable and accessible procedures for third-party settlement of disputes arising from resettlement; such grievance mechanisms should take into account the availability of judicial recourse and community and traditional dispute settlement mechanisms.

Organizational responsibilities. The organizational framework for implementing resettlement, including identification of agencies responsible for delivery of resettlement measures and provision of services; arrangements to ensure appropriate coordination between agencies and jurisdictions involved in implementation; and any measures (including technical assistance) needed to strengthen the implementing agencies' capacity to design and carry out resettlement activities; provisions for the transfer to local authorities or resettlers themselves of responsibility for managing facilities and services provided under the project and for transferring other such responsibilities from the resettlement implementing agencies, when appropriate.

Implementation schedule. An implementation schedule covering all resettlement activities from preparation through implementation, including target dates for the achievement of expected benefits to resettlers and hosts and terminating the various forms of assistance. The schedule should indicate how the resettlement activities are linked to the implementation of the overall project.

Costs and budget. Tables showing itemized cost estimates for all resettlement activities, including allowances for inflation, population growth, and other contingencies; timetables for expenditures;

sources of funds; and arrangements for timely flow of funds, and funding for resettlement, if any, in areas outside the jurisdiction of the implementing agencies.

Monitoring and evaluation. Arrangements for monitoring of resettlement activities by the implementing agency, supplemented by independent monitors as considered appropriate by the Bank, to ensure complete and objective information; performance monitoring indicators to measure inputs, outputs, and outcomes for resettlement activities; involvement of the displaced persons in the monitoring process; evaluation of the impact of resettlement for a reasonable period after all resettlement and related development activities have been completed; using the results of resettlement monitoring to guide subsequent implementation.

Appendix M. CONTENTS OF AN ABBREVIATED LAND ACQUISITION AND RESETTLEMENT ACTION PLAN

1. *Description of the project:* General description of the project and identification of the project area
2. *Potential impacts:* Identification of (i) the sub-project component or activities requiring land acquisition, (ii) zone of impact of such components/activities
3. *Census of the Project Affected Persons (Project Affected People):* Results of the census and inventory of assets, including (i) a list of Project Affected People, distinguishing between those with land rights and those without, and (ii) an inventory of plots and structures affected.
4. *Legal Analysis:* Descriptions of legal steps to ensure the effective implementation of land acquisition under the sub-project, including, as appropriate, a process for recognizing claims to legal rights to land- including claims that derive from customary law and traditional usage
5. *Eligibility:* Identification of the Project Affected People who will be eligible for compensation and explanation of the criteria used to determine eligibility.
6. *Valuation of assets and calculation of compensation for losses:* A description of the procedures that will be followed to determine the form and amount of compensation to be offered to Project Affected People.
7. *Consultations with people who shall lose land and other assets:* A description of the activities carried out to (1) inform Project Affected People about the impacts of the project and the compensation procedures and options, and (2) give the Project Affected People opportunities to express their opinions
8. *Organizational responsibilities:* A brief description of the organizational framework for implementing land acquisition.
9. *Implementation schedule:* An implementation schedule covering land acquisition, including target dates for the delivery of compensation. The schedule should indicate how the land acquisition activities are linked to the implementation of the overall project.
10. *Costs and budget:* Cost estimates for land acquisition for the sub-project.
11. *Grievance procedure:* Affordable and accessible procedures for third-party settlement of disputes arising from land acquisition; such grievance mechanisms should take into account the availability of judicial recourse and community and traditional dispute settlement mechanisms.
12. *Monitoring:* Arrangements for monitoring land acquisition activities and the delivery of compensation to Project Affected People.

Appendix N. FEEDBACK FROM STAKEHOLDER CONSULTATION

Minutes of Public Consultation

Geothermal Resource Risk Mitigation ("GREM") Environmental and Social Management Framework

Location : Ayana Hotel

Date : 12 April 2018

Time : 08.20 – 12.00

Suggestion		Response	
Name/ Institution	**Content**	**Name/ Institution**	**Content**
Mr. Riki Ibrahim, President Director of PT Geo Dipa Energi (Persero) ("GDE")	Hopefully PT SMI can continue its role to cooperate with institutions that have the same goal, which is developing geothermal. This can be done with FGD, involving various stakeholders, including the government. It is therefore expected to involve KLHK, and possibly the subnational government.	Mr. Adi, PT SMI	We hope there will be other opportunities to carry out such discussion.
		Ms. Ida, Ministry of Energy and Mineral Resource ("MEMR")	I agree that KLHK and local government's inputs are necessary so hopefully this discussion do not stop until here.
		Ms. Farida, PT SMI	We have invited PDLUK KLHK, but they are not able to attend. However, we shall not be worried because this is the first public consultation. We expect all, including the private sector aware of the environmental and social aspects.
		Mr. Ilham, Ministry of Finance ("MoF")	In March there was a Joint Committee, which consists of MoF and MEMR. It is proposed that the committee will not only consist of these two ministries, Ministry of Environment and Forestry ("MoEF") involvement in it will be reviewed and

Suggestion		Response	
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			mapped.
	The government intends to reduce subsidies by substituting fossil energy into renewable energy, one of which is geothermal because geothermal produces very little CO_2. Geothermal energy development required less land area compared to conventional steam power plants for example. This geothermal energy is not mined, but extracted. For that, this activity should be able to be carried out in the nature preserve (*cagar alam*) as well. Hopefully, we wont apply rules which are too strict as they are applied abroad. In some countries the CDM program can be implemented, but in Indonesia it is still difficult. For that reason, environmental and social policies should be adapted to local wisdom, not to be all dictated by the World Bank. Geothermal exploitation is not the same as oil and gas, there is less risk. The success factor for geothermal wells drilled in Indonesia is higher. For that reason, we	Ms. Ida, MEMR	CDM is no longer available, however there is a new mechanism for renewable energy, B to B with Japan through JCM (Joint Credit Mechanism). The vocal points are in the Directorate of Energy Conservation. Funding can be obtained from this directorate.
		Ms. Farida, PT SMI	Related to environmental and social management, it is necessary to first see the scale of the project, then determine what measures are needed. Related to CDM, there is one geothermal project that successfully use CDM program, that is Lahendong field, PLN. Hopefully there will be a program like this again.
		Mr. Oriza, PT SMI	There should be an appropriate point of contact between Indonesian regulations, international standards, and local wisdom.

Suggestion		Response	
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	recommend that we do not equate all environmental criteria to all projects. For example Star Energy field in Salak is within the nature preserve, but it is still safe for the ecosystem there.		
	It is better to consider the development of insurance for geothermal development. With the insurance, the cost of risk can be reduced.	Mr. Ilham, MoF	This idea has been discussed with KfW, they have a scheme like this but still in the exploratory stage. Thank you for your feedback, this can be followed up. PT SMI can discuss with international institutions as well as SOEs in Indonesia.
	Perhaps a visit to GDE geothermal field in Dieng could be done. GDE operation is adjacent to a temple and potato farming community so at this site an on site application can be observed.	Ms. Farida, PT SMI	Will be followed up.
Ibu Ida, Kementerian ESDM	In the ESMF, the funding appears to be fragmentary: only exploration drilling is financed and it does not accommodate land acquisition or infrastructure development. It is recommended to consider FGDs that specifically invite developers. Today, only one (GDE) is present. It may be difficult for developers if funding is split up like that. If		

Suggestion		Response	
Name/ Institution	**Content**	**Name/ Institution**	**Content**
	the scheme would involve private developers, that they should also be invited.		
Rudi, GDE	We have been involved in the same process for 6 months, involving an assessment statement from ADB. I see that the framework is almost the same. When we received ADB requirements, what surprised us was the scope of work (SOW). The scope of work is for exploration drilling, but the assessment is done up to the utilization stage. We have yet develop plan for the utilization stage. The exploration stage is only for two years involving drilling in three wells and ground survey. The utilization plan will be developed for 11 wells with a utilization period of 30 years. We do not have data to do assessment of 30 years. This would then make meeting international lenders' requirement rather difficult. In the future we expect to be involved early on to build the risk assessment context in this scheme.		
Takwim,	We must be careful when adopting guidelines from		

Suggestion		Response	
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GDE	international lenders as they may lock and limit future geothermal projects. There are articles that tend to regard all infrastructure projects as the same. Indeed in the geothermal prospects, there is a critical habitat. But there are already proven mitigations. These articles have postponed some projects. These projects are regarded as second class project with a characteristics of being in a forest. However there are other bigger social issues that can be regarded as first class. Therefore, the GREM needs to be further reviewed so that the framework can be implemented as optimum as possible.		
	The duration of the implementation stage as mentioned in Law no. 21 Year 2014 does not seem to be taking into account the additional procedures that need to be done in the application of forest utilization permits, etc.		
Bapak Akbar, Telapak	Community should not just be seen as a stakeholder. Before it became a social issue, the community should be involved. People involved must be the right people.	Ms. Farida, PT SMI	This is where SMI plays a part in order to bridge between local practices and international standards.

Suggestion		Response	
Name/ Institution	**Content**	**Name/ Institution**	**Content**
	These people should be involved from the beginning, even though it may conflict with international standards.		
	If the environmental and social divisions exist under the production division, decisions would normally refer to production decisions. So if the framework is submitted to the developer, developers is suggested to separate the division from the production department.	Ms. Farida, PT SMI	The placement/positioning of environmental and social division depends on the type of industry, some are under HSE, some have their own departments. In the SMI, this division is independent, under DMR. We provide input for all project proposals to be financed by PT SMI
Bapak Suhadi, Schlumberger	Have these GREM funds been distributed to private developers? What is the coverage? Does it cover preliminary survey all the way through to exploration? It would be more appealing if it covers survey through to testing.	Mr. Adi, PT SMI	Within the GREM, survey is included. No disbursement to private developers.
		Mr. Ilham, PT SMI	GREM funding is from IBRD, PISP, GCF. It is expected to run as scheduled. The business models are being discussed. PT SMI & World Bank is also conducting intense discussions. On April 19th, there will be another discussion
	We are sometimes constrained by social issues. Perhaps later this social issues can be mapped out comprehensively. Project should be disseminated not only to the local population, but also to the local	Mr. Adi, PT SMI	SMI has been running the government sponsored drilling program. We are very concerned with the socialization. The first socialization was already done, second one is planned. We realize that socialization & community engagement are very

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	government.		important. Options for execution, including land acquisition, will also be disseminated to local communities.
Bapak Agus Riyanto, Sabang Geothermal Energy	We hope that SMI already has a comprehensive mitigation and assessment SOP because for exploration, from start to finish, there are many risks associated with the environment and social. SMI is expected to have people who are experts in the field. We agree that the role of SMI is not limited to exploration. Example: our potential is huge, but demand is small. The PLN has the idea to exploit all of these potential. However this would require underground cable. If SMI can get further beyond exploration, it would be better.		
	Selection of technology should consider environmental issues.		
	Law enforcement agencies should be included because the environmental issues will be directly related to		

Suggestion		Response	
Name/ Institution	**Content**	**Name/ Institution**	**Content**
	Indonesian regulations which have legal sanction		
Bapak Krisnan, World Bank	Questions for Mr. Ilham: Is there any mitigation efforts for environmental & social risks from the finance ministry? Questions from Ms. Ida: Related to conservation areas, are there any updates related to conservation level assessments, such as whether they are of high value or not In this assessment it may be slightly different between the Indonesian government and the banks.	Mr. Ilham, MoF	At the time of submission of an evaluation to access government drilling funds, one aspect that we require is an evaluation of risk one of which is the environmental and social risks. SMI has done that in its site, for example Wae Sano. SMI has conducted several public consultations to the community as well as the developing the required mitigation measures. With regard to impact on PNBP, I think it is a different matter. We cannot directly see what kind of transmission to life even though it is in terms of cost. I think this is a short term or long term. I think it is interesting to be studied as to what the impact is.
		Ms. Ida, MEMR	Environmental and social issues are very influential in the development proses. Longer development will affect the cost, which then affects the price of electricity. The time for steam and electricity production also retreats. This can also affect the PNBP. So, environmental and social factors are very important. I agree that we should involve them from the beginning. Related to conservation areas, for core zones, we cannot do

Suggestion		Response	
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			development. If the project area is in the utilization zone, we can do the project. The obstacle is KLHK will issue service fee for utilization to become PNBP KLHK. ESDM still objects its value. After discussion with developers, we submitted this to the Ministry of Finance. Fess to KLHK should be the same as IPPKH. Matters initiated KLHK can increase the price of electricity to 0.5 cent / kWH
	The document being prepared is ESMF from PT SMI, adopting international good practice. We will scrutinize this document. Which part may hamper development. Please help with the review of the document. Based on input from GDE, we will reduce the impact down to moderate.		
Ibu Ninin, World Bank	Maybe for those who have not been able to attend, they can review in detail ESMF documents that have been uploaded on the website. The ESMF is designed not to impede, but to minimize environmental and social risks, so that when there are issues, such as indigenous peoples, culturl		

Suggestion		Response	
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	sites, etc., we already know the mitigation measures. It is best to specify the deadline to provide input to PT SMI for this ESMF document.		