Environmental and Social Due Diligence (ESDD)

Project Number: 50330-001
March 2018

Proposed Loan
Rantau Dedap Geothermal Power Project (Phase 2)
(Republic of Indonesia)

Prepared by Mott MacDonald for PT Supreme Energy Rantau Dedap (PT SERD)

MOTT MACDONALD

Rantau Dedap Geothermal Power Project

Environmental and Social Due Diligence

9 March 2018

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Issue and Revision Record

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Contents

Executive summary

An environmental and social due diligence (ESDD) has been undertaken on the Rantau Dedap geothermal power project ("the Project"), which is located in South Sumatra Province, Indonesia. The Project is being developed by PT. Supreme Energy Rantau Dedap (SERD) ("the Sponsors"); the Sponsors are seeking finance from commercial banks, with Mizuho Bank, Ltd. (Mizuho) as the mandated lead arranger (MLA). International development banks and financial organisations, including the Asian Development Bank (ADB), Japan Bank for International Cooperation (JBIC) and Nippon Export and Investment Insurance (NEXI), are also financing the Project and are collectively referred to as "the Lenders".

The environmental and social standards of the Equator Principles, International Finance Corporation (IFC), ADB, NEXI and JBIC have been used to inform this report and are collectively termed the 'compliance framework'. Considering environmental and social performance of the Project against this compliance framework, a risk ranking of low, medium or high has been applied to each issue identified as presenting a compliance gap. Actions to reduce issues rated 'high risk' and 'medium risk' have been included in an environmental and social action plan (ESAP) within this report (see Section 4.2).

The Project has developed an environmental and social impact assessment (ESIA) and an environmental impact assessment (AMDAL) for local compliance. These documents were reviewed and supplemented by a site visit to verify initial assumptions. A summary of the issues considered of 'medium' or 'high' risk is provided below.

High risk – likelihood and impacts could have a material impact on the Project or its compliance status, actions are to be undertaken to manage risks prior to financial close

- Biodiversity
  - egMitigation measures to avoid and minimise adverse impacts on critical habitat trigger species have been identified in the Critical Habitat Assessment (CHA)/BAP. However, no targeted off-setting or monitoring measures were described in detail. The biodiversity offset strategy states that further information will be included as part of the biodiversity offset management plan (BOMP).

Medium risk – may result in non-conformance with the Project's compliance framework, and remedial actions with appropriate timescales are to be identified

- Associated Facilities
  - the environmental and social assessment relating to the transmission line developed by PT Perusahaan Listrik Negara (PLN), should be provided for review, when available.
  - SERD is to commit to positively influencing environmental and social outcomes, to the extent feasible, relating to on the development of the transmission line - in particular, for the 36 towers within SERD's designated Geothermal Working Area (*Wilayah Kerja Pertambangan* – WKP)
  - A detailed assessment of the land acquisition processes and risks for the transmission line has been undertaken as part of this ESDD and a separate social compliance audit report. While the regulatory framework being used by PLN will not result in a negotiated settlement outcome (due to the expropriation powers readily available to it), Mott MacDonald considers the processes it intends to use and the regulatory provisions will ensure that for acquisition outside of protection forest areas core concepts such as replacement value will be adhered to and is a solid basis for achieving outcomes consistent with the Applicable Standards. It is recommended that monitoring of this

process occur so SERD and Lenders have visibility of any cases that result in expropriation. Within the protection forest areas Mott MacDonald has noted that the regulatory framework used may result in some minor uncompensated livelihood impacts. Recommendations have been made for SERD to assess the extent of these impacts and determine whether assistance to affected households is required through its integrated social development plan (ISDP)

- Management programs
  - the engineering, procurement, and construction (EPC) and drilling contractors should provide environmental and social management plans (ESMP) which are aligned with the Project's compliance framework, prior to construction
- Monitoring
  - further details on environmental monitoring including the frequency of inspections, locations to be inspected and various environmental aspects considered parameters should be formalised prior to construction
- Organisational capacity
  - SERD should demonstrate sufficient on-site environmental, health and safety (EHS) capacity (both internally within SERD and for contractors) through an updated organisation chart prior to construction
- Air quality
  - the EPC and drilling contractor should develop protocols to monitor on-going compliance with H_2S emission standards for drilling and well-testing activities, prior to financial close
  - the emergency preparedness and response plan (EPRP) should be developed to include protocols to monitor and manage H_2S release, prior to drilling
- Water abstraction
  - the Project should ensure that water intake sources are located only at the main Cawang Tengah River to avoid over abstraction of minor tributaries currently being used by local communities as their primary water source
- Erosion and sedimentation
  - revegetation plan is to be revised to reflect clear responsibilities and timelines, as well as to align on-site restoration activities as described in the BAP, prior to construction
  - EPC contractor is to provide specific erosion and sedimentation plans, in particular for sensitive areas such as the reinjection pipeline (to well pad B), prior to earthworks
- Water quality
  - a wastewater management plan specific to the concrete batching plant area is to be developed, prior to construction of power plant
- Noise
  - further mitigation and assessment should be considered for traffic noise, prior to construction mobilisation
- Stakeholder engagement
  - a non-technical summary (NTS) (in both Bahasa Indonesia and English) should be produced and disclosed to affected communities, prior to financial close
- Workers accommodation
  - a workforce accommodation strategy is to be developed as part of an influx management plan, to be developed within one month of EPC and/or drilling contractor's NTP
- Non-employee workers

  - provisions are to be included in the EPC and drilling contracts to ensure compliance with World Bank Group (WBG) EHS guidelines, national labour laws and the relevant core labour standards are passed down the labour supply chain
  - provisions are to be included in the EPC and drilling contracts to manage child and forced labour risks throughout the supply chain
- Community health and safety
  - a community health, safety and environment plan (in addition to the EPRP) should be produced, within one month of the EPC contractor's NTP
- Stakeholder engagement
  - Revisions to the stakeholder engagement plan required to reflect current practices adopted by SERD and maximise the awareness and participation affected and vulnerable households
- Land acquisition
  - the Project should continually engage with PLN during the land acquisition process for the transmission line to determine land and non-land asset valuation outcomes, any grievances lodged, and status of any land acquisition which PLN expropriates
- Economic displacement
  - amendments (as detailed in the ESAP) are to be made to the integrated social development plan (ISDP) to secure compliance with IFC Performance Standards 5, prior to financial close
  - identification and assessment of households in the Protection Forest affected by land acquisition for the transmission line, with inclusion with the ISDP to be determined based upon level of un-compensated livelihood impacts
- Biodiversity
  - Stakeholder agreement is required that the biodiversity offset strategy is compliant with IFC Performance Standards 6 and a BOMP will need to be produced
  - the next step will include the preparation of a BOMP which will outline the delivery mechanism of the final agreed approach. Until this stage has been completed we consider this compliance action to still be ongoing.
  -

The above are considered material compliance issue. Hence, they have been carried forward and translated into actions with the ESAP (see Section 4.2). The ESAP should be reviewed and agreed between the Lenders and the Sponsor. These items will remain open issues until closed out by corresponding actions, with their status to be documented within the final issue of this ESDD.

1 Introduction

1.1 Overview

PT Supreme Energy Rantau Dedap (SERD) ("the Sponsors"), a company owned by Supreme Energy, Engie Energy Asia, and Marubeni Corporation, is developing the Rantau Dedap geothermal power project, with a design capacity of 92MW, located in South Sumatra Province, Republic of Indonesia ("the Project"). The Project's is proposed to be implemented in two phases, whereby Phase I constitutes the geothermal resource exploration phase, while steam field development and power plant construction will be taken up as part of Phase II.

The Sponsors are seeking finance for the construction and operation of the Project from commercial banks, with Mizuho Bank Ltd (Mizuho) as the mandated lead arranger (MLA). International development banks and financial organisations, including the Asian Development Bank (ADB), Japan Bank for International Cooperation (JBIC) and Nippon Export and Investment Insurance (NEXI), are also financing the Project and are collectively referred to as "the Lenders".

Mott MacDonald Limited has been engaged to undertake an environmental and social due diligence (ESDD) of the Project. This report presents the findings of the due diligence and aims to confirm the Project's compliance with the reference framework (see Section 2.2.1).

1.2 Definition of terms

For avoidance of doubt, the definitions of the following terms as used in this report are:

- Project – the Rantau Dedap geothermal power project (design capacity of 92MW), inclusive of both Phase I (ie exploration) and Phase II (ie exploitation), located in South Sumatra Province, Republic of Indonesia
- Phase I, or the 'exploration phase' – this covers the infrastructure works (eg roads, well pads, water intakes, supporting facilities) as well as the exploratory drilling activities, between 2013 and 2015.
- Phase II or the 'exploitation phase' – this covers the future activities (expected to commence in 2017, completing in 2020), which include drilling of production and reinjection wells, and construction of operational components (eg power plant)
- Existing Assets – the Project components constructed/completed during Phase I, and are existing as of March 2017 (see Table 1). This also includes any land acquisition conducted by the Project during Phase I.
- Associated Facilities – this refers to the proposed 39km transmission line (consisting of 116 towers) between the Project and the future Lumut Balai substation.

1.3 Objectives

The objectives of the ESDD review are to:

- Characterise the Project area of influence, including associated facilities, where environmental, social, health and safety impacts/risks could potentially occur.
- Evaluate the impacts/risks of Project actions from the perspective of the adequacy of the environmental and social assessment/management documents, and the completeness of such assessments, plans and procedures, including meaningful consultation with affected

people and establishment of a grievance redress mechanism at the time the completed/under construction actions were initiated.

- Provide an opinion on the Project's compliance with local/national laws and regulations, relevant international standards (ie compliance framework – see Section 2.2.1)
- Develop an environmental and social risks (ESAP), where non-compliance is identified, setting out actions that the Project needs to implement in order to achieve compliance

1.4 Project scope for the ESDD

The section defines the scope of the Project that is subject to the ESDD process and thus defines Mott MacDonald's understanding of the Project for which SERD are seeking financing from the Lenders.

The Project scope this ESDD covers is for both Phase I and Phase II. It therefore includes both existing and proposed assets; infrastructure (eg access roads, well pads), wells, supporting facilities (eg site office, warehouses) and associated power components (ie power plant and transmission).

The power plant of the Project is to be connected to the grid via a proposed 39km transmission line to the future Lumut Balai substation. The land acquisition and construction of the transmission line and substation is to be implemented by PT Perusahaan Listrik Negara (PLN). As per definitions within the Project's reference framework, the transmission line (but not the substation) is to be considered as an associated facility of the Project (see item 1.4 of Table 10). Hence, the transmission line will be covered as part of this ESDD scope.

1.5 Project description

The following subsections present a description of the Project's status, location and components. As mentioned above, the scope of this ESDD includes both existing and planned components of Phase I and Phase II.

1.5.1 Project status

Rantau Dedap Geothermal Working Area (known as a *Wilayah Kuasa Panas Bumi* – WKPB) was awarded in December 2010, with initial phases of the exploration programme commencing in 2011. This included a topographic survey and civil engineering assessments, with an initial heat loss survey, report and geoscientific interpretation of the WKP completed in February 2012. Following the approval of the Power Purchase Agreement (PPA – see below) and Business Viability Guarantee Letter (BVGL) in November 2012, PT Leighton Contractors Indonesian (LCI) was engaged as the civil contractor to develop access roads, well pads and a range of other facilities such as the administration and staff accommodation complex, yard and workshop areas, security posts and water supply and treatment facilities. Exploration drilling was then undertaken from March 2014 to February 2015 resulting in the development of six full diameter wells: B1, B2, C1, C2, I1 and I2.

At the completion of the exploration drilling programme, GeothermEx was engaged as the Lender's Resource Consultant to undertake a technical due diligence utilising data gathered during exploration. The report submitted in October 2015 applied numerical simulations and suggested that the western portion of the field could sustain an output level of 92 MW based on the use of dual flash technology.

SERD entered a PPA with PLN on 12 November 2012. As part of this PPA, PLN has the responsibility for construction of the transmission infrastructure for the Project which is a 39km 150kV transmission line to the Lumut Balai substation. Mott MacDonald understands that SERD

is presently in the process of re-negotiating aspects of the PPA with PLN, however this does not include changes to obligations regarding the transmission line.

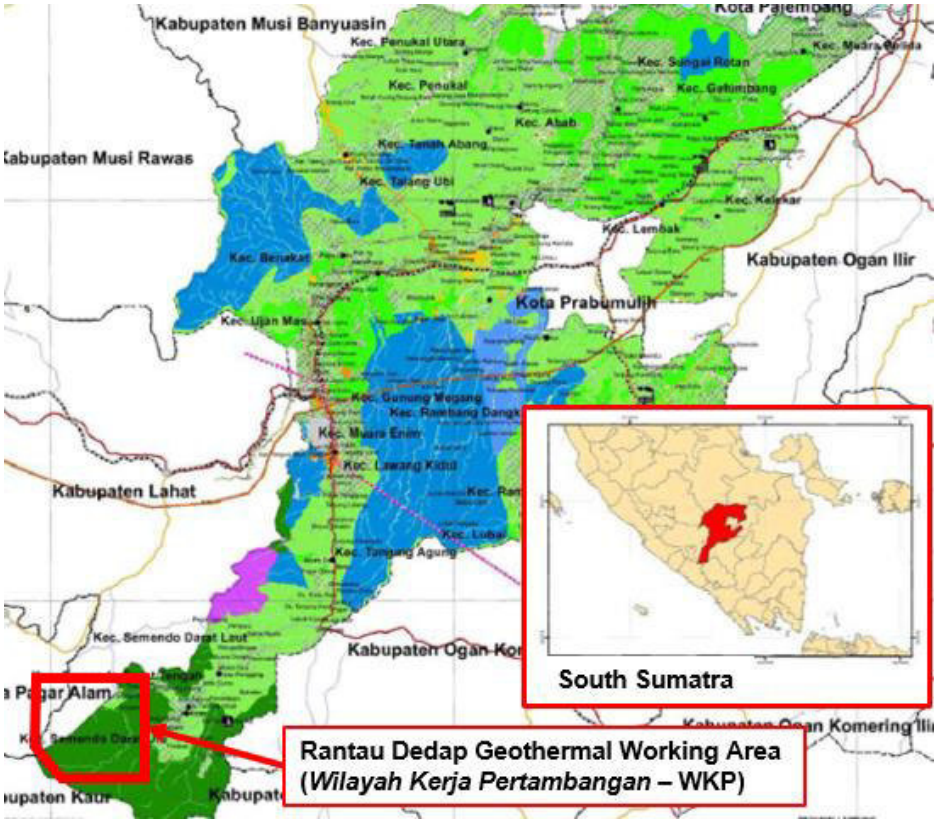
The Project intends to commence development drilling and power plant construction early 2018. Operations are scheduled to commence in 2020.

1.5.2 Project location

The Project is located approximately 225km to the southwest of Palembang across the administrative areas of Muara Enim Regency, Lahat Regency and Pagar Alam City in South Sumatra Province, Indonesia. The Project's location and layout are presented in Figure 1 and Figure 2, with the transmission line's indicative layout shown in Figure 3.

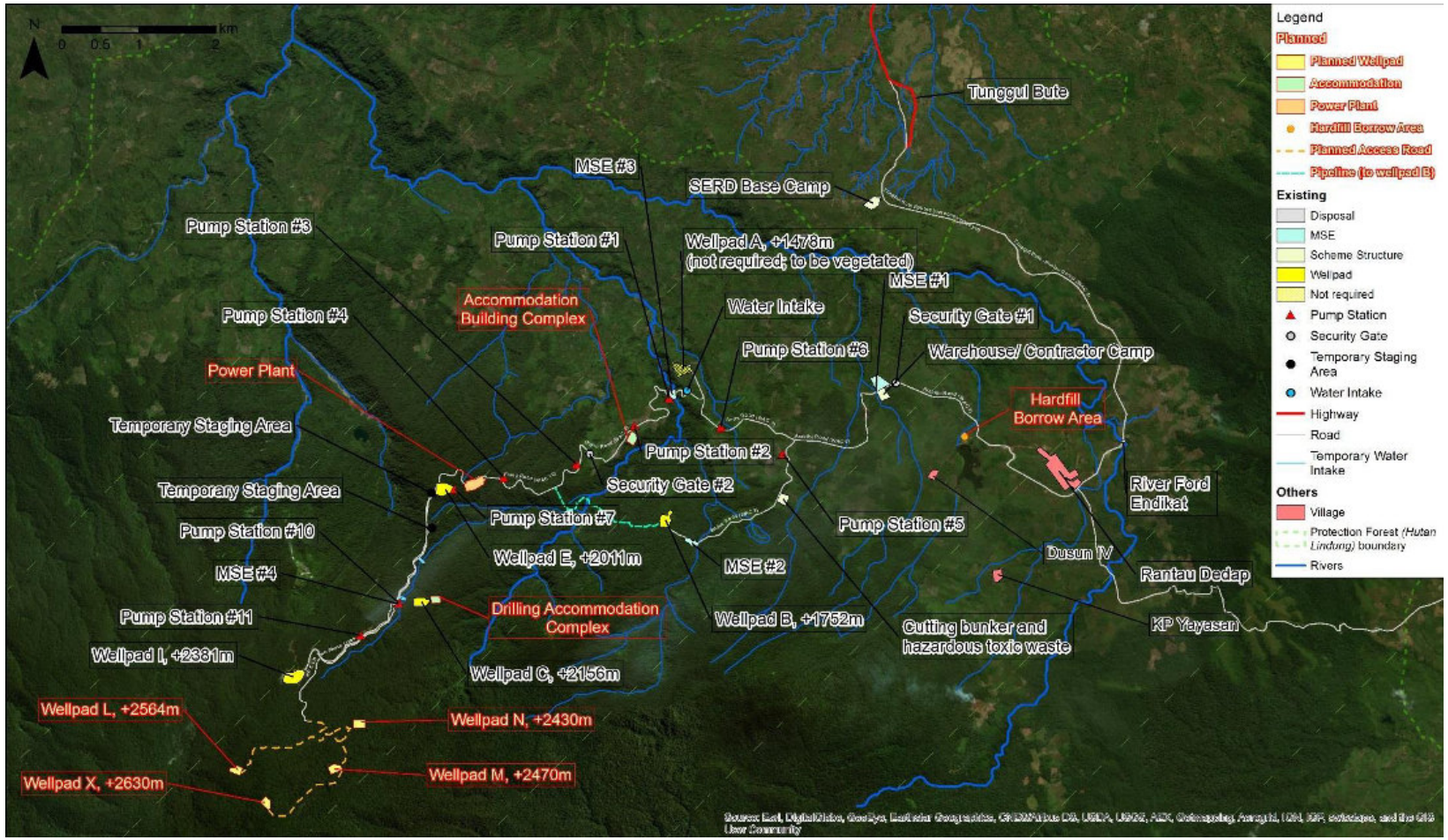
The Project is situated within the 353km^2 Rantau Dedap WKP, which is situated along the Great Sumatran Fault that runs parallel to the southwestern coast of Sumatra. Within the WKP, the Project covers an area of approximately 124km^2 in the Bukit Barisan mountain range at an altitude of between 1,500m and 2,600m above sea level. It covers privately held land (primarily coffee plantations) and protected forest which includes disturbed areas (again used primarily for coffee plantations) as well as areas of secondary forest.

Figure 1: Project location



Source: ESC, 2017

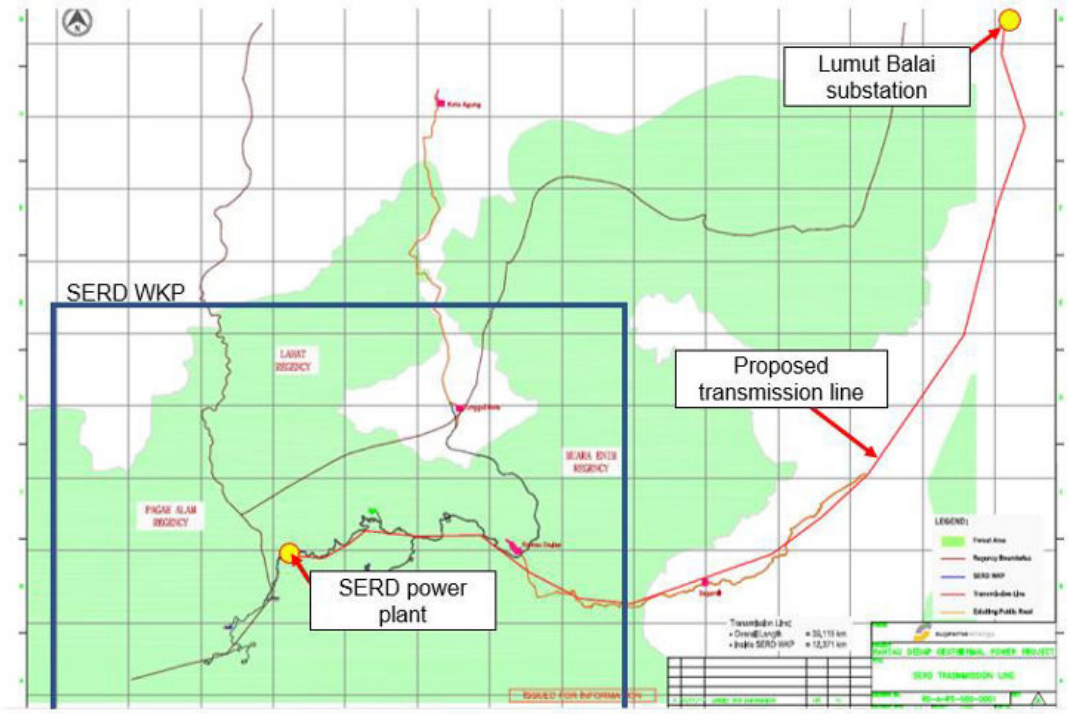
Figure 2: Project layout of existing and planned components



Note: "MSE" = Mechanically stabilised earth, which is used to refer to river crossings.
Source: Mott MacDonald, with information from SERD

The Project is located in a sparsely populated area, with only 5 villages. The total population is approximately 6,500 people. Most residents engage in agriculture as their primary livelihood.

Figure 3: Transmission line route



Source: SERD

1.5.3 Project participants

The Project participants are as follows:

- Sponsor – SERD
- MLA – Mizuho
- Lenders – Mizuho, ADB, JBIC and NEXI
- Owner's Engineering Services - PT Aecom Indonesia
- Development of the AMDAL[1], environmental and social impact assessment (ESIA) and associated documents - PT ESC
- Civil contractor for exploration phase - PT Leighton Contractors Indonesia (LCI)
- Drilling contractor for exploration phase - PT Daya Alam Tehnik Inti (DATI)

LCI commenced works for the Project on 1 January 2013 (ie after the Protection Forestry Area Permit was obtained in November 2012), with DATI carrying out drilling works between March 2014 to February 2015.

SERD issued an Invitation to Bid Enquiry Document on 2 June 2016 (SERD Tender No. 15000105-OQ-10103) for the engineering procurement and construction (EPC) contract for the construction of Phase II. Information provided by SERD during Mott MacDonald's site investigations stated that the selection process was ongoing.

[1] *Analisis Mengenai Dampak Lingkungan.* Indonesian local environmental impact assessment.

For the operations and maintenance (O&M) of the power plant, it is understood that this will be managed internally by SERD with personnel recruited from the energy industry (geothermal, thermal power generation as well as oil and gas industries) as required and trained by SERD. Only specific functions such as monitoring, inspection and facilities maintenance, well testing, geochemistry sampling and analysis, micro-gravity and levelling surveys will be outsourced to external contractors, as required.

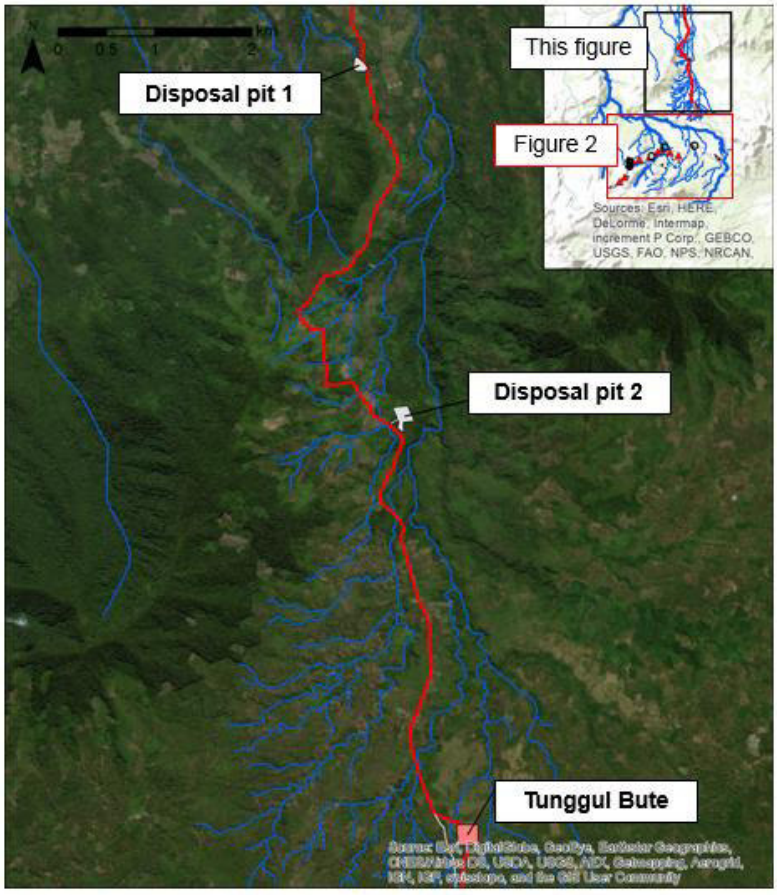
1.5.4 Project components and status

1.5.4.1 Existing assets

LCI (ie SERD's civil contractor) commenced civil and infrastructure works on 1 January 2013, which included road works (improvement and new construction), well pads, water intakes and supporting facilities. Exploration drilling took place between March 2014 and February 2015 whereby a total of six production wells (two each at well pads B, C and I) were drilled. Supporting facilities constructed during this period includes:

- SERD facilities at Talang Pisang (ie office and accommodation camp)
- Security posts
- Warehouse and accommodation camp (for drilling team)
- Temporary staging area
- Temporary hazardous waste storage area and explosive bunker (near well pad B)
- Two atmospheric flash tanks
- Two disposal pits north of the main working area (disposal pits 1 and 2) (see Figure 4) – used for temporary soil disposal and explosive storage bunker during Phase I, and staging area during Phase II

Figure 4: Location of disposal pits



Source: Mott MacDonald with inputs from SERD

In addition to the above works, land clearing was undertaken for well pad A (ie a 2.85ha area). The well pad has since been deemed to be no longer required for the Project. Re-vegetation had just commenced at this well pad.

The components summarised in Table 1 below, form the Existing Assets.

Table 1: Project components which are Existing Assets

Component	Description
Access roads	
Road improvement	Two sections of existing (public) roads: • Lahat to Kota Agung, • Kota Agung to Tunggul Bute
New road construction	Two sections of new Project roads: • Tunggul Bute to Rantau Dedap • Rantau Dedap to facilities area (eg warehouse, cutting bunker)
River crossings	Where the access roads cross over a major waterway (ie Cawang Tengah River and/or its tributaries), a river crossing, consisting of slope stabilisation (ie gabion wall) and flow diversion (ie culvert pipes), is constructed. These are named as “mechanically stabilised earth” (MSE). The four existing crossings are at: • MSE #1 - near the warehouse • MSE #2 - near (and leading to) well pad B

Component	Description
	• MSE #3 - near well pad A (ie crossing Cawah Tengah River) • MSE#4 – near well pad C
Well pads, wells and associated roads	
Well pad A	Previously cleared, but no longer required. Revegetation is in progress.
Well pad B	Reinjection well pad. Two wells (RD-B1 and RD-B2) drilled during exploration phase.
Well pad C	Production well pad. Two wells (RD-C1 and RD-C2) drilled during exploration phase.
Well pad E	Reinjection well pad (back-up wells). The area is also expected to hold the temporary and permanent components of Phase II (see Table 3).
Well pad I	Production well pad. Two wells (RD-I1 and RD-I2) drilled during the exploration phase.
Water intakes and associated works	
Water intake	There are currently four water intakes constructed. They were used to supply water for exploratory drilling during Phase I, and are expected to be utilised again for Phase II drilling. These water intakes are located at: • Water intake #1 - near the warehouse and MSE #1 • Water intake #2 - between well pad C and E • Water intake #3 - near well pad C • (Main) water intake – near well pad A on the main Cawang Tengah River
Pumping stations	Due to the elevation of the well pads relative to the water intakes, several pumping stations were required to be located intermittently between the intakes and well pads. There are currently eight such pumping stations, all located next to the Project's access road. Each pumping station consists of: • A pump • A fuel tank, to hold fuel for power generation • A break tank (ie water holding tank), approximately 15 x 3 x 3m dimension • Concrete foundation pads for each the components above.
Water pipelines	Water pipelines were laid between the water intakes and well pads (ie well pad B, C and I), during Phase I, for exploratory drilling. These pipelines will continue to be used for Phase II drilling, and removed upon completion (ie these pipelines are considered "temporary", and not part of the Project's operational design).
Other supporting facilities	
Project facilities	The following components were constructed during the exploration phase, and are expected to be utilised for Phase II's construction : • SERD base camp at Talang Pisang, which includes: – Site office – Accommodation camp – approximate capacity of 31 (ie only for SERD staff during Phase I) – currently only 7 SERD staff are based on-site • Security posts/gates (ie one at drilling contractor base camp, one prior to reaching well pad E) • Drilling contractor base camp (at entrance to main working area), approximately 2km northwest of Rantau Dedap, and includes awarehouse building
Phase I disposal pits	There are two existing "disposal pits" located north of Tunggul Bute (ie 5 and 9km respectively). These were used during Phase I earthworks and drilling activities. Despite the naming convention, only one disposal pit (ie Disposal pit 1) was used for soil disposal. The other "disposal pit" (ie Disposal pit 2) was used as an explosive bunker and temporary rock crushing area. The sites are expected to be used as staging area for Phase II works.
Other construction related facilities	Several areas or components had already been cleared, completed or mobilised, for construction purposes either for works during the exploration phase, or in preparation for the development phase. These are: • Well pad E (as described above – which covers proposed laydown and spoil disposal areas) • Temporary staging area (ie 500m south of well pad E) • Two atmospheric flash tanks, used during the exploration phase • Temporary hazardous waste storage area and explosive bunker (near well pad B)

Source: Mott MacDonald, based on information provided by SERD

1.5.4.2 Future assets

For Phase II, it is understood SERD intends to construct two new well pads (ie well pads L and M) and has identified two further well pad locations for contingency (well pads N and X). For the development phase, a total of fourteen production wells are to be drilled, with four further wells designated as contingency. The wells currently considered for the Project are as follows:

Table 2: Number of wells in the Project

Type of well	Existing	Proposed – Phase II	Proposed – Phase II contingency
Production wells	Four wells: • Well pad I (2 no.s) • Well pad C (2 no.s)	Twelve wells: • Well pad I (2 no.s) • Well pad L (5 no.s) • Well pad M (4 no.s) • Well pad C (1 no.s)	Three contingency wells at well pad N. No wells allocated currently for well pad X. It has been identified for future make-up wells (ie up to three wells, at 24 years after COD)
Brine injection wells	Well pad B (2 no.s)	One additional back-up [1] brine injector well at well pad E	One additional contingency well (brine/condensate) at well pad B
Condensate injection wells	-	One additional well at well pad E	
Total	6	14	4
	24		

Note: [1] This is a well confirmed to be drilled, as of current Project planning. The term "backup" here correlates more with operational procedures, whereby the well at well pad E will be used if injection cannot be carried out at well pad B.
Source: SERD

The power plant and separator station will be constructed at well pad E. Pipelines carrying steam, brine and condensate will also be laid between the production and reinjection wells, from/to the power plant. Most of these pipelines will be located along the access road connecting the well pads, with the exception of a 1.8km section of reinjection pipeline from the power plant to well pad B to be constructed across forest areas consider natural habitat[2]. Table 3 below summarises all of the Project components to be constructed in Phase II.

Table 3: Project components to be constructed in Phase II

Component	Description
Access roads	
N/A.	All Project access roads have been constructed.
Well pads, wells and associated roads	
Existing pads	
Well pad A	Previously cleared, but no longer required. Revegetation is in progress.
Well pad B	Two existing brine injection wells. One contingency well for brine injection.
Well pad C	Two existing production wells. One more production well to be drilled.
Well pad E	One additional back-up brine injector well to be drilled. This pad is also expected to hold: • Construction phase – Spoil disposal area – Laydown area – Concrete batching plant (ie temporary; for Phase II civil works) • Operation phase – Power plant (2 x 46 MW dual flash steam turbine)

[2] See Figure 3.3. Greencap. (2017). Rantau Dedap Geothermal Power Plant, Lahat Regency, Muara Enim Regency, Pagar Alam City, South Sumatra Province – Critical Habitat Assessment (November 2017) (Reference: 0383026 CH Assessment SERD). SERD.

Component	Description
	– Separator station – Office building
Well pad I	Two existing production wells. Two more production well to be drilled.
Phase II pads (access road and pad to be constructed)	
Well pad L	Five production wells to be drilled.
Well pad M	Four production wells to be drilled.
Well pad N	To be constructed only if contingency wells required. Possible drilling of three contingency wells for production.
Well pad X	Not planned to be included in the upcoming drilling. This is a future pad if make-up wells are deemed to be required.
Power plant and associated pipeline	
Power plant	Both of these will be constructed at well pad E.
Separator station	
Pipelines	Mostly alongside access road to well pads. Only a 1.8km section of the pipelines between the power plant and well pad B is not within the access road corridor, and will require additional clearing of areas classified as natural habitat.
Water intakes and associated works	
Water intake	No new water intakes have been planned. The existing water intakes (ie #1 to 3, and 'main') constructed during exploration drilling phase will be used.
Pumping stations	To be constructed as required to pump water to well pads located at higher sea-level elevations (ie well pad L, M, N and X). The components of these stations will be similar to the existing stations as described in Table 1.
Water pipelines	Temporary water pipelines to supply drilling water will be laid alongside roads, connecting the well pad to the nearest water intake.
Other supporting facilities	
Project facilities	All of the Project facilities as listed in Table 1 will continue to be used during Phase II construction.
Accommodations	For the construction stage, the following accommodation is required: • Drilling accommodation complex – for the drilling contractor; currently identified to be near well pad C • Accommodation for EPC's and sub-contractor's workers – an accommodation camp is likely to be required. However, the exact location and plan for this is yet to be developed For the operation stage, a permanent accommodation complex will be constructed. The location of this complex is currently identified to be at a location near to Security Gate #2.
Disposal pit 1 & 2	Used for soil disposal and explosive storage bunker during Phase I. Likely to be modified to be used as a staging area during Phase II.
Cutting bunker (for temporary storage of drilling cuttings)	These three construction phase components will be co-located on a land plot near well pad B.
Hazardous waste storage	
Explosive bunker	

Source: Mott MacDonald, based on information provided by SERD

In addition to the proposed works described in Table 3 above, reinstatement works are to be undertaken to reinstate areas that have been used or cleared during Phase I, but deemed to be no longer required for Phase II. These include the two disposal pits (see Table 1 and Figure 4) and well pad A.

1.5.4.3 Associated facilities

As previously noted, PLN is responsible for building the transmission line and its associated infrastructure; the interface between PLN and SERD's responsibilities is the power plant switchyard. PLN has indicatively identified the transmission line alignment as well as

transmission tower locations – 39km long with 116 towers. The transmission line will connect the Project to the proposed Lumut Balai substation which is approximately 25km northeast of the Project. The transmission line's sole purpose (although there might be other future connection possibilities) is to cater for the Project's connection to Lumut Balai substation to be constructed by PLN. Therefore, this transmission line is considered an 'associated facility' of Phase II of the Project. PLN will follow the requirements of Law No 2/2012 on Land Procurement for Development of Public Interest for land acquisition relating to the transmission line. Review of PLN's land acquisition process against the Project's Compliance Framework is detailed within this report (see section 3) with corresponding actions to address any gaps prescribed in the ESAP (see section 4).

However, it should be noted that the Lumut Balai substation itself is not considered an associated facility, given that it is required for the Lumut Balai geothermal power project, regardless of whether the Rantau Dedap Project is developed.

1.5.4.4 Project timeframe

Engineering, procurement and construction (EPC) and development drilling is scheduled to commence at the end of 2017. The Project's indicative timeline is as shown in Table 4 below.

Table 4: Project schedule for Phase II

Activity	Indicative period
Permits and agreements	2016/17
Financing	2018
EPC and development drilling	• Notice to proceed (NTP) – To be confirmed • Construction commencement – To be confirmed • Substantial completion date – February 2020
Commercial operation date (COD)	2020

Source: SERD

2 Approach

2.1 Overview

This section presents the approach to the environmental and social compliance review. Using information provided by the Sponsors supplemented with information gathered during a visit to the Project location and engagement with a variety of stakeholders, a review of the Project's compliance against national and international standards has been undertaken. The outcomes of the review has been used to inform the development of an Environmental and Social Action Plan (ESAP).

2.2 Approach

2.2.1 Compliance framework

The compliance framework developed for this review includes the environmental and social requirements of each of the Lenders. These have been applied to the review, in addition to the applicable national legislation, regulations and standards. Where applicable, Mott MacDonald's views on project categorisation are also provided.

The review is presented in tabular format against the following compliance framework:

- Indonesian legislation, regulations and standards
- Equator Principles III and the International Finance Corporation's (IFC) Sustainability Framework, comprised of:
  - Equator Principles III
  - IFC Performance Standards 2012
  - IFC General Environmental Health and Safety (EHS) Guidelines
  - IFC EHS Guidelines for Geothermal Power Generation
- Japan Bank for International Cooperation (JBIC) and Nippon Export and Investment Insurance (NEXI) Guidelines
- Asian Development Bank (ADB) Safeguards, comprised of:
  - Safeguard Requirements 1 to 3
  - Social Protection Strategy
  - Gender and Development Policy, Policy on Incorporation of Social Dimensions into ADB Operations and Public Communications Policy
- Relevant international standards and treaties

As listed within the Project's request for proposal (RfP), this report is also intended to comment on the Project's ability to meet the environmental requirements for several specific aspects. The commentary for these aspects is derived from the compliance framework described above. Table 5 below details the identified issues which are considered to pose significant impacts and presents the relevant sections where detailed commentary is provided.

Table 5: Commentary on Project ability to meet environmental requirements

No.	Aspect	Comments	Sections
1.	The capability of the project to meet emission and waste disposal targets	The Project's relevant prescriptive environmental standards are as detailed under the framework of IFC	Table 10: IFC Performance

No.	Aspect	Comments	Sections
		PS (with appropriate reference to WBG EHS Guidelines). Hence, the review of the Project's capacity with regard to achieving compliance and performance pertaining to these environmental aspects are as described within the IFC PS review table.	Standards and EHS Guidelines review - item 3.1 to 3.16
2.	The design and construction of the plant meets the environmental requirements		Table 10: IFC Performance Standards and EHS Guidelines review
3.	The potential increase in costs of construction due to environmental issues	Shortfalls of the Project's current environmental and social documentations and standards have been identified within this report. The corresponding actions required to close out these gaps are as presented within an action plan with their respective potential costs listed.	Table 15: Environmental and social action plan (ESAP)
4.	The potential increase in costs during the operating phase due to environmental issues.		

Source: Mott MacDonald

2.2.2 Risk ranking

A risk ranking of low, medium, or high has been applied to each identified issue utilising the criteria outlined in the below Table. The risk rankings applied are based on review of the Project utilising third party and existing data and an understanding of the potential impacts and sensitivity of the receiving environment derived from the three-day site visit. Risk rankings may alter if additional information becomes available.

Table 6: Risk Rankings

Category	Definition
Low	Based on analysis of the information reviewed and consultation with relevant stakeholders, Mott MacDonald is of the opinion that the risk: • When considered from the perspective of its likelihood and impacts should not have a material impact on the overall Project risk assessment • Has been allocated to an appropriate party • Is being managed according to what is regarded as good industry practice for financing projects • Requirements no specific actions prior to financial close
Medium	Based on analysis of the information reviewed and consultation with relevant stakeholders, Mott MacDonald is of the opinion that the risk: • When considered from the perspective of its likelihood and impacts could have a material impact of the Project risk assessment • May result in non-compliance with the compliance reference framework and is required to have additional documentation or allocation of responsibilities to reduce the risk to a "low" category status • Will need careful monitoring to confirm that any potential material impact on the Project risk assessment is being managed according to what is regarded as good industry practice for financing projects, and a monitoring action should be formally noted in the Project ESAP • Should have remedial actions with appropriate timescales for completion identified (but not necessarily completed prior to financial close)
High	Based on analysis of the information reviewed and consultation with relevant stakeholders, Mott MacDonald is of the opinion that the risk: • When considered from the perspective of its likelihood and impacts could have a material impact on the Project risk assessment • Is a non-compliance with the compliance reference framework and is required to have additional documentation, improved management measures or allocation of responsibilities to reduce the risk to a "low" or "medium" category status • If no measures are taken this will affect any identified critical paths and/or the robustness of the Project schedule or Project budget • May require actions to be taken to reduce the risk prior to financial close. Alternatively remedial actions with appropriate timescales for completion should be identified prior to financial close for completion at a later stage.

Source: Mott MacDonald 2017

The findings of the compliance review and the assessed risk ranking have been used to identify and prioritise required actions to ensure compliance with the compliance framework. These are summarised within the ESAP provided within Section 4.

2.2.3 Review overview

The approach to the review included a desk based review and a site visit to verify initial assumptions. Communication with SERD and clarifications and additional information sought through meetings with local village leaders, people affected by land acquisition and corporate social responsibility (CSR) beneficiaries have also informed the review.

2.2.3.1 Desk-based review

Key documents which have informed this review are:

- Phase I documents:
  - SERD - Initial Environmental Examination (IEE) (May 2014)
  - SERD - Social Safeguards Compliance Audit Report and Corrective Action Plan (April 2014)
  - ADB - Report and Recommendation of the President to the Board of Directors (June 2014)
  - SERD - Safeguard and Social Monitoring Report (ie bi-annual), for 1st semester 2015, 2nd semester 2015 and 1st semester 2016
  - SERD - UKL-UPL[3] reports (ie bi-annual), for 1st semester 2015, 2nd semester 2015, 1st semester 2016 and 2nd semester 2016
  - Mott MacDonald - Environmental Compliance Audit (ECA) (March 2017)
- Phase II documents:
  - SERD - Supreme Energy's Safety Health and Environment (SHE) Policy and Manual, including relevant task specific management plans
  - SERD - Progress Report on PLN's Lumut Balai Substation and SERD Transmission Line (August 2017)
  - SERD - Rantau Dedap Geothermal Power Project Staffing Management Plan (August 2017)
  - SERD - Rantau Dedap Stage 1 Development & EPC construction Surface Water Usage (September 2016)
  - EPC Contract for Rantau Dedap Geothermal Power Plant Project (uploaded 23 November 2017):
    - Attachment B-15: Schedule of Environmental Compliance Norms
    - Attachment B-16: Schedule of Safety, Health and Environmental (SHE) Requirements
  - Drilling contract - Exhibit G - Safety, Health and Environment (SHE) Requirements (uploaded 9 January 2017):
  - Environmental reports:

[3] *Upaya Pengelolaan Lingkungan Hidup dan Upaya Pemantauan Lingkungan Hidup.* Indonesian reduced scope local environmental management and monitoring plan.

- SERD - AMDAL: Geothermal Development for Rantau Dedap Geothermal Power Plant of 250 MW in Muara Enim Regency, Lahat Regency and Pagar Alam Municipality, South Sumatra Province (November 2016)
- SERD - RKL-RPL[4]
- ESC - Environmental and Social Impact Assessment: 250 MW Rantau Dedap Geothermal Power Plant (Phase 1 – 92MW) South Sumatra, Indonesia DRAFT FINAL (June 2017)
- AECOM - Air Dispersion Modelling (ADM) of Cooling Tower Plumes at Rantau Dedap Geothermal Power Plant (December 2016)

– Biodiversity studies:
- Greencap - Study of Endangered Species at Rantau Dedap (February 2015)
- Greencap - Biodiversity Action Plan (BAP), Interim report (November 2016)
- ERM - Critical Habitat Assessment (CHA) (November 2017)
- ERM – Incidental Fauna Survey at PT Supreme Energy Rantau Dedap South Sumatra Province (10 May to 14 May survey) (undated)
- ERM – Floral Survey in Project Area of PT Supreme Energy Rantau Dedap South Sumatra Province (2017)
- ERM – Biodiversity Offset Strategy (November 2017)
- SERD - Biodiversity Action Plan (November 2017)

– Social documents:
- SERD - Stakeholder Engagement Plan (December 2016)
- SERD - Grievance Log
- SERD/Inti Hexa Semesta - Provision of Integrated Social Development Program Study Services: Skill Development Plan and Livelihood Opportunities Development – referred to as SERD Integrated Social Development Plan (ISDP) (undated)
- SERD - Land Acquisition and Livelihood (LAL) Impact Monitoring Report Format (undated)
- SERD - Provision of Integrated Social Development Program Study Services: Final Report: Training Implementation (2016)
- SERD - Supreme Energy Rantau Dedap Public Consultation (meeting on 17/18 July 2017) (undated)
- SERD/Inti Hexa Semesta – Indigenous People Report: Provision of Socio Economic Evaluation & Monitoring Impact Analysis (undated)

2.2.4 Stakeholder engagement

The site visit was undertaken from 9 to 13 January 2017 and was attended by an environmental specialist, a social safeguards specialist and a biodiversity specialist from Mott MacDonald.

The following Supreme Energy/SERD personnel with responsibilities relating to social safeguards compliance matters facilitated the Mott MacDonald social safeguard specialist during the site visit and provided responses to questions before, during and after the site visit:

- Erwin Patrisa (Supreme Energy Head of Community Relations and Affairs)
- Ismoyo Argo (Supreme Energy Senior Manager of Business Relations)

[4] *Rencana Pengelolaan Lingkungan/Rencana Pemantauan Lingkunga.* Indonesian local environmental management and monitoring plan.

- Muhammad Goerillah Tan (SERD Community Relations Officer)

In addition, Muhammad Zaki, a social community specialist from PT ESC was also present and consulted with extensively during the site visit.

External stakeholders were consulted during the site visit. An overview of these stakeholders is provided in Table 3 below. An additional face to face meeting was held between Mott MacDonald and SERD in Jakarta on 24 March 2017 to seek clarification on outstanding matters.

Table 7: Stakeholder meetings

Date and time	Location	Participants
11 January 2017 3pm – 5pm	Site Office	• Erwin Partisa Floris – Head of Community Relations and Affairs, Supreme Energy • Ismoyo Argo – Senior Manager of Business Relations, Supreme Energy • Muhammad Goerillah Tan – Community Liaison Officer, SERD • Muhammad Zaki – Social and Community Consultant, PT ECS
12 January 2017 9am – 10am	Tunggul Bute Head of Village Office	• Pak Jutawan – Head of Village (HoV) Tunggul Bute
12 January 2017 9am – 10am	Tunggul Bute Head of Village Office	• Tunggul Bute Women's Organisation (CSR Beneficiary)
12 January 2017 10.30am – 11.30am	Ibu Sonah's House – Tunggul Bute	• Ibu Sonah – Head of Household (Elderly, widowed) which had land acquired for Phase I
12 January 2017 11.30am – 12.30pm	Site Office – Tunggul Bute	• Pak H Tawil - Head of Household which had land acquired for Phase I • Pak Ardiansih - SERD Employee and Head of Household which had land acquired for Phase I • Pak Dirman – SERD Employee and Head of Household which had land acquired for Phase I • Pak Prayitno – Mosque Representative (CSR Beneficiary)
12 January 2017 2.00pm – 3.30pm	Head of Sub-Village House (Dusun IV Yayasan)	• Pak Markun – Head of Sub Village Dusuan IV Yayasan • Tarmiz – Head of household with more than 50% of initial land holding acquired for Phase I • Icha – Midwife and Public Health Official for Segamit Village
12 January 2017 4.00pm – 5.00pm	Pak Kaluri's House – Dusun IV Yayasan	• Pak Kaluri – Head of household (Elderly) hich had land acquired for Phase I
13 January 2017 9.00am – 12.00pm	Transmission Line – Segamit Village and Project Area	• PLN Topographic Survey Personnel
13 January 2017 7.30pm – 9.00pm	Lahat Secretary of Regency House, Lahat	• Secretary of Regency, Pak Nasrun Aswari

Source: Mott MacDonald 2017

This document also integrates findings of field work that was undertaken by two Mott MacDonald social safeguards specialists between 2 and 8 January 2018. This trip was to facilitate completion of the social compliance audit report (SCAR) for Phase I of the Project as required by the ADB, and sought to understand the extent of additional activities undertaken by SERD between January 2017 and December 2017. Full details on the stakeholders consulted, methods used and schedule are provided within the SCAR, and include the following:

- Meeting with PLN South Sumatra Planning Division and Land Acquisition Division to discuss the TL status

- Detailed interviews with the four land owners involved in the 2017 SERD led land acquisition
- Brief interviews with approximately 13 land owners from Segamit Village involved in the initial phases of the TL land acquisition
- Focus group discussions (FGD's) with livelihood restoration beneficiaries in the villages of Tunggul Bute, Segamit and Rantau Dedap
- Discussion with Semendo customary ("adat") leaders
- Meeting with the Semendo Darat Ulu Sub-District Head and staff

The interviews with land owners affected by land acquisition followed a set interview schedule, with the FGD's facilitated using a series of prompt questions and key topic areas. These are also provided within the SCAR.

3 Environmental and social compliance review

3.1 Overview

This section presents the findings of the environmental and social compliance review against the compliance framework detailed in Section 2.2.1.

3.2 National requirements

Table 8 summarises the current status of the Project in relation to key national requirements.

Table 8: Compliance review – national requirements

National requirement	Project status	Compliance review	Risk ranking
Approved AMDAL	A UKL-UPL covering the initial design of the exploration drilling (ie Phase I – well pad B, C and C) was produced and approved in 2011. A subsequent addendum was also produced in 2014 covering the additional well pad I. A UKL-UPL is a limited scope AMDAL/EIA process. As per Law 32/2009, proposed projects categorised as having no significant impacts are only required to have a UKL-UPL. Minister of Environment Regulation 5/2012 states that geothermal projects in the exploration phase do not need to prepare AMDAL/EIA. The Environmental Permit (for exploration drilling) was obtained in August 2014, based on the UKL-UPL approval. For Phase II, a KA-ANDAL[5] (ie scoping report) was approved on 5 September 2016. Subsequently, an AMDAL was produced in November 2016, and subsequently submitted. The AMDAL approval and Environmental Permit were obtained on 15 March 2017. The Environmental Permit was provided for review, and shows that all well pads and wells (ie both existing and proposed) were included in its scope. In terms of the AMDAL (or the accordingly prescribed environmental assessment – eg UKL-UPL) for the transmission line from the Project to Lumut Balai substation, the responsibility for obtaining the relevant approval is under PLN's remit, as the "developer". As of report writing, the approval is yet to be obtained. The Sponsor is working in close collaboration with the relevant PLN entities, and will provide updates to lenders on the incremental progress towards drafting/ submission of relevant documents and subsequent approvals.	No compliance gaps	Low
Environmental permitting	The Project has obtained a Geothermal Licence (IPB) (or WKP), which is valid from December 2010 until December 2045. Current key permitting updates include: • The second extension of exploration period[6] is valid until December 2017. However, this permit is not required to be renewed, as SERD had already submitted the Project's feasibility study document on 22 November 2017[7] to the Ministry of Energy and Mineral Resources. This signifies that SERD had completed its exploration stage and is ready to enter the exploitation/production stage. • SERD has renewed its water abstraction and utilisation permit (SIPA[8]) in 17 May 2017 with two years validity. • SERD has renewed it Borrow and Use Permit of Forest Area (IPPKH[9]) (required for land use within the Protection Forest) was obtained on 22 September 2017. The current permit is valid till 28 December 2045. • The previous Forest Management Plan (FMP) (a requirement related to the IPPKH's approval conditions) for the previous IPPKH was valid from 2013 to 2017; a new FMP for the current IPPKH is understood to be under development. Full details of the status of permits applied for and received by the Project to date are provided in Appendix A, with no critical risks or gaps identified.	No compliance gaps, but outstanding actions to be closed out are presented	Low

[5] *Kerangka Acuan Analisis Dampak Lingkungan Hidup*. Indonesian local EIA scoping report.

[6] Directly translated from permit name, *Perpanjangan Kedua Jangka Waktu Eksplorasi*.

[7] As documented in SERD's correspondence ("Re: Completion of feasibility study document for the Rantau Dedap geothermal power plant project") to Ministry of Energy and Mineral Resources (ref: RD-MGT-LTR.075.XI.2017) issued 20 November 2017.

[8] *Surat Izin Pengambilan dan Pemanfaatan Air*. Indonesian water abstraction permit.

[9] *Izin Pinjam Pakai Kawasan Hutan. Indonesian* permit requirement for usage of land designated as *Hutan Lindung* (Protection Forest).

National requirement	Project status	Compliance review	Risk ranking
Spatial planning	Documented evidence of permissions and spatial planning maps from the various levels of government (eg national, provincial, district) had been provided for review. Appendix 5 of the AMDAL presents the land use/zoning maps as issued at the provincial and district levels. For national level land/area use permissions, examples include the Geothermal License (IPB) issued by the Ministry of Energy and Mineral Resources, which defines the permitted/designated geothermal working area with stated coordinates, as well as the Permit for Use of Forest Areas (IPPKH) issued by the Ministry of Environmental and Forestry. Further updates were also provided by the Sponsors whereby the new Spatial Planning Regulation of South Sumatera, among other things, had specifically included geothermal activity for Lahat regency and specifically for the Rantau Dedap project. There is no apparent discrepancy between the spatial plans of respective governmental tiers.	No compliance gaps	Low
Water abstraction	As noted above, SERD has recently obtained renewal of the SIPA for the Project. Within SERD's document[10], it is estimated that the daily water usage requirements during construction (for drilling, power plant construction as well as domestic use from rig and EPC camp) is about 3,551m^3/day. The current permit allows an abstraction volume of 162,000m^3 over 45 days (ie 3,600m^3/day). This is shown to be sufficient to meet the Project's needs (ie 3,551m^3/day).	No compliance gaps	Low
Existing compliance with ambient environmental standards	Bi-annual UKL-UPL monitoring reports are produced by SERD and copies provided to the Environment Agency and other relevant local government authorities. Similar to the initial UKL-UPL arrangement, two UKL-UPL monitoring reports are produced (ie one report for initial design of well pad B, C and E in one package, and one report for the additional well pad I). Monitoring for parameters such as noise, ambient air quality, surface water quality (at rivers), wastewater quality (at settling ponds) and soil quality, as well as flora and fauna surveys were carried out. No exceedances of local standards were noted. As the Phase I UKL-UPL was developed from 2015 to 2016, after most of the Phase I on-site works were completed, there is limited significance in demonstrating compliance of the Project's Phase I's activities. However, given that the on-going monitoring after Phase I works has shown compliance, any impacts have been temporary and mitigation can be assumed to be effective; Phase I activities did not result in permanent degradation of the environment.	No compliance gaps	Low
Predicted Project compliance with national ambient environmental standards	National ambient standards for air quality, odour, noise levels and water resources are defined in the EPC Contract (Part B-15, Schedule of Environmental Compliance Norms). The AMDAL assessed the potential of the Project to exceed the relevant ambient standards for environmental aspects. With the implementation of mitigation measures as defined in the AMDAL, it is assumed that the Project will comply with all ambient environmental standards. The AMDAL findings are considered to be robust for water quality, noise, erosion and soil quality, in relation to national requirements. Whilst there are gaps in the biodiversity studies when compared with international requirements, it is understood that the assessments have fulfilled national requirements.	No compliance gaps	Low

[10] Memorandum – Re: Rantau Dedap Stage 1 Development & EPC construction surface water usage, dated 19 September 2016.

National requirement	Project status	Compliance review	Risk ranking
Compliance with emission limits	Emission limits for air quality, odour, noise levels and water discharges are defined in the EPC Contract (Part B-15, Schedule of Environmental Compliance Norms). The AMDAL and a separate AECOM Air Dispersion Modelling (ADM) report[11] presents calculations of emissions of H_2S (the key consideration for air quality and odour) from production well testing and power plant operation and concludes that these will be below the applicable Indonesian standard of 35mg/Nm^3 [12]. The AMDAL concludes that noise levels associated with the Project will comply with the applicable Indonesian standard. Monitoring is also carried out at the water ponds at the well pads to ensure that any discharge or overflow will not cause affected water course to exceed ambient standards.	No compliance gaps	Low
Land acquisition and resettlement	The Project has acquired private land, as well as land within the Bukit Jambul Gunung Patah Protection Forest Area (hereafter referred to as the "Protection Forest") used for agricultural purposes by people with no formal title or land use rights. Despite this, all formal and informal land use rights holders and users were compensated in accordance with the following mechanisms: • Law 2/2012 on Land Procurement for Development of Public Interest and associated Presidential Regulation 71/2012 • Location Permit Mechanism outlined in Head of National Land Agency Regulation 2/1999 • Presidential Regulations 24/2012, 61/2012 and 105/2015 in relation to utilisation of Forestry Areas and granting of the borrow use permit ("*Izin Pinjam Pakau Kawasan Hutan*" – IPPKH) • Governor of South Sumatra 25/2009 relating to compensation for land, plants and assets • Copies of the final IPPKH (for aspects of the Project in the Protection Forest) and the Right to Build Certificate (Hak Guna Bangunan – HGB, for aspects of the Project on Private Land). The detailed Social Compliance Audit Report (SCAR) prepared by Mott MacDonald has concluded that all land acquisition undertaken by SERD has been undertaken in accordance with the relevant legal requirements.	No compliance gaps	Low
Compliance with labour legislation	The ESIA commits the project to complying with Indonesian labour laws, and Phase I has been subject to ongoing monitoring by the Department of Labour and Manpower. Monitoring reports have not been provided, however the most recent approved version of the Company Regulation (*Peraturan Perusahaan*) was provided for review. The ESIA states that contractor and subcontractor compliance will be monitored through SERD's audit system. An example of the contractor audit was provided for the security provider (PT Jaga Nusantara) and is considered to provide a suitable mechanism to monitor and enforce compliance.	No compliance gaps	Low
Indigenous Peoples	None of the land used by the Project to date has been identified as customary land. Interviews with stakeholders during the site visit indicate that there is no customary land (*Tanah Adat*) in the Project area and therefore no legal requirements in this regard.	No compliance gaps	Low

Source: Mott MacDonald 2017

[11] AECOM (August 2016). Dispersion Modelling of Cooling Tower Plumes at Rantau Dedap Geothermal Power Plant Air Dispersion Modelling (ADM) Report.

[12] At temperature 25°C and one atmosphere.

3.3 Equator Principles III and IFC Sustainability Framework

Table 1 summarises the status of the Project in relation to requirements of the EPs III (June 2013). Indonesia is an EP non-designated country and therefore under Principle 3 of the EPs the Project must demonstrate compliance with the IFC PS and applicable EHS Guidelines as well as relevant Indonesian requirements. Exhibit III of the EP provides further information on the IFC PS and EHS Guidelines that are applicable, which it collectively refers to as the "IFC Sustainability Framework". The review against EPs provided in this section is presented firstly against the ten principles in the EP Statement of Principles, followed by a compliance review against the IFC PS and relevant EHS Guidelines.

Ongoing actions for conformance with the EPs over the life-time of the Project construction and operational works as identified as part of this review have been incorporated into the ESAP (refer to Section 4).

Table 9: Equator Principles "Statement of Principles" review

Principle	Compliance review	Risk ranking
1: Review and categorisation	The Project is required to comply with the environmental and social requirements outlined in the EP Framework. The Project was assigned as category B during exploratory phase (ie impacts considered reversible if the Project does not proceed to exploitation stage). Following the review of all provided Project documentation as based on the Project's progression to exploitation stage, it is considered that the Project falls within the definition of "Category A", being a project with potential significant adverse environmental and social risks and/or impacts that are diverse, irreversible, or unprecedented. Key factors assessed in making this determination of Category A categorisation include: • The Project site is located within the nationally designated "Protection Forest" (*Hutan Lindung*). Although this designation is not considered the equivalent of Category I or II of the International Union for Conservation of Nature (IUCN) protected area management categories, the Project affects areas determined to be critical habitat (ie natural habitat, as well as presence of endangered and endemic species, see item 6.1 to 6.6 of Table 10). • The Project site is located within an area containing a number of sensitive environmental and socio-economic receptors and although the greatest potential sources of direct impacts (ie power plant and production well pads) are located more than 3km away from the nearest residential area, they are still a number of potential direct and indirect impacts which may be significant • Key environmental and socio-economic factors have been assessed and potential significant adverse impacts identified relating to air quality, erosion, noise, water quality, biodiversity, land acquisition and community health and safety. While appropriate management practices and offset measures have been identified to mitigate these impacts, the residual risk remains high in a number of cases Category A projects are required to produce an ESIA and specialist studies as required. The Project has developed an environmental and social impact assessment (ESIA), critical habitat Assessment (CHA), biodiversity action plan (BAP), air dispersion modelling report and an indigenous people report.	Low
2: Environmental and social assessment	An AMDAL has been undertaken for the Project: approval has been obtained from the Ministry of Environment and an Environmental Permit has also been issued. An ESIA has also been produced, which is intended to provide additional information and assessment beyond that presented in the AMDAL and thus meet international environmental and social requirements. Exhibit II of the Equator Principles presents an illustrative list of potential environmental and social issues to be addressed in environmental and social assessment documents. Mott MacDonald's review finds that the assessment within the ESIA is broadly suitable to meet EP requirements. More detailed review of the ESIA content is as covered within the IFC Performance Standards (see Section 3.4).	Low
3: Applicable environmental and social standards	The Project has been granted an Environmental Permit, demonstrating that environmental and social issues identified in the AMDAL have been assessed by the relevant Indonesian authorities to be compliant with national requirements. Indonesia is an EP non-designated country and the assessment therefore must demonstrate compliance with the IFC PS and applicable EHS Guidelines as well as relevant Indonesian requirements. Our review has identified a number of gaps in current documentation against these international requirements. These are summarised below. An ESAP has been developed to address these gaps. Conformance monitoring and reporting against the ESAP requirements will be required for the duration of the loan. The draft EPC Contract (Section 1 of Attachment B-15 Schedule of Environmental Compliance Norms) details the regulatory requirements which the contractor must adhere to (including ADB, JBIC/NEXI, IFC and Equator Principles); these are appropriate.	Low
4: Environmental and social management system (ESMS) and Equator Principles action plan	SERD has developed comprehensive, corporate-level Safety, Health and Environment (SHE) policies, manuals, training programmes and numerous environmental and social management procedures (contained within their Standard Operating Procedures, SOPs). Collectively these documents provide the Project's ESMS. In addition, the AMDAL and ESIA present the management and monitoring plans for the Project. The SOPs contain specific plans such as an emergency response plan, waste management plan and hydrogen sulphide Plan. SERD has produced an environmental and social management plan (ESMP) that includes a suite of management measures and plans to be implemented, to mitigate and monitor potential impacts throughout the exploration, construction and operation phases of the project.	Low

Principle	Compliance review	Risk ranking
	The ESMP captures all measures recommended within both the AMDAL and ESIA. The ESMP should be expanded to include any additional measures recommended in this report in order to bring it in line with the IFC PS.	
5: Stakeholder engagement	The Project appears to have gained broad community support through the land acquisition and exploration phases. Through various mechanisms, stakeholder engagement has been undertaken and grievances effectively addressed. SERD has developed a stakeholder engagement plan (dated December 2016) that includes a grievance mechanism for construction and operations. It also documents past and planned stakeholder engagement activities, stakeholder analysis and identification processes, responsibilities, and basic reporting procedures. Although considered suitable, Mott MacDonald has made a number of recommendations for improving the stakeholder engagement and grievance response processes to ensure that it meets all aspects of the compliance framework.	Medium
6: Grievance mechanism		Medium
7: Independent review	This report constitutes an independent environmental and social review.	Low
8: Covenants	This is a matter for Lenders to determine in negotiation with the Sponsor. For a project of this nature it is recommended that the following are covenanted in financing documentation as a minimum in support of the ESAP: • Comply with all relevant host country social and environmental laws, regulations and permits in all material respects • Comply with the ESMP and ESAP during the construction and operation of the Project in all material respects • Provide periodic reports in a format agreed with the Lenders proportionate to the severity of impacts, or as required by law, but not less than annually, prepared by in-house staff or third-party experts, that i) document compliance with the ESAP (where applicable) and ii) provide representation of compliance with relevant local, state and host country social and environmental laws, regulations, and permits • Decommission the facilities, where applicable and appropriate, in accordance with an agreed decommissioning, closure, and rehabilitation plan The IFC PS do not contain any additional requirements relating to covenants.	Low
9: Independent monitoring and reporting	The services of an Independent Environmental and Social consultant (ie currently Mott Macdonald) will need to be retained to monitor and report to Lenders on compliance with the ESAP. The Sponsor may need to retain the services of other external consultants to fulfil some of their monitoring and reporting obligations to the Lenders, such as the production of ongoing RKL-RPL monitoring reports and the bi-annual social and environmental monitoring reports which are presently being provided by SERD to the Asian Development Bank.	Low
10: Reporting and Transparency	This role will be fulfilled by the Lenders	Low

Source: Equator Principles III & Mott MacDonald 2017

3.4 IFC Performance Standards 2012 and IFC EHS Guidelines

A summary of compliance and associated risks related to the IFC PS is provided in Table 10. Table 10 only includes items that need to be addressed to comply with the compliance framework.

Mott MacDonald has also provided comment within this section regarding the Project's compliance with relevant IFC EHS Guidelines.

Table 10: IFC Performance Standards and EHS Guidelines review

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
Performance Standard One: Assessment and Management of Environmental and Social Risks and Impacts				
Requires an appropriate assessment of environmental and social (E&S) impacts to be made that includes consideration of E&S management aspects and sets out a clear mechanism for implementation of the findings of the assessment process. This should include free, prior and informed stakeholder engagement				
1.1	Environmental and Social Policy	A corporate-level Safety Health and Environment (SHE) policy and manual has been made available. This contains the overarching SHE framework for the Project and is supplemented by various SOPs for SHE aspects, such as H_2S response, confined space working and waste management. A Contractor SHE Management System (CSMS) and Guidance for Contractor SHE Management Plans have been developed. An SOP titled 'Project Execution Planning-Safety Health Environmental' summarises SHE requirements for contractors, in addition to the measures in the SHE Policy and CSMS.	No compliance gaps.	Low
Identification of Risks and Impacts				
1.2	Environmental and Social Impact Assessment	Various impact assessment documentation was produced for Phase I and Phase II, as detailed in Section 2.2.3.1. Local EIA requirements (ie UKL-UPL. KA-ANDAL, ANDAL and RKL-RPL) all obtained their respective approvals. For international Lender compliance, an IEE and ESIA were produced for Phases I and II respectively. A detailed review of the Phase I IEE was carried out through a compliance audit[13] of the Existing Assets. No major gaps were found on the assessment of the Project's Phase I activities. For Phase II's ESIA, the environmental aspects (eg air, noise, water quality) and potential impacts assessed are considered adequate in scope, although it should be noted that recommendations for improvement have been made (see respective items below). The categorisation of impact significance employed for the ESIA is considered insufficient. Within Section 8 of the ESIA, the determination of impact significance is characterised by factors such as magnitude, likelihood, and receptor sensitivity, However, there was no further elaboration on categorisation or matrices used, with Section 8.6 showing a table that simply summarises whether impacts are either positive or negative without any statement on level of significance (eg minor, moderate or major). Despite this, the various impacts identified are considered adequate.	While some aspects of the ESIA should potentially be expanded on or improved, the technical content of the ESIA is considered satisfactory to the requirements of the Project's compliance framework, as no assessment were deemed missing or requiring significant revision.	Low
1.3	Baseline data collection	Baseline data collection was carried out for the Phase II AMDAL. **Environment:** Environmental parameters measured include air quality, noise, surface water, groundwater, erosion, soil quality, terrestrial flora and fauna and aquatic biota. Monitoring locations include residential areas, well pads, upstream and downstream.	Baseline data collection for key environmental parameters has been undertaken at various locations throughout the Project area. The methods, frequency and duration of sampling generally appear appropriate to determine baseline	Low

[13] This audit was carried out by Mott MacDonald for ADB's compliance purpose, and is publicly disclosed. See: https://www.adb.org/projects/50330-001/main

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		The baseline monitoring approach for air quality meets the criteria set out in the IFC General EHS Guidelines, which state that either national or international methods can be used, sampling should be conducted by, or under the supervision of, trained individuals and analysis should be conducted by permitted or certified entities with quality assurance/quality control (QA/QC) plans applied. Baseline noise monitoring is undertaken with a sound level meter as specified in the General EHS Guidelines. SERDL's RKL-RPL monitoring is undertaken by a certified local consultant and is considered to meet the IFC requirements. **Biodiversity:** Similar to the environmental aspects, baseline and on-going monitoring is covered through surveys conducted as part of the AMDAL process. Additional surveys and monitoring were also conducted for the purpose of informing the various biodiversity studies associated with the ESIA and various management plans (eg CHA and BAP). Further commentary on the biodiversity aspects is as presented within PS6 of this table. **Social:** Socioeconomic baseline data was collected for the AMDAL. For the social baseline, both primary and secondary data sources were used. General socio-economic and demographic data were sourced from public and government database which provides disaggregation at the district (*kecematan)* or regency (*kabupaten)* level. Project specific primary data from surveys were conducted for the land acquisition activities and the implementation of the ISDP. In developing the ISDP, a socio-economic profile of affected people (ie members of the 153 households impacted by the land acquisition process) was established based upon primary data. The socio-economic profile presents details of all land holdings of the surveyed households, not just the parcel impacted by the land acquisition. This is considered an appropriate level of information to assess the true magnitude of livelihood impacts. Additional data has been collected for the additional four households affected by the acquisition for the amendments to the IPPKH in 2017.	conditions for the majority of environmental parameters. Further discussion on the baseline data of biodiversity and social aspects are elaborated on, as an integral of part of the respective aspect's commentary (ie PS5 and PS6 within this table).	
1.4	Associated Facilities[14]	As mentioned in Section 1.5.4.3, under the definition of IFC PS1, the 39km transmission line (ie 116 towers) between the Project's power plant and the future Lumut Balai substation is considered an associated facility. Although the transmission line is not funded as part of the Project, it would not have otherwise been constructed if the Project did not exist and the Project would not be viable without it.	SERD is to request for the environmental and social assessment conducted for the transmission line from PLN. This should be made available to the Lenders for review.	Medium

[14] IFC Performance Standards 2012 define associated facilities as "facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable".

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		At this stage, only limited information on the details and design of the transmission line is available (see Figure 3). The environmental and social impact assessment and management are not currently captured within the Project documentation. It is understood that SERD will have limited direct influence on such activities, especially for portions outside of their WKP. As described in IFC PS1, under such circumstances, SERD should aim to address risks and impacts (from transmission line activities) in a manner commensurate with their control and influence over the third parties (ie PLN), Accordingly, SERD should aim to collaborate with PLN based on their level of influence (ie within or outside the WKP). Preliminary recommendations include: • Within the WKPB (ie 36 towers) – where SERD has considerable influence: – Environmental: external positive intervention as appropriate (eg provision of silt fencing for at risk water bodies) – Biodiversity: identification (eg survey, walkover) of biodiversity values of proposed transmission towers footprint, and avoidance of cumulative impacts (eg habitat fragmentation or isolation) with tower footprint though adjustment in Project design – Social: as defined within the IFC PS5 assessment below • Entire transmission line (including towers outside of WKP) – where SERD has limited influence: – Biodiversity: High level screening of potential habitat loss, with such areas considered for biodiversity offsetting requirements – Social: Understanding of land acquisition information (eg number of affected household, process undertaken) to demonstrate that the process is reasonably aligned with international standards It should be noted that the Lumut Balai substation itself is not considered an associated facility as it primarily serves the Lumut Balai geothermal power plant.	SERD is also to work together with PLN to positively influence environmental and social outcomes, to the extent feasible, relating to activities associated with the construction, operation as well as land acquisition for the transmission line. It is noted that SERD issued a progress report in August 2017 after a site visit to PLN's site, which comments on the construction of the substation and transmission line. The report had reported on permitting matters (eg AMDAL approval). Although the report had not specifically covered environmental and social matters, it had indicated that SERD is engaging PLN and there is potential for collaboration.	
1.5	Analysis of Alternatives	The ESIA includes an analysis of alternatives comprising the 'No Project' option and alternative Project siting. The report concludes that the 'No Project' alternative would increase reliance on coal and thus fossil fuels. For siting at the macro-level, the ESIA mentions that site selection of the prospect area was based on engineering / geotechnical considerations (ie locations with a viable geothermal resource). The ESIA did not contain explicit references of siting decisions at the micro-level (eg well pads, access roads). However, there is evidence that some level of consideration was given based on E&S factors. This includes: • Shifting the proposed operational phase workers' accommodation from well pad E (ie next to the power plant) to near to the former well pad A. This reduces the clearance of forest habitat areas, as well as decreasing worker exposure to H_2S emissions from the power plant.	The ESIA's documentation of alternative analysis is limited. However, there does not appear to be material risk in this aspect, as the Project demonstrates reasonable E&S considerations during on-going decision-making. Attention should be given to avoid forest clearance at the alternate proposed location of the workers' accommodations.	Low

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		• Shifting of the Phase II explosive bunker and hazardous waste storage to near well pad B, rather than continuing to use disposal pit 2 which is in closer proximity to local communities • Extraction of water from major tributaries (or at Cawang Tengah River) through the existing Phase I water intakes instead of smaller tributaries to avoid localised over-abstraction Although the ESIA's documentation of alternative analysis is limited, there is sufficient demonstration that E&S impacts were considered during project planning, where feasible. For the revised (operational phase) workers' accommodations location, it should be noted that it is adjacent to the physical forest area. As the detailed design and layout of the facility has not yet been made available for review, attention should be given during its design and construction to avoid unnecessarily encroaching or clearing forest areas..		
1.6	Cumulative and/or Trans-boundary impacts	A section on cumulative impacts, referencing the procedures for Rapid Cumulative Impact Assessment (RCIA) from IFC[15], was included within the ESIA. The facilities included in this assessment are: • Future possible expansion of the Project from currently planned 92MW to 250MW • Pertamina Geothermal Energy (PGE) geothermal plant project, Lumut Balai Unit 1 to 4, located approximately 25km east of the Project. PGE's Lumut Balai project is located within a Protection Forest area which is physically contiguous with the forest that the Project is located in. This can be taken to imply that both projects may have cumulative impacts on the biodiversity and habitat values of the broader Tiger Conservation Landscape (TCL) (World Wildlife Fund, 2013)[16]. In spatial terms, as based on conservative estimates[17], the direct footprint of both geothermal projects could cumulatively result in a loss of 940ha of forest area. In temporal terms, 3.3ha of annual forest loss due to agricultural encroachment (as based on observed land cover changes between 2002 to 2015) was estimated within the Project's WKP. This could accumulate to 100ha of forest loss over the lifespan of both projects. No figures for the forest loss over time were available for the Lumut Balai WKP. The cumulative area of loss relative to the total forest area is not	Cumulative and trans-boundary impacts have been adequately assessed in the ESIA. The Project should consider conservation and offsetting measures at the TCL level, given its potential for cumulative impact with the Lumut Balai project.	Low

[15] IFC. (2013). *IFC Good Practice Handbook (GPH) – Cumulative Impact Assessment and Management*. Retrieved from IFC website: http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/learning+and+adapting/knowledge+products/publications/publications_handbook_cumulativeimpactassessment

[16] World Wildlife Fund (2013) *Tiger Landscape Data and Report*. Retrieved from WWF website: https://www.worldwildlife.org/publications/tiger-conservation-landscape-data-and-report

[17] Taking the average land usage figures of the Project's footprint (i.e. 1.35ha per MW), a conservative figure of 2ha per MW is assumed for PLN future masterplan of 470MW for the overall region (i.e. including PGE Lumut Balai, and the Project's future possible expansion to 250MW).

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		considered substantial, but based on the requirements of IFC PS6, the Project should seek to achieve measurable conservation outcomes on an appropriate geographical scale as its discrete management unit (ie the TCL in this context), such as within its BAP offsetting measures. The cumulative impacts associated with the transmission line are associated with livelihood impacts. During field work in January 2018 Mott MacDonald noted that three of the 14 households interviewed in relation to the land acquisition process for the transmission line had already experienced loss of land for the Phase I project footprint. The degree of cumulative impacts associated with this has been assessed through the PS5 assessment below. The ESIA states that "no transboundary impacts are expected". The greenhouse gas calculations provided support this statement.		
1.7	Decommissioning	The AMDAL has assessed 'post-operation' impacts and concluded that there will not be any significant impacts associated with decommissioning. The ESIA includes an ESMP for the decommissioning stage, however this does not make reference to the specific measures relating to decommissioning that are provided in the IFC General EHS Guidelines.	The decommissioning ESMP should be updated to include additional measures from the IFC EHS Guidelines.	Low
Environmental and Social Management and Monitoring Plans				
1.8	Emergency Preparedness and Response Plan	SERD has developed an Emergency Response Procedure[18] (ERP); this is designed to deal with events such as volcanic eruptions, earthquakes, major H_2S releases, fire, plant failure, explosions, chemical/fuel spills and bomb threats. In addition to specific measures to take in the event of each of these emergency situations, the ERP covers responsibilities, defines the role of the Emergency Response Team, staff evacuation procedures and training required. The ERP also includes specific references to the community with respect to the need to inform and evacuate local communities where necessary. Based on photographic evidence provided by SERD, the ERP was also socialised to various community members and staff. The ERP was also noted to include Project specific information such as names and phone numbers of key personnel at the site (although this will required updating prior to construction).	No major compliance gaps, but recommendations include: • Updating the Project specific information within the ERP as details becomes available • Document the on-going ERP socialisation efforts, as the Project progresses to construction • Coordination with the EPC and drilling contractor to adopt SERD's procedures, and/or align their plans with the existing documentation	Low
1.9	Management Systems, Monitoring, and Review	SERD has a well-established and comprehensive corporate ESMS in place. This is documented in the SHE Policy and Manual, SOPs and associated documentation. The corporate systems are considered appropriate to apply to the Project. The ESIA contains an ESMP that describes mitigation and monitoring measures for the Project during the exploration, construction, operation and decommissioning stages.	Further details of Project-specific ESMS activities should be documented and formalised including: • The frequency of site inspections • Locations to be inspected	Medium

[18] SERD Site Specific Emergency Response Plan. (ref.: RD-MSHE-EMP-PRO-0001) (rev A - undated)

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		RKL-RPL bi-annual monitoring reports are produced by a local university and copies are provided to the Environment Agency and other relevant local government departments. Bi-annual Safeguard and Social Monitoring Reports were developed for Phase I of the Project (ie exploration) and disclosed on the ADB website. The bi-annual reporting and disclosure is expected to continue for Phase II (ie exploitation) of the Project. Discussions with the Project's SHE team indicate that they undertake regular inspections of the Project site to identify any safety, health and environmental concerns however the frequency of these inspections are not defined in the Project's ESMP. Incident reports are filed by the SHE team when issues are identified; these contain recommendations to rectify the issue. It is recommended that this process is formally documented. The IFC EHS Guidelines contain specific measures to manage a range of different environmental and social issues; these are in some cases more detailed that the measures included in the RKL-RPL documents and should be integrated into the Project's ESMP. It is understood from discussions during the site visit that contractors are required to produce their own EMPs and that a Bridging Document is then prepared by SERD which documents the division of roles, responsibilities and accountability for implementing the required measures. At this stage, the Bridging Document is not yet available, this should be provided for review, prior to construction.	• Aspects considered (eg erosion/landslide risks, water level in mud and water ponds, H_2S monitoring)	
1.10	Organisation Capacity and Competency	SERD's EHS capacity is considered comprehensive for the current stage. The individual responsible for safety, health and environment (SHE) for the project is the SHE Manager who is based in Jakarta and is supported by a Safety and Health Engineer and two Environmental Engineers. This team is responsible for overseeing SHE at Supreme Energy's three geothermal sites in Sumatra: Muara Laboh, Rantau Dedap and Raja Basa. SHE at the Project site is overseen by the Site Support Manager (ie Mr Franky Tungka), who reports to the Rantau Dedap Project Manager and Senior SHE Manager based in Jakarta. During drilling and construction, additional SHE members will be allocated to the site to provide additional support. SHE organograms describing roles and reporting structure for the team in Jakarta and the Project team have been provided for our review; this information is also presented in the Project ESIA (ie Figure 2, page 20) and is reproduced in Appendix B. A detailed SHE organogram including the headcount or positions of additional SHE members allocated during drilling and construction has not been made available.	SERD is required to demonstrate sufficient on-site EHS organisation capacity (both internal and contractors) prior to construction.	Medium

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		At this stage, the EPC ESMP (detailing EHS capacity) and SERD final proposed EHS organisation (at site) during construction is not yet known, this should be clearly demonstrated prior to construction.		
1.11	Training	Training on E&S matters, health and safety, first aid and disease prevention is provided to all staff at a level appropriate to their job description. Copies of training logs have been provided and demonstrate the training delivered to individuals and the date on which training was completed. Training is delivered through a combination of videos, presentations, workshops and drills. All Project staff (whether office-based or on site) receive training on fire fighting. Training on malaria prevention is also provided.	No compliance gaps.	Low
Stakeholder Engagement				
1.12	Stakeholder Analysis and Engagement Planning	A Stakeholder Engagement Plan (SEP) was developed by SERD in December 2016 and documents stakeholder analysis and identification, planned stakeholder engagement activities based on short, medium and long-term planning timetables, responsibilities, grievance mechanism and reporting procedures. It also includes specific identification, analysis and methods related to the engagement of vulnerable people and women's organisations.	The reporting aspects of the SEP need to be revised to ensure that reporting is available to affected people (including vulnerable people and womens' groups) through appropriate methods.	Low
1.13	Consultation and Disclosure of Information	The ESIA and SEP detail the extensive consultation process that was undertaken by SERD since entering the area in 2008. While Table 60 of the ESIA notes the key issues raised during stakeholder engagement, (eg impacts during construction and operation, dust, noise and outside labour conflicts, and the possibility of cultural shift in society such as a change from agrarian to industrial community) insufficient information is contained within the ESIA describing how or where these have been addressed throughout the ESIA. This needs to be included within the ESIA and then form part of the ESIA disclosure activities. The SEP adequately defines vulnerable households impacted by the land acquisition process and defines measures to ensure that they participate in consultation and disclosure activities. The definition of vulnerable adopted for the Project was established within the 2014 SCAR and includes: • Households with incomes less than the Sumatra provincial rates for full term employment • Women headed households without any other earning members • Households headed by elderly • Households with disabled children . The SEP identifies womens' organisations as key stakeholders, however it should also expand the definition of vulnerable people to include not just affected people, but also vulnerable people residing within the villages and sub villages identified in the list of stakeholders (Table 20 of the SEP). A review of the SEP, the stakeholder engagement log and engagement with stakeholders during the ESDD process has identified a number of opportunities for improvement in documentation and implementation. This includes: • Ensuring that households directly affected by the land acquisition (affected households – AHs) are identified as a separate group within the SEP. This is	Section 9 of the ESIA should be updated to describe how stakeholder feedback received to date has been integrated in the Project design and impact assessment process, and the design and development of management, mitigation and monitoring measures. The SEP is to be updated to include: • Define Directly and Indirectly Project Affected People (DPAP and IPAP). For example, DPAPs should be defined as members of AHs. The DPAP will be beneficiaries for livelihood restoration programs under the ISDP. IPAPs (such as those people and households who live within the WKPB) will be beneficiaries of other CSR programs. • Update engagement methods and strategies for DPAP and IPAP in the ISDP and SEP to ensure that they are targeted for engaging through appropriate mechanisms. • Update the list of DPAP and IPAP given that there is additional land acquisition for worker accommodation and for	Low

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		important to ensure that their participation in livelihood restoration programmes (as discussed within PS5 below) is maximised. SERD has also increased participation of AHs within its livelihood restoration programmes through a directly targeted approach however this needs to be embodied within the SEP itself • The list of stakeholders needs to be updated to reflect the final Phase II project layout and new stakeholders who may have emerged – such as those impacted by the transmission line • The stakeholder engagement log needs to be updated to include details such as the stakeholder contact, responsibility for follow-up actions, deadlines for follow-up actions and confirmation of close-out actions • Adoption of communication channel other than a strong reliance on a single field representative. This can include methods such as written publications, social media and phone messaging/texting Notwithstanding the above, it is clear that through appropriate consultation and disclosure activities the Project is considered to have achieved broad-based community support and developed a mutually beneficial and supportive relationship with locally affected communities, government, and other stakeholders. All stakeholders interviewed noted the continual presence of the SERD Community Liaison Officers (CLO) in the area, described appreciation for the Corporate Social Responsibility (CSR) programmes implemented to date, and the smooth and transparent nature of the land acquisition process. Importantly, village and hamlet heads demonstrated a high awareness of the current Project status (essentially care and maintenance) which is indicative of a transparent and informative disclosure strategy by SERD	transmission line undertaken by SERD and PLN respectively. • Add other key items in the Stakeholder Engagement Log including: (i) Stakeholder contact; (ii) Suggestions; (iii) Responsibility for follow-up actions; (iv) Deadlines for follow-up action; and (iv) Confirmation of close-out. • Adopt other communication channels, such as written publications, social media, and phone texting.	
1.14	Non-Technical Summary (NTS)	An NTS of the ESIA or AMDAL has not yet been produced to disclose information about the Project's E&S impacts and management measures.	An NTS should be produced in Bahasa Indonesia and disclosed to affected communities prior to construction, especially in relation to construction phase E&S management and mitigation measures. It is noted that aspects relating to the disclosure of the environmental and social impact assessment results are already included within the SEP.	Medium
1.15	External Communications and Grievance Mechanisms (GM)	The Project has been operating a grievance mechanism (GM) since exploration activities commenced in 2011. This was disclosed during village level consultation in June 2012. Both the SCAR by SERD in 2014 and Mott MacDonald's site visit indicate a high level of awareness of the GM which the village heads and the temporarily stalled Community Committee (*Forum Desa)* have a key role in facilitating. The GM has not been disclosed further by placing it in community notice boards or providing flyers. SERD has noted it has not placed heavy reliance on written measures as utilising village heads and the CLO have been more effective. Recommendations were discussed with SERD during the January 2017 audit process to develop information cards for the CLO to distribute during any stakeholder meetings, detailing key contact points to lodge any grievances. As part of the January 2018 site visit it	SERD has had in place a robust grievance mechanism. It is recommended that ongoing focus be given to ensuring that all grievances are entered within a regularly maintained grievance log	Low

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		was noted that SERD had developed these cards and was distributing them throughout the community. The review of SERD's grievance log showed a total of five grievances and none since 2014. All of these grievances were related to the land acquisition process and have been appropriately logged and closed out by SERD. The lack of recent major grievances (none reported since April 2014) is suggestive of a project that is performing well in terms of managing community relations and adverse social impacts (refer to the 2017 SCA by Mott MacDonald). During discussions with SERD, it was noted that small grievances that were able to be immediately resolved (eg blocked drainage line on a SERD road) or were eventually not classed as grievances (ie one instance where community members complained about water quality, which was not related to Project activities) were not being logged. SERD has made a commitment to log all grievances received in the future to enable accurate reporting and identification of any trends which may require rectifying. It is noted that SERD is in the process of securing additional CLO resources to support the single existing CLO on-site, which will be beneficial in ensuring the administrative and record keeping aspects of external communications and the grievance mechanism are properly implemented. The December 2016 SEP details the grievance mechanism that will be implemented for the Project moving forward. This mechanism is considered consistent with IFC PS1.		
1.16	Ongoing Reporting to Affected Communities	The SEP describes stakeholder engagement activities to be undertaken, which includes regular, monthly, quarterly, and annual actions. Reporting is stated to be disseminated through public domain documents, websites, and local media. However, Section 13 of the SEP (Reporting) does not specifically describe the frequency which reporting will be undertaken, however it does commit to continuous reporting. The SEP describes a Community Committee (*Forum Desa*) which has a key role coordinating and facilitating communications between the Project and key stakeholders in the Project area. The *Forum Desa* was formally established and met regularly during the exploration phase of the Project during 2013 and 2015. At the conclusion of exploration, and when the Project entered a low intensity care and maintenance phase, SERD provided formal notification to members of the *Forum Desa* that this was being temporarily disbanded. In this period, SERD has relied on the acivities of its Community Liaison officers to communicate the Project activities to affected communities. This approach is considered appropriate however SERD must seek to re-convene the *Forum Desa* prior to Phase II commencing. SERD has stated that it intends to commence selection of new members of the Forum Desa during January and February 2018 with a view to reconvening it prior to construction commencing.	The SEP to be revised to describe: • appropriate outreach methods to make reporting available to affected people (including vulnerable people and womens' groups) • a specific reporting frequency • Project milestones which will lead to reformation of the *Forum Desa* (eg Final Investment Decision) • Recommendations arising from the detailed assessment of the project against PS5 (see below)	Low
Performance Standard Two: Labour and Working Conditions				
Recognises that the pursuit of economic growth through employment creation and income generation should be accompanied by protection of fundamental rights of workers				
2.1	Human Resources (HR) Policies and Procedures	At the time of the site visit by Mott MacDonald, a total of 82 people were engaged in various roles on site. This included seven SERD employees (2 HSE officers, 1 CLO, and 4 project development personnel) and 75 contract staff which are primarily local people (defined as living within the boundaries of the WKP) performing such roles as	No compliance gaps have been identified in relation to SERD's HR policies and Procedures. However, SERD must undertake the following:	Low

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		drivers, security guards, caterers and site support. The ESIA describes a peak construction workforce of 2,110, and 200 during the operations phase. These numbers are not disaggregated by employer (ie SERD or contractors). Indonesian regulations require private companies to have a set of company regulations which is submitted to and approved by the Ministry of Manpower. The approved Company Regulation was provided by SERD for review and forms the basis of their HR policies and procedures. This document is supplemented by a Safety Health and Environment (SHE) Policy and Manual, a Code of Conduct (containing provisions relating to business principles and human rights and workplace principles) and an Employee Grievance Policy and Procedure. This suite of documents appears to contain the main requisite provisions of PS2. Given procurement of an EPC and drilling contractors had not been finalised at the time of this review HR Policies were not available for review. Mott MacDonald notes that any selected EPC contractor will be subject to the same regulatory compliance requirements as SERD.	• require the selected EPC and drilling contractors to provide the HR policies and procedures for review to confirm compliance with PS2 • ensure compliance requirements for all IFC PS2 items are applied to the EPC contractor, with compliance verified throughout construction via monitoring activities and corrective action measures as necessary.	
2.2	Working Conditions and terms of Employment	Monitoring of SERD's compliance with national labour laws is undertaken by the Ministry of Energy and Mineral Resources and no non-compliances have been identified to date. The Company Regulation (*Peraturan Perusahaan* – SERD) has been approved by the Ministry of Manpower and Transmigration. SERD's annual reports sent to the Ministry of Manpower and Transmigration have provided for review and do not indicate any regulatory non-compliances. The ESIA states that any migrant workers engaged by SERD or the EPC and drilling contractors will be done so on substantially equivalent terms and conditions to local workers with similar experience and skills and carrying out similar activities. During the site visit, activities were minimal and a dedicated labour audit was not undertaken. There have been no reported non-compliances with national labour laws or industrial action which would be indicative of poor labour management practices. Samples of the labour contracts provided by SERD were reviewed and are considered consistent with national laws.	No compliance gaps have been identified at this stage	Low
2.3	Workers Accommodation	The site accommodation currently provides 20 beds and is considered good quality and in compliance with Good International Industry Practice (GIIP). Section 3.26.5 of Attachment B-16 of the EPC Contract "Schedule of Safety, Health and Environmental SHE) Requirements" has specific provisions relating to workers accommodation. Relevant aspects include: • The worker's accommodation provided by the EPC contractor shall meet national legislation, IFC PS2 and the guidance within the European Bank for Reconstruction and Development (EBRD) Workers Accommodation Guidance • All contractors and subcontractors are to assess whether accommodation for workers is required, and if it can be provided within existing local communities. The likely impact on local communities, the housing market and local utilities is required to be assessed • SERD has reserved the right to review compliance with national legislation, IFC PS2 and the EBRD Guidance	SERD to provide a workforce accommodation strategy which details capacity and location of onsite accommodation, the numbers of workers who are proposed to be housed in the local community as part of an Influx Management Plan (refer to IFC PS4 below). This is to identify potential locations for the EPC Contractors camp.	Medium

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		SERD has also provided an outline of a generic construction workers Accommodation management plan which Supreme Energy utilises on its Projects throughout Indonesia as a base to prepare detailed and Project specific plans. These provisions provide adequate protection for SERD in complying with IFC PS2 as it relates to the quality of the workforce accommodation. At the moment, the ESIA and other associated documents do not provide sufficient details of the capacity and standards of the proposed workers accommodation (Section 4.2.17 of the ESIA states that "A roadside warehouse and accommodation complex will be developed for EPC workers"), or an overall strategy for accommodating the workforce having regards for the outcomes of the IFC PS4 assessment (see below). Mott MacDonald notes that SERD is proposing to construct its own permanent accommodation and the drillers accommodation camp within the gated and secure section of the Project footprint in the Protection Forest area. This will provide a high degree of separation between the workers accommodation and the local community. However, it is not known where the main EPC contractors accommodation camp is to be situated.		
2.4	Workers Organisations	SERD have stated that its staff are not subject to any collective bargaining agreements and that there is presently no worker's association. Formation of workers associations is not prohibited by any laws or any part of SERD's HR policies and procedures. The Company Regulation specifically provide that it can be changed into a Collective Bargaining Agreement (Perjanjian Kerja Bersama) subject to agreement being reached between a Workers Union and SERD. Unionisation is protected under Indonesian law.	No compliance gap	Low
2.5	Non-Discrimination and Equal Opportunity	Non-discrimination, diversity and non-harassment aspects are covered within Section 5.2 of Supreme Energy's Code of Conduct. The Company Regulation provides for maternity leave and flexible working arrangements as required and agreed to with the company.	No compliance gaps	Low
2.6	Retrenchment	SERD has made a commitment within the ESIA to prepare a retrenchment plan as part of any future decommissioning planning.	No compliance gaps	Low
2.7	Labour Grievance Mechanism	SERD has an Employee Grievance Policy and Procedure which has been reviewed and is considered consistent with the requirements of PS2. Neither the ESIA or any aspects of the EPC contractual provisions reviewed by Mott MacDonald states that contractors and sub-contractors are expected to implement a labour grievance mechanism consistent with Indonesian laws and IFC PS2.	SERD to include provisions within the EPC contract requiring the implementation of a labour grievance mechanism consistent with IFC PS2	Low
2.8	Child Labour	Employment of children under 18 is prohibited by Indonesian Law 20/1999 and Law 1/2000. SERD has committed to complying with these requirements. The ESIA notes that SERD may, from time to time, offer certain types of work to children (such as internships or training) but only in a manner that is both legal and safe. There are no provisions within any of the reviewed HR Procedures and Policies which state under what circumstances such employment would be considered or how it would be managed by HR personnel.	HR Procedures and Policies to be amended to either explicitly prohibit child labour, or to include procedures and measures relating to how any child labour would be carried out in a manner compliant with Indonesia laws and IFC PS2.	Low

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
2.9	Non-Employee Workers and Engaged by Third Parties	The ESIA states that workers contracted through outsourcing and contractors will be bound by employment agreements that provide terms of employment and the rights and obligations of both parties except in matters such as annual leave, annual leave cost assistance and severance pay. Based on a review of the EPC contract, there are no compliance requirements to safeguard, monitor, address and report on labour compliance issues related to sub-contractor non-employee/third party workers.	SERD to include provisions in the EPC contract to ensure that compliance requirements are passed down the labour supply chain to safeguard all construction workers on the Project.	Medium
2.10	Occupational Health and Safety	SERD have in place an extensive SHE Policy and Manual. It also maintains a mandatory training register. The policy and training programme are considered appropriate to effectively managing occupational health and safety risks for SERD employees. Attachment B-16 of the EPC contract provides a comprehensive overview of the safety, health and environmental requirements. This also requires the preparation of a Project specific SHE Plan which satisfies SERD requirements, applicable national laws and regulations and industry best practice. This document has not yet been prepared as the EPC and drilling contractors is yet to be appointed.	No compliance gaps identified at this stage	Low
2.11	Supply Chain	The ESIA commits SERD to inquire about and address child labour and forced labour in its supply chain through a combination of policies and procedures, managing suppliers and sub-contractors on a risk based approach, supplier labour standards commitment letter, labour standards clauses and auditing. None of these provisions have been noted within any of the documents provided for review during the ESDD. Mott MacDonald observed aspects of the potential supply chain (in particular, informal river gravel/rock quarry workers) which exhibited a heightened risk of under-age labour.	SERD has made a commitment to managing child and forced labour risks throughout the supply chain, however there are no procedural or contractual measures in place to implement this commitment. SERD must impose appropriate contractual provisions on the EPC contractor and put in place a procedure to monitor the local supply chain	Medium
Performance Standard Three: Resource Efficiency and Pollution Prevention				
Requires a project level approach to resource efficiency and pollution prevention and control in line with internationally disseminated technologies and practices				
3.1	Resource Efficiency	The power source to be used during construction and drilling are to be on-site generators. Details such as total numbers and exact specifications of these generators are likely only to be available prior to construction, as based on contractor's detailed planning. Although there is minimal discussion on resource efficiency in the AMDAL or ESIA, this is not deemed a risk for the Project as geothermal developments are not considered resource intensive in terms of energy use, water use or other resource or material use. In addition, the Project incorporates inherent resource efficiency measures such as the re-use of drilling water to reduce water consumption.	No compliance gaps.	Low
3.2	Greenhouse Gas (GHG) Emissions	The Non Condensable Gas (NCG) content of geothermal steam is predominantly made up of CO_2; therefore the Project will emit CO_2 during the operational phase. Although greenhouse gas emissions from the Project are expected to be much lower than the alternative fossil fuel equivalent, quantified annual greenhouse gas	The ESIA states that GHG emissions are estimated to be at 41,475 tonnes of CO_2-equivalent annually during operations. In accordance with PS3 requirements (ie more than 25,000 tonnes), annual quantification of	Low

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		emissions are an important consideration under PS3 with respect to resource efficiency[19].	greenhouse gas emissions from the Project is required. Within the Project's ESMP, there is a requirement during the operational phase to carry out GHG inventory (as based on steam production and NCG content) and post results on the Project's website annually.	
3.3	**Air Quality and Emissions**			
3.3.1	Air Quality and Emissions – Hydrogen sulphide (H_2S) emissions	Emissions of H_2S are the key consideration for air quality and odour. During construction, emissions are released during well testing; during operation, emissions are released via the power plant cooling towers. The concentration of H_2S in the steam released during well testing or from the cooling towers is dependent upon the NCG concentrations. The AECOM Air Dispersion Modelling (ADM) report[20] uses H_2S concentrations based on a separate SERD memo (August 2016)[21]. This memo presents calculations of the likely H_2S content of the steam, based on well testing data from six wells at Rantau Dedap and includes three scenarios of NCG concentrations (low, medium, and high gas). The memo states that the 'medium gas' scenario is the most likely, but that the plant should be designed for the 'high gas' scenario "just in case". This approach is conservative as it assumes the steam contains the maximum H_2S content and therefore has the highest H_2S emissions. It is therefore considered appropriate. Mott MacDonald has not reviewed the accuracy of the NCG and H_2S content calculations, however the general calculation approach and assumptions made appear to be suitable. The calculations demonstrate that emissions of H_2S from the cooling towers during the power plant operation will be below the applicable Indonesian standard of 35mg/Nm^3. The emission calculations appear robust. There is no applicable IFC emission standard for H_2S and therefore only the national emission standard applies. No calculation of production testing emission rates has been presented within the ADM report. However, under the context that the power plant emissions had shown compliance when modelled, it is unlikely that production testing would cause exceedances, since:	Compliance for production testing can be inferred, as the modelled results of the power plant operations (ie with greater emissions and closer proximity to receptors) are already compliant.	Low

[19] PS3 states: "*for projects that are expected to or currently produce more than 25,000 tonnes of CO_2-equivalent annually, the client will quantify direct emissions from the facilities owned or controlled within the physical project boundary, as well as indirect emissions associated with the off-site production of energy used by the project. Quantification of GHG emissions will be conducted by the client annually in accordance with internationally recognized methodologies and good practice.*"

[20] AECOM (August 2016). Dispersion Modelling of Cooling Tower Plumes at Rantau Dedap Geothermal Power Plant Air Dispersion Modelling (ADM) Report.

[21] Supreme Energy Rantau Dedap Internal Memorandum, 5 August 2016 Re: Rantau Dedap – H_2S level prediction

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		• the nearest residential area is more than 5km from any production wells (ie production testing only takes place at production wells), which is much farther than closest receptors to the power plant (ie 800m) • the emissions of atmospheric flash tank (AFT) used for testing would likely be lower than the power plant emission modelled (ie wells are individually tested one, while power plant operation emits emissions from all production wells)		
3.3.2	Air Quality and Emissions – Mercury emissions	The IFC EHS Geothermal Guidelines suggest that mercury can be a significant pollutant depending on the composition of the geothermal resource. The AECOM report does refer to mercury: "The main component of the discharged NCG will be carbon dioxide but hydrogen sulphide (H2S) and mercury will also be present. The latter two components are those of concerns". The ESHIA also refers to mercury emissions but suggests that "theoretically, mercury maybe contained in the NCG but in a very small amount (0.0001mg/l)". However, neither the ESHIA nor the air dispersion report contain an assessment of mercury emissions or mercury content of the NCG component of the steam. Data subsequently provided by SERD provides analysis of the mercury content of the steam condensate, drilling cuttings and wastewater for the project; this data indicates that the mercury content in these samples is low (often below the limit of detection and in all cases below the corresponding regulatory level, where this exists) and it can therefore be inferred that mercury would be unlikely to be present in the NCG content of the steam in sufficient quantities as to require further assessment.	No compliance gaps.	Low
3.3.3	Air Quality and Emissions – Applicable ambient air quality standards/guidelines	Indonesia does not have an ambient air quality standard for H_2S but instead has a standard for odour (0.02ppm, equivalent to 28µg/m^3). The AECOM ADM report assumes that the Indonesian ambient H_2S standard for odour is a 24-hour standard, however, as determined from the measurement method stated in MOE Decree 50/1996, the standard is a 2-hour average. The MOE also consider this standard unsuitable for use in geothermal areas, as it was designed to protect against odour in areas without natural H_2S sources. IFC General EHS Guidelines state that where nationally legislated host country standards do not exist, international guidelines should be used instead. The World Health Organisation (WHO) has a 24-hour guideline for ambient H_2S for the protection of health (150µg/m^3), which is identified in the AECOM report. However the AECOM report does not apply the WHO guideline to the project and instead applies the Indonesian odour standard over a 24-hour period. The report should identify odour standards and human health standards separately. However, as the application of a 28µg/m^3 24-hour standard is more stringent than applying the 150µg/m^3 WHO guideline 24-hour standard, this approach does not present a material risk to the project's compliance with the IFC EHS Guidelines. Indonesia also has an occupational H_2S exposure limit of 14,000µg/m^3, set by the Ministry of Manpower, which is averaged over an 8-hour period and has been designed to protect the health of workers. It is therefore applied at locations where employed people are present for a typical working day. This standard is applied in the AECOM report, which is appropriate.	No compliance gaps.	Low

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		Applicable standards (including the WHO Guideline for H_2S) within the reference framework had been included in Schedule B.15 (Environmental Compliance Norms) of the draft EPC contract.		
3.3.4	Air Quality and Emissions – Baseline monitoring	Baseline H_2S monitoring was undertaken at eight sampling locations (three residential areas and five well pad areas), for one-hour each on 21-22 July 2016. In the ADM report, monitored data is compared against a one-hour odour standard of 70µg/m^3 and, based on the low one-hour concentrations monitored (maximum 8.4µg/m^3 at Well pad I), the AECOM report makes an assumption that 24-hour concentrations would be negligible. The ESIA also presents H_2S monitoring data at eight locations but no details of monitoring duration, dates or methods is given (other than 'direct sampling'). It is assumed that this data is the same as presented in the ADM report. 24-hour baseline monitoring for H_2S were reportedly undertaken at the power plant office area (well pad C), employee accommodation (Gate 2) and nearest community area (Kp. Yayasan) between 30 October to 4 November 2017. However, the results were neither discussed within the ADM report, nor made available for review. Meteorological conditions can vary substantially from hour to hour (particularly at night when wind speeds are typically lower) and day to day, which affects the dispersion of pollutants and therefore this is required to confirm the robustness of the conclusions. The monitoring method used is not stated and we are therefore unable to comment on its appropriateness. Based on the information available, it is not considered likely that the Project area would have high baseline H_2S concentrations, however it is recommended that additional monitoring is undertaken prior to construction commencing to support this conclusion.	The additional baseline monitoring should be presented to supplement the data collected in July 2016. The 24-hour monitoring results should be used as the baseline for comparison with the WHO guideline throughout monitoring .	Low
3.3.5	Air Quality and Emissions – Air quality assessment	Air quality impacts from production well testing have not been assessed; this should be included for completeness. The operational air quality assessment has been carried out using the CALPUFF model, which is an internationally recognised dispersion model typically applied to determine long-range impacts (>50km). However, the use of CALPUFF to model near-field impacts (<50km) is considered appropriate under certain conditions such as complex winds; the ADM report should justify the choice of CALPUFF in this instance. The model inputs (eg meteorological data and emission calculations) appear to be appropriate. The AECOM report compares 24-hour predicted results against the 2-hour Indonesian odour standard (28µg/m^3), which is not a representative comparison but is conservative as explained above. Based on Mott MacDonald's interpretation of the AECOM results, the modelled results show that there are no exceedances of the 24-hour WHO guideline value for H_2S although the ADM report does not make this statement. For clarity, it would be appropriate to include tables of the maximum predicted concentrations at sensitive receptors for the relevant standards. The IFC General EHS Guidelines state that, as a general rule, a Project should not contribute more than 25% of the applicable air quality standards (ie in this case the	The ADM report should compare modelled results against the WHO guideline for H_2S and the IFC '25% rule'. However, based on the modelled results, inclusion of these comparisons would not result in any exceedances or non-compliances and therefore their omission is not considered a material risk to the Project. The air quality assessment should include production well testing impacts. However, this requirement can be waived if the emission parameters of the atmospheric flash tank (used during testing) is shown to have lower emissions than the power plant. The EPC and drilling contractors' ESMP or relevant SOPs should include the required monitoring frequency and methods to	Medium

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		WHO guideline). The air quality assessment does not include any reference to this 25% rule. However, based on Mott MacDonald's interpretation of the AECOM results, the maximum 24-hour concentration at a sensitive receptor is 30µg/m^3, which is less than 25% of the WHO guideline. Modelled 8-hour results at on-site occupational exposure receptors are well below the Indonesian occupational standard for H_2S.	monitor ongoing compliance with the H_2S emission standard.	
3.3.6	Air Quality and Emissions – Dust	Dust can be emitted during construction, both directly from activities such as earthworks, concrete batching and blasting and indirectly through the resuspension of dust by vehicles travelling on roads. Indonesia has a daily and annual standard for total suspended particulates (TSP) and also has standards for dust deposition, which are presented in the ESIA. Baseline monitoring of TSP undertaken over a 24-hour period in the dry season indicates that TSP concentrations are generally low and well below the 24 hour standard. The ESIA presents a 'dust line source modelling' assessment of dust concentrations and concludes that the dust impact will be potentially significant but can be managed through appropriate mitigation measures. This method is not widely used internationally, but the conclusions and mitigation measures appear to be appropriate. Additional measures in line with international good practice should also be incorporated, such as no open waste burning, practicing good site management to minimise stockpiles and transport distances, covering dusty loads and site layout to maximise the distance between dusty activities and sensitive receptors.	The ESMP should be updated with additional internationally recognised dust management measures.	Low
3.3.7	Air Quality and Emissions – Monitoring plans	Community H&S: Ongoing compliance with the WHO guideline is typically determined through representative monitoring. Monitoring should be undertaken during construction to confirm compliance with the WHO guideline, particularly during periods of well testing, and may be linked to emergency response procedures. During construction and well testing, the RKL-RPL requires monitoring of TSP at affected residential areas every six months and of H_2S at 500m and 1000m from production wells every six months. The RKL-RPL does not include equipment specifications or the duration of measurements. The draft EPC Contract (Schedule B.15) includes requirements for the Contractor to monitor ambient H_2S concentrations every three months during construction and commissioning and specifies the method: "*the H_2S at ground level outside of the facility shall be measured using spectrophotometer and/or gas chromatography*". However, the number and location of monitoring points or duration of measurements is not defined in the EPC Contract. During well drilling and testing, monitoring every three months may not be frequent enough to capture periods with elevated H_2S concentrations. Monitoring should be carried out for at least one day per week when drilling and testing are being carried out. The use of a hand held / portable H_2S monitor is recommended. Within the drilling contract document "ATTACHMENT 2 TO EXHIBIT B - H2S SERVICES", there are provisions for portable hand-held meters, and to develop H2S Emergency/Drill Plan (to the satisfaction of Sponsor). Additional routine monitoring	Monitoring plans for the construction and operation phase and the EPRP should be improved through the inclusion of more frequent monitoring and more details on the monitoring methods, locations, and alert levels, as well as communication channels with local communities. The detailed plans (likely to be developed under the contractor's EPC contract obligations to produce Bridging Documents) will be required to demonstrate that they complement the SERD's monitoring regime sufficient to adequately monitor and manage H_2S exceedances.	Medium

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		requirements are expected to be conducted by the EPC contractor during construction. During operation, the RKL-RPL requires monitoring every six months of TSP at residential areas and of H_2S at the power plant boundary and 300m from the boundary. The IFC Geothermal EHS Guidelines state that ambient monitoring locations during operation should be determined by the dispersion modelling study. Locations should include a background site and a number of worst case locations for operational impacts (ie typically at the locations predicted to have worst case impacts where there is relevant exposure, for example the closest / worst affected residential receptor). Various international monitoring methods exist for H_2S, including diffusion tubes, hand held monitors and automatic analysers. Selection of a particular method will typically be based on consideration of the monitoring period required, available manpower and cost. In the first three months of operation, monitoring should be undertaken at least weekly at the closest residential receptors to the power plant. If monitored concentrations are found to be consistently less than 75% of the WHO guideline, then after three months the monitoring frequency may be reduced to monthly. Monitoring should be carried out over a period considered representative of 24 hours to enable comparison with the WHO guideline. Ongoing compliance with the H_2S emission standard of 35mg/Nm^3 should be determined throughout operation by monitoring the steam line for H_2S content in NCGs on monthly basis and monitoring the H_2S content of emissions from the point of emission in atmospheric flash tanks (AFT) and cooling towers twice per year. This requirement should be incorporated into the operational monitoring plan.		
3.3.8	Air Quality and Emissions – Occupational H&S	Representative monitoring should be undertaken at the power plant site and production well pads to ensure the Indonesian occupational H_2S exposure limit is met. Confined spaces and other occupational hazards can also lead to short term exposure of workers to high H_2S concentrations, therefore the occupational H&S plan produced by the contractor should include measures to protect against this such as wearing personal monitors. The draft EPC Contract (Schedule B.15) includes requirements for the Contractor to monitor occupational H_2S exposure (concentrations inside the facility) by 'adequate detectors located in sensitive locations' and states that alarm systems will be used to warn of high H_2S concentrations. However, no information is provided on the trigger levels for alarms, the number and location of monitoring points, duration or frequency of measurements.		
3.3.9	Air Quality and Emissions – Emergency response plans	The Project's ERP or (Emergency Preparedness and Response Plan - EPRP) includes well blow out during drilling and major H_2S releases. However, no quantitative monitoring or alerts levels are prescribed in the procedures. It is not clear how community occupational health and safety would be safeguarded in the event of a major H_2S release, such as what and where monitoring would be undertaken to determine ambient concentrations or which trigger levels would apply for notifying the community or commencing evacuation.		

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
3.4	Flooding and landslides	Within the ESIA, both flooding and landslides risk are considered (ie mainly because most of the Project's components are on higher terrain), with the exception of possible flooding at crossings or roads during peak flow. No significant risks have been identified for these aspects.	No compliance gaps.	Low
3.6	Seismic and Geo-Hazard Risk	The ESIA states that geotechnical evaluation from a Golder Associates report (2009) indicates that the potential of geo-hazard within the Project area are considered to be of low to medium possibility. Site specific investigation (with in-situ soil testing) were detailed in a Geotechnical Assessment Report (AECOM, 2016)[22]. Further testing was recommended in the report in order to obtain further information for design requirements. These recommendations were included in within the Technical Requirements of the EPC tender document, whereby the EPC contractor are to conduct further geotechnical investigation as required to inform on the best practice seismic resistant design. Collectively, the various information above are considered sufficient to address the potential seismic risks for this project.	No compliance gaps.	Low
3.7	Water Resources	The Project currently has four existing water intakes (see Table 1), with main water intake at the Cawang Tengah River expected to supply most of the Project water requirements during the construction phase. The ESIA makes reference to a SERD document[23] which shows that the water usage of the Project activities during construction and operation are 4.2% and 0.5% of the daily flow at the water intake sources respectively. The water usage is estimated from activities such as: • Construction – total 3,551m^3/day, aggregated from: – Drilling: 1,498m^3/day x 2 rigs = 2,996m^3/day – Power plant construction: 400m^3/day – Domestic water uses from rig camp and EPC camp: 155m^3/day • Operation – 8.65m^3/day, from accommodation block It should be noted that actual water usage for drilling will likely be lower than the above estimate, given that water reuse of the water from the mud pond (ie as fed from the shale shaker and drying of drilling cuttings) has not been taken into account. Although the percent utilisation of water source is considered low, review of the methodology for determining water availability has shown that this is based on once-off flow measurements (ie in September, outside of the dry season – June to August) using very rough method of estimation.	SERD needs to ensure strict compliance by the EPC and/or drilling contractors to the renewed SIPA permit, as well as ensure water intake source for drilling is only abstracted from the intake at the main Cawang Tengah River.	Medium

[22] AECOM. (2016). *Rantau Dedap Geothermal Project – Power Plant and Separator Station: Geotechnical Assessment Report.*

[23] Memorandum – Re: Rantau Dedap Stage 1 Development & EPC construction surface water usage, dated 19 September 2016.

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		Hence, SERD will need to ensure the following measures to mitigate the uncertainty in the water availability: • Strict compliance of the SIPA conditions, through installation, monitoring and record-keeping of the flow meter to ensure daily intake is within permitted amount • Ensure that contractors do not use water sources other than the main water intake (ie intake at the main Cawang Tengah River, near well pad A), as shown to be the only adequate water source from rough estimation) for drilling activities Due to subsequent change in location of the operational phase workers' accommodation, it is highly likely that the water intake source will be changed to the main water intake (rather than Intake #2). However, this is not a concern given that this is not cumulative with construction water use, as it is an operational phase water consumption.		
3.8	Erosion and sedimentation	From the previous scope of work (ie Phase I), SERD has identified exposed areas in their "Regreening Area Plan- Phase 1" (June 2014), and "Regreening Area Plan- Phase 2" (August 2014). For the well pads (ie well pads B, C, E and I), the ground has been packed and perimeter drainage constructed. However, there is still many areas such as road sides and slopes which are yet to be fully revegetated, despite being identified since 2014. As previously highlighted during Mott MacDonald's ECA (April 2017), it is recommended that: • SERD set out revegetation plan clearly demonstrating timeline, responsibilities, methodology and provisions for completion of revegetation • Investigate the possibility of aligning the current revegetation plan with on-site restoration possibilities described in the BAP. Of note, the ESMP mentions that bamboo species (ie reportedly to be considered native species) are to be used for erosion control. Their suitability for deployment as revegetation species should be carefully reviewed to ensure that no invasive species are introduced to the forest and that the replanting regime is aligned with the overall on-site restoration efforts. For future Phase II works, as identified in the ESIA, erosion and sedimentation impacts are only mainly during the earthworks and civil construction during the construction phase. Particularly susceptible areas have been identified to be at the new well pad area (ie well pad L and M), which are planned to hold earth stockpiles for access road construction. Good practice such as perimeter drainage and sediment traps were prescribed in the ESMP. Given the sensitivity of the new well pad area (ie within natural habitat - primary montane forest), these measures should be robustly implemented. It is recommended that the EPC contractor provides site specific plans showing erosion and sedimentation engineering controls (eg drainage, sediment traps) prior to earthworks at the new well pad area. This 2.5km reinjection pipeline is considered to be an area highly susceptible to erosion . As it cuts from natural forest on a uneven terrain, there might be earthworks	It is recommended that SERD: • Revise the revegetation plan with clear responsibility and timelines • Align the revegetation plan with on-site restoration possibilities described in the BAP (including reviewing use of bamboo species) The EPC contractor will need to: • Provide site specific erosion and sedimentation engineering plans • Integrate and provide measures to minimise erosion and sedimentation impacts of the reinjection pipeline (to well pad B).	Medium

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		required within a narrow corridor with potential to affect the surrounding vegetation with sedimentation. The methodology of works to be carried out for this scope should integrate measures to minimise impacts (eg minimise clearing, covering with canvas, silt fences).		
3.9	Wastewater Discharges	During the construction phase, the ESIA identifies the key source of wastewater discharges to be domestic wastewater from worker's accommodation and washing water from the on-site concrete batching plant. There is no discharge from the drilling activities, as any effluent from the process (ie water from shale shaker, or produced during drying of drilling cuttings) are pumped into the mud pond, to be eventually either reused or reinjected into the ground. For the domestic wastewater, these are to be treated by septic tanks, and this is considered adequate. For the on-site concrete batching plant, there is likely to be a considerable amount of silty washing and runoff water from its operations. Although there are brief mentions of mitigations within the body of the ESIA (ie drainage, oil-water separator), these has not been explicitly laid out in the ESMP. It is recommended that SERD or the EPC contractor produce a wastewater management plan, specific to the concrete batching plant, prior to commencement of construction. It should include: • References to appropriate discharge standards for runoff or effluent form the batching plant area, such as Government Regulation 82/2001 regarding "The Water Quality Management and Water Pollution Control", in particular, the total suspended solids (TSS) limit of 50mg/L • Specific calculations and plans showing engineering controls (eg drainage, sedimentation basin) which can effectively ensure any discharge to the environment comply with relevant standard • Monitoring and reporting requirements for the effluent from the concrete batching plant area Similar to the construction phase, the only wastewater discharge is domestic wastewater from the worker's accommodation block (ie brine and condensate from power generation will be reinjected into the ground). The domestic wastewater will likewise be treated by a septic tank.	A wastewater management plan specific to the concrete batching plant area is to be produced (prior to construction commencement) and implemented during construction.	Medium
3.10	Solid Waste and Waste Management	During both construction and operations, general construction and domestic solid waste generated from Project activities are to be managed, handled, stored and disposal as per SERD's waste management plan[24]. Waste management (and disposal) options were categorised in a hierarchical manner, reflective of good practice (ie reduce, reuse and recycle). There are no particular concerns for this aspect.	No compliance gaps found.	Low

[24] Supreme Energy SHE Standard Waste Management Plan (ref.: SE-SHE-STD-4) (Rev – 2 Feb '12)

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		The main volume of solid waste from the Project will be the drilling cuttings generated from the drilling of wells. Water based muds containing calcium (Ca) and barium (Ba) are used for the drilling. According to Government Regulation No. 101/2014 regarding Hazardous Waste Management, drilling cuttings and mud waste are considered to be hazardous waste only if oil-based drilling mud is used for "exploration activities for oil, gas and geothermal" It is assumed that this implicitly implies that water-based drilling mud is not considered hazardous (by exclusion of being listed). SERD has a detailed waste management plan[25], specifically addressing the management and disposal of drilling cuttings. Drilling cuttings produced will first be temporarily stored on each well pads bunker area (ie 200m^3) for drying, before being utilised as construction materials or permanently disposed at the bunker near well pad B. The plan has instituted key reporting measures to inventories the amount and movement of drilling cuttings to ensure proper accountability (ie no unauthorised dumping). There are no particular concerns for this aspect.		
3.11	Materials Storage, Handling, and Use, including Hazardous Materials	For construction and operations, only small amounts of hazardous materials and waste will be used and generated. These are expected to be adequately managed by general good hazardous material/waste management practice. For the drilling works, small amount of explosive is required to be stored in the Project area for drilling purposes (ie dislodgement of drill bits). For the Project, an existing bunker near well pad B is proposed as the location of the explosive bunker. SERD has a set of procedures[26] for management of these explosives. The explosive bunker will be re-permitted, and will have 24-hour security personnel with police presence.	No compliance gaps found.	Low
3.12	Land and groundwater contamination	Soil sampling at the Project site carried out within the ESIA did not appear to be targeted at key parameters investigating land contamination. However, given that the Project is predominantly located on natural forest or coffee plantations, there are no particular known historical land-use which might indicate a significant risk of existing contamination. Within SERD's existing management plans, there are appropriate mentions or measures mitigation land and groundwater contamination risk. These documents include: • SERD's emergency response plan[27], there are spills response procedures laid out for such events	An inspection regime for components with contamination risk (especially pumping station fuel tanks) is to be established and maintained for the construction phase.	Low

[25] Supreme Energy Rantau Dedap – Management and disposal of drilling cuttings (ref.: RD-MSHE-WAM-PRO-0001) (rev 0 – issued 16 March 2017)

[26] Supreme Energy – Explosive handling guideline and procedure (ref.: SCM-LOG-EHP) (rev 0 – issued September 2014)

[27] SERD site specific emergency response plan (ref.: RD-MSHE-EMP-PRO-0001) (rev A)

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		• SERD drilling cutting management plan[28], the mud ponds (for holding drilling muds) at each mud ponds are also expected to be lined with HDPE[29] liners For the construction phase, there is a certain level of risk for land/groundwater contamination due to the fuels and chemicals being stored in temporary facilities, in isolated areas within natural habitats surroundings. Such locations include: • Hazardous waste storage area (near well pad B) • Hazardous waste storage facilities at well pads, or power plant • Chemical storage area (eg drilling chemical) • Mud ponds at well pads • Fuel tanks at various pumping stations (ie eight existing, with possibility for more) across the forest • Septic tanks or sewage treatment plant It is recommended that the Project identifies these sources of contamination risks (ie especially for the isolated pumping station fuel tanks) and establish an inspection regime (eg secondary containment, leakage) to be implemented throughout construction. For the operational phase, there is significantly less risk associated with the handling, and storage as hazardous waste, fuel tanks and chemical storage are likely to be used in small amount and stored in permanent facilities at the power plant area.		
3.13	Traffic and Transportation	SERD has a site-specific traffic management plan[30], which presents good practice for managing traffic impacts and safety. However, it was noted that access roads pass through and close to residential areas and therefore communities may be affected by dust, noise, congestion and safety issues. In particular, the plan states that deliveries will be undertaken at night to reduce traffic congestion as well as improve safety. There is no concern on the Project's traffic management, however, the proposed measures would have a high potential to cause noise impacts (ie discussed below).	No compliance gaps for traffic management measures, but noise impacts to be investigated (see below).	Low
3.14	Noise	For construction activities, noise will be generated during: • Construction of power plant at well pad E • Drilling and production testing at production well pads • Earthworks at well pads, borrow areas and disposal pits • Construction traffic The use of explosives in this Project is limited to the purpose of dislodging drilling bits or pipes during drilling. The explosive is deployed underground in the minimum required amount within the drilled well. Hence, noise impacts are not considered to be	Construction traffic has the potential to cause significant noise impacts, and should be mitigated by: • Socialisation of mobilisation plan to affected villages • Revised assessment of noise levels based on mitigation (eg speed, scheduling) to demonstrate possible compliance	Medium

[28] See footnote 25.

[29] High-density polyethylene (HDPE)

[30] SERD Site Specific Procedure Traffic and Journey Management (ref.: RD-MSHE-EMP-PRO-003) (rev 0 – undated)

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		significant. There is no other planned use of explosive in terms of rock breaking at for surface earthworks. Applicable noise levels which contractors must adhere to are presented in the EPC contract, B-15 Schedule of Environmental Compliance Norms; this includes national limits and IFC EHS Guidelines. Contractors would be responsible for implementing additional noise mitigation if monitoring shows that noise limits are at risk of exceedance. The power plant is located more than 2km and 6km from isolated coffee farmer huts and Dusun IV respectively. Hence, the noise impact from power plant construction is not considered to be significant. For drilling and production well testing, the production well pad are located more than 1km and 3.5km from isolated coffee farmer huts and Dusun IV respectively. Furthermore, atmospheric flash tanks (AFTs) will be used which have the added benefit of reducing noise as dry steam is diverted to and released through the AFT during production well testing. Hence, the noise impact from drilling and testing is not considered to be significant. As a further note, the ESIA did include the measure of gradual ramp up of drilling intensity to allow dispersion of nearby animals. In terms of earthworks, the well pads are sufficiently far from receptors to not have a significant noise impact. A particular issue of note, in terms of noise impacts from temporary borrow areas (eg earthmoving works), there is a “Hardfill Borrow Area” as shown in various ESIA figures. Although this component had not been assessed for noise impacts, this borrow area is noted to be 500m and 650m for Dusun IV and Kp. Yayasan respectively. Hence, the likelihood of noise impacts is still considered low. Villagers from Dusun IV and Kp. Yayasan demonstrated that they are aware of the Project’s grievance mechanism and they have been lodging complaints. Therefore, noise related issues (if any) is expected to be reported and addressed through the grievance mechanism. For construction traffic, both the AMDAL and ESIA concluded that there is likely to be exceedance of both Indonesian and IFC noise standards, especially at night time (as mobilisation of convoys are scheduled at night to avoid congestion and improve safety). Some mitigation were prescribed within the RKL-RPL and ESMP to reduce this impact, although there is no quantification of the possible noise reduction (ie by slowing down, or scheduling of activities). SERD has a site-specific traffic management plan[31], which further prescribes good practice measures, but similarly, did not demonstrate conclusively that traffic noise will be effectively mitigated. It is recommended that: • SERD fully socialise their mobilisation plan to the affected villages (eg Tunggul Bute)	• Noise monitoring during night time mobilisation • Amend delivery scheduling as appropriate, taking in to account of grievances and/or monitored values	

[31] SERD Site Specific Procedure Traffic and Journey Management (ref.: RD-MSHE-EMP-PRO-003) (rev 0 – undated)

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		• Revise the traffic management plan or noise assessment to quantitatively show that implementation of measures (ie vehicle speed, scheduling) can potentially reduce traffic noise impacts to compliant levels • Implement (night time) noise monitoring at receptors (eg Tunggul Bute) during period of heavy or intensive mobilisation to measure impact to assess effectiveness of mitigation measures For the operation phase, the main source of noise is from the power plant, which is more than 2km and 6km away from isolated coffee farmer huts and Dusun IV respectively. Hence, the noise impact from the power plant's operation is not considered to be significant.		
3.15	Pesticide Use and Management	No pesticides are used on the Project.	No compliance gaps.	Low
3.16	Visual	No visual impact assessment has been performed. Visual impacts on the local area are not considered likely to be significant. The main source of visual impacts is likely to be the steam emitted from cooling towers, however the power plant is located within a forested area, and is more than 5km away from the nearest residential area. The permanent pipelines (ie brine and condensate) connecting the well pads to the power plant are to be laid along roads, or through forested areas. Given the pipe diameter size (ie <1 meter) and their near ground level elevation, the visual impact is unlikely to be significant. Light pollution impacts could occur on fauna; however, this has already been covered by the BAP.	No compliance gaps.	Low
Performance Standard Four: Community Health, Safety, and Security				
Addresses the responsibility to avoid or minimise the risks and impacts to community health, safety and security that may arise from project-related activities, with particular attention to vulnerable groups				
4.1	Community H&S General Requirements	As noted above, SERD has a robust SHE system for its work force and contractors. The documents provided do not include provisions relating to community SHE, however it is noted that the ESIA commits SERD to developing a Community, Safety, Health and Environmental Plan. This document should be provided for review and include responsibilities of both SERD and its contractors. With the exception of the current Project administration block and aspects of the road network, the design of the Project will ensure that most key components are isolated from the local community. This includes well-pads, power station and warehouses within the Protection Forest area. Under the conditions of its IPPKH, SERD has an obligation to prevent the community from accessing the Protection Forest. At the time of the site visit, this was being implemented through a security gate arrangement on the primary access road.	SERD has a stated commitment to managing community health and safety impacts, however the documents to achieve this have not yet been made available for review. This should include the Community Safety Health and Environmental Plan.	Medium

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		In terms of human trafficking, there is no indication of any specific heightened risk compared to similar projects in the region. Indonesia has ratified relevant ILO Conventions such as the Forced Labour Convention (1930), and Abolition of Forced Labour Convention (1957). Issues relating to community health as a result of exposure to disease are discussed further within Section 4.5 below.		
4.2	Infrastructure and Equipment Design and Safety	The ESIA commits SERD to complying with all relevant Indonesian regulations, the IFC Performance Standards, and Good International Industry Practice, including associated design criteria.	No compliance gaps identified at this stage	Low
4.3	Community Exposure to Hazardous Materials	The only hazardous materials likely to be produced on site are cooling tower sludge and oils/hydrocarbons. These will be disposed of by an appropriately licensed contractor. The outcomes of the air quality modelling discussed within Section 3 of this table show that the community will not be exposed to any airborne hazardous materials such as H2S. For the drilling works, small amount of explosive is required to be stored in the Project area for drilling purposes (ie dislodgement of drill bits). For the Project, an existing bunker near well pad B is proposed as the location of the explosive bunker. SERD has a set of procedures[32] for management of these explosives. The explosive bunker will be re-permitted, and will have 24-hour security personnel with police presence.	No compliance gaps identified at this stage	Low
4.4	Natural Resource Issues & Ecosystem Services	The ESIA notes that impacts on ecosystem services will likely be small due to the small Project footprint and low level of water used. In practice, ecosystem services (particularly regulatory and supporting) will be largely managed through successful implementation of the RKL/RPL and ESMP that have been developed for the Project. The Community Grievance Mechanism is also able to serve as a mechanism to identify and manage any impacts to ecosystem services.	No compliance gaps identified at this stage	Low
4.5	Community Exposure to Disease	The public health baseline presented within the ESIA recognises that the local health network has limited capacity to provide services to the existing population of the area. The ESIA describes a risk that the Project workforce could lead to increased use of local public services and increase the spread of disease. A Community Safety Health and Environmental Plan is proposed by the ESIA. Information gathered during the site visit confirms during an interview with Segamit village public health workers noted that there was a 35% increase in health consultations at the clinic during the peak of the exploration phase. This was largely due to workers from the exploration civil construction workforce being housed within the local community and placing pressure on local services. The ESIA does not adequately describe how many of the peak construction workforce (over 2,100 people) are to be housed in the local community and what impacts this influx will have on local services, community health and culture. SERD must undertake forward	The ESIA does not adequately assess impacts associated with influx of workers to the local area and potential impacts to health services and the exposure of the community to other influx related impacts. The following must be undertaken to assess and manage these impacts • Develop a workforce accommodation strategy • Develop and implement an Influx Management Plan	Medium

[32] Supreme Energy – Explosive handling guideline and procedure (ref.: SCM-LOG-EHP) (rev 0 – issued September 2014)

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		planning in cooperation with the selected EPC contractor to firstly define the overall workforce accommodation strategy and then identify and assess impacts accordingly. The ESIA commits SERD to developing and implementing a Public Health Awareness Raising Plan to address aspects such as malaria prevention, hygiene, sanitation and community health issues, and to monitor local resource impacts.	Develop and implement the Community Safety, Health and Environmental Plan as committed to within the ESIA	
4.6	Emergency Preparedness and Response Plans	As described within Section 1.8 of this table, SERD has in place a site specific Emergency Preparedness and Response Plan. The document appears focused entirely on emergency response in the context of occupational health and safety of workers, however there is no reference to the potential impact on the local community and how they may be required to respond to emergencies. There is no evidence that the ERP has been disclosed to the local community, however the ESIA commits SERD to implementing the ERP and ensuring it is disclosed to the local community.	The ERP is considered generally suitable to cover the local workforce, however SERD needs to ensure that it identifies elements where the local community needs to be involved and disclose this appropriately.	Low
4.7	Security Personnel	SERD has appointed PT Jaga Nusantara (Janus) as its security provider. At the peak of exploration activities in 2015, there were up to 84 security personnel. At the time of the site visit this was approximately 30. Janus was subject to prequalification auditing as well as periodic contractor performance reviews. The documentation provided by SERD indicates that only minor corrective actions have been raised and that performance exceeds expectation. There have been no reports of excessive use of force within any of the documents provided by SERD. Security on site during construction and operations will be managed under contract using the same arrangement. Guards will continue to be primarily sourced from local communities and trained using the standards of SERD, the contractor and Indonesian Police.	No compliance gaps identified at this stage	Low
Performance Standard Five: Land Acquisition and Involuntary Resettlement				
This Performance Standards is triggered when land acquisition is undertaken involuntarily or where the Project can resort to expropriation of land resulting in enforced relocation and resettlement impacts. Resettlement refers both to physical displacement (relocation or loss of shelter) and to economic displacement (loss of assets on land that leads to loss of income sources or other means of livelihoods)				
5.1	Project Design	**SERD led land acquisition** The Project is situated and has been designed to avoid displacement impacts and has not resulted in any physical displacement. SERD actively attempted to achieve negotiated settlements with all land owners. In cases where such an outcome was not able to be achieved, SERD identified alternatives to the Project's design. While not specifically stated within any Project documentation, SERD has stated there were at least two cases where realignment of the road design was undertaken where a negotiated settlement with a land user was not able to be achieved. Based on the evidence presented within the SCAR and through the ESDD process, no evidence of any legal disputes or expropriation of land was uncovered. SERD has completed all land acquisition required for the Project, as described within Appendix C. This includes all compensation payments and receiving relevant certificates and permits from the Government of Indonesia. **PLN led land acquisition**	SERD has completed all land acquisition required for the Project and achieved negotiated settlements for all transactions. The land acquisition for the TL is being led by PLN who have noted they will use expropriation powers where necessary. As this is an associated facility, SERD is likely to have limited ability to require PLN to ensure negotiated settlements for all land transactions. It is recommended that SERD seek monthly updates from PLN as to the status of the land acquisition as means to monitor compliance with the applicable regulatory framework, coupled with an assessment of overall impacts to livelihoods.	Medium

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		PLN is leading the land acquisition for the TL which involves securing land for 116 towers (either 225m^2 or 400m^2 depending on final design) and a 20m wide right of way (ROW) for the entire 39km length. 78 towers are situated on private land, with a total of 38 located within the Protection Forest. 36 of the towers within the Protection Forest will also be within the WKPB. Based upon outcomes of discussions with PLN project design to date has avoided any physical displacement, however land valuations and payments have not yet occurred. A description of the legal mechanisms through which PLN will acquire the land is provided in Appendix C and covered in detail within the 2018 SCAR. The legal mechanisms which PLN will utilise (as described within Appendix C and the 2018 SCA) will mean that negotiated settlements will not be achieved. PLN has noted that should agreement with land owners not be reached as to compensation values it intends to resort to expropriation powers available to it to ensure it meets its obligations under the PPA. This process involves vesting the calculated compensation amount within the District Court for resolving any ownership issues and expropriating the land. For sections of the TL outside of the WKPB, both SERD and Mott MacDonald consider that SERD will have limited ability to influence PLN to comply with all aspects of PS5. Description of the aspects of the TL land acquisition relevant to compliance with principles of replacement cost, consultation and livelihood restoration are described further in 5.2 and 5.7.	This is further described in 5.2 and 5.7 below.	
5.2	Compensation and Benefits for Displaced Persons	**SERD led land acquisition** SERD has previously undertaken, and presented to the ADB for disclosure, a detailed analysis of the land acquisition process between 2011 and 2014. This is provided as Appendix **Error! Reference source not found.**. Additionally, Mott MacDonald prepared a Social Compliance Audit Report which, among other matters, has assessed the land acquisition and livelihood restoration activities undertaken from 2014 to 2017. Key outcomes from these reports relating to compensation include:: • A total of 157 HH's have been economically displaced by project land acquisition activities to date (hereafter referred to as affected households – AH). 100% negotiated settlements were achieved. Where negotiations with land owners did not achieve a negotiated outcome, SERD sought to redesign aspects of the Project to avoid expropriation.. • All payments have been made to the AHs in accordance with the negotiated amounts and there are no pending complaints or legal cases relating to the land acquisition • The land and crop compensation amounts agreed to with the 57 AH's utilising privately held land were significantly higher than the rates outlined within the South Sumatra Government Decree No 25/2009. This provides a basis for land prices of 1,350 to 4,050 IDR/m2 (compared to the agreed rates of between 6,500 and 20,000 IDR/m2), and coffee tree prices of between 19,125 and 34,138 IDR/tree (compared to the agreed prices of 45,000 to 65,000 IDR/tree) • Based upon prevailing laws, the 100 AH's utilising land within the Protection Forest have no legal entitlement to compensation for the land as they do not officially hold any form of ownership or use title. There is no legal mechanism which conferred on SERD the right to provide compensation for the value of the land, and it therefore	Based on the outcomes of the ESDD, the 2014 SCAR and 2018 SCAR, the Project is considered consistent with the replacement cost principles. Land acquisition for the TL is still ongoing. Prevailing regulations for private land are based on market valuations for land, assets, and crops. Non-titled land users within the Protection Forest are provided with compensation only for crops. To determine if concepts of market valuation are being adhered to it is recommended that SERD provide a copy of the KJPP's final report once available	Low

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		used the Governor of South Sumatra Decree No 25/2009 which provides a pricing guide for land and crop valuations. Both social compliance audits showed that SERD used prices for crops much higher than market rates (between 45,000 and 65,000 IDR for coffee trees compared to between 2,700 and 35,250 IDR within Decree 25/2009) as part of a negotiated settlement process which resulted in provision of compensation to non-titled land users which more than met replacement cost principles. Land owners interviewed during January 2018 noted that using the provided compensation they were able to purchase land of equal or greater area and with the ability to secure private legal title. • Local community members engaged with through the ESDD process who have been compensated have noted that fairness of the compensation levels and approach. There were no community protests during the land acquisition process, and no grievances raised since the land acquisition concluded • SERD has been implementing CSR type activities since 2012, and commencing in early 2016 has commenced implementation of an Integrated Social Development Plan which included livelihood restoration components. This is further described within 5.7 below **PLN led land acquisition** The land acquisition for the TL being led by PLN will not result in a negotiated settlement outcome, however as described within the 2018 SCAR aspects of it will likely result in compensation at replacement value: • Land acquisition of the tower pad areas within private land will be undertaken in accordance with Law 2 /2012 and Presidential Regulation 71/2012 which contains provisions to undertake an independent valuation of land and assets to offer compensation at true replacement cost. Cash compensation only is provided, no additional benefits such as livelihood support is provided • Land within the ROW is not permanently acquired, rather PLN will secure an easement over the land in which a height restriction on crops and structures will be enforced. Compensation will be calculated in accordance with Ministerial Decree 38/2013, which generally provides compensation payments at 15% of assessed market value. Cash compensation only is provided, no additional benefits such as livelihood support is provided • For all AHs within the Protection Forest, compensation for both tower pads and the ROW will be provided in accordance with Decree 33/2016. This only provides compensation for crops and assets, not for the value of the land as they are considered non-titled land users. Cash compensation only is provided, no additional benefits such as livelihood support is provided. The concepts of market rates are based upon independent valuation undertaken by a registered independent and registered public valuation company (known as a *Kantor Jasa Penilai Publik* – KJPP). PLN has recently engaged a KJPP and it is recommended that SERD secure a copy of the final report. Matters pertaining to lack of livelihood benefits are described within 5.7 below.		

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
5.3	Community Engagement	**SERD led land acquisition** The land acquisition process undertaken by SERD was done in a transparent consultative manner as evidenced by information provided variously through the SEP, ESIA and SCAR. It included active engagement of affected land owners and other key stakeholders (such as village heads and representatives of regency and sub-district governments as required) during public meetings, land measurement, face to face negotiations and payment of agreed compensation. The nature of this consultation was verified within the 2014 SCAR and reconfirmed by stakeholders interviewed during the ESDD process. As discussed further in Section 5.5, as part of a socio-economic baseline survey of affected people in 2015, SERD sought input from affected people into the development of its Integrated Social Development Plan (ISDP) which has the dual purpose of acting as the vehicle for the CSR programme, as well as livelihood restoration measures for affected people. The first implementation report for the Integrated Social Development Plan (ISDP) was prepared by PT Inti Hexta Semesta (IHS), and titled "Training Implementation of Skill Development Plan and Livelihood Opportunities Development Program". It specifically notes a low, participation rate of project affected people, with only 14 of the 112 invited participants belonging to AHs. This was due to a lack of targeted engagement and a short notice period. As a result of improvements recommended by this report (and subsequently implemented by SERD) future training programmes implemented by SERD have been specifically targeted towards AHs and the targeted engagement has increased participation rates.. . **PLN led land acquisition** Information regarding consultation to date has not been provided by PLN, however it is understood that at least two rounds of consultation have been undertaken with all AHs. This includes initial disclosure of the TL project and land acquisition requirements, and a second meeting to announce the outcomes of the land measurement and crop inventory survey. AHs within the Protection Forest when interviewed were able to confirm this level of consultation.	The land acquisition process and development of the ISDP have both been undertaken integrated effective community engagement strategies. Initial concerns relating to ineffective engagement with AHs leading to low participation in livelihood restoration programmes have been overcome by changing consultation approaches to a more targeted style Based on representation from PLN and outcomes of interviews with AHs in the Protection Forest indicate that consultation undertaken to date has been carried out in accordance with the requirements of Indonesian regulations and PS5. It is recommended that within the scheduled monthly meetings with PLN,SERD should seek notification of any planned and recently undertaken consultation.	Low
5.4	Grievance Mechanism	**SERD led land acquisition** A grievance mechanism was put in place during the land acquisition period and was shown to be effective in receiving and addressing grievances. A total of five grievances were received between August 2012 and April 2014. Based on a review of the Grievance Log, all were resolved in collaboration with a number of different parties (including village heads and the land agency) and within a two-week period. As discussed within Section 1.15 of this Table, SERD still implements its Grievance Mechanism and it has been shown to be widely accessible within the community. Areas of improvement have been identified to ensure full compliance. **PLN led land acquisition**	SERD has shown a strong commitment to implementing its grievance mechanism as it applies to the land acquisition processes. It is recommended that as part of the monthly meeting with PLN, SERD should seek an update on the number and status of any grievances lodged.	Low

<table>
<tr><th>No.</th><th>Performance Standard</th><th>Project setting/background</th><th>Compliance review</th><th>Risk ranking</th></tr>
<tr><td></td><td></td><td>PLN has not noted how it has disclosed the regulatory grievance mechanism or if any grievances regarding the land acquisition process have been lodged to date. The grievance mechanisms put in place by the Indonesian regulations applicable to the TL land acquisition are consistent with the requirements of PS5</td><td></td><td></td></tr>
<tr><td>5.5</td><td>Resettlement and Livelihood Restoration Planning and Implementation</td><td><u>SERD led land acquisition</u>
A livelihood restoration plan (LRP) was not produced prior to land acquisition being undertaken. Corrective actions as an outcome of the 2014 SCAR required SERD to develop a socio-economic baseline for project affected people, and develop effective livelihood restoration measures. This was undertaken in 2015, with ISDP implementation commencing in early 2016. The effectiveness of the ISDP in addressing impacts to AHs is described further within Item 5.7 below.

<u>PLN led land acquisition</u>
An LRP was not produced by PLN as part of the TL land acquisition. As no livelihood restoration benefits are to be provided (in accordance with prevailing regulations), PLN has stated that it will not develop such a plan. As described within Item 5.7 below, livelihood impacts to AHs in both private and protection forest land are anticipated to be minimal. SERD must assess the extent of livelihood impacts to AHs within the Protection Forest area and provide them with access to the ISDP (see below).</td><td>Changes to the ISDP document are recommended under economic displacement (Item 5.7 in this Table) to assure effectiveness of livelihood restoration implementation and monitoring. This must include assessment of impacts to AHs within the Protection Forest impacted by the TL land acquisition..</td><td>Medium</td></tr>
<tr><td>5.6</td><td>Physical Displacement</td><td><u>SERD led land acquisition</u>
The land acquisition process led by SERD has not resulted in any physical displacement

<u>PLN led land acquisition</u>
Information provided by PLN indicates that there will be no physical displacement as a result of the TL development. This must be confirmed by SERD once all documentation is provided by PLN.</td><td>Land acquisition led by SERD has been completed and has not resulted in any physical displacement.
SERD must regularly meet within PLN (eg as part of the scheduled monthly coordination meetings) to determine the status of the TL land acquisition and identify any cases of physical displacement</td><td>Low</td></tr>
<tr><td>5.7</td><td>Economic Displacement</td><td><u>SERD led land acquisition</u>
The Project is considered to have led to the economic displacement of 157 households. As noted in the below table, 98 households (HH’s) have lost more than 10% of their land and are therefore considered to have experienced significant impacts. The SCAR 2014 also noted that 109 of these HH’s are considered as vulnerable.
<table>
<tr><th>Extent of Impact</th><th>HH’s - Private Land</th><th>HH’s - Protection Forest</th></tr>
<tr><td>0-10%</td><td>33</td><td>26</td></tr>
<tr><td>10-20%</td><td>17</td><td>30</td></tr>
</table></td><td>Land acquisition has led to economic displacement, the impacts of which SERD are committed to managing through its ISDP. Improvements to how programmes are designed and implemented is demonstrating higher participations rates of AHs in effective training. To secure full compliance with PS5, the following amendments must be incorporated into the ISDP and other documents (eg SEP) as required:</td><td>Medium</td></tr>
</table>

No.	Performance Standard	Project setting/background			Compliance review	Risk ranking
		20-50%	7	31	• Beneficiaries must be clearly defined under different components of the ISDP plan to allow for separation of aspects targeted at AHs for livelihood restoration measures and what comprises of general CSR initiatives and distribution of positive project benefits to the broader community. A recommended definition and eligibility is as follows: – Priority 1 (P1): those who are members of AHs directly impacted by the Project land acquisition and having above 10% of total productive land acquired (and thus significantly impacted by land acquisition) based on the 2017 SERD Land Procurement Documentation, or are defined as vulnerable AHs regardless of the extent of impacts – Priority 2 (P2): those who are members of AHs directly impacted by the Project land acquisition and having than 10% of total productive land (and thus not significantly impacted by land acquisition) based on the 2017 SERD Land Procurement Documentation, or are defined as vulnerable households residing in the WKPB – Priority 3 (P3): those who are indirectly impacted by the Project (ie residing within the WKPB) • Provide an overview of applicable standard requirements and commitments from SERD • Provide a proposal procedure for requesting a specific ISDP programs • Provide stakeholder engagement and disclosure strategies for ISDP programs based upon the required amendments to the SEP • Role and responsibility description	
		50% or more	0	13		
		Total	**57**	**96**		
		Source: SCAR 2014 (Greencap), Table 4.5 “Extent of Land Loss” & SCAR 2018 (Mott MacDonald) Table 3 “Summary of land owners involved in 2017 land acquisition”				
		As an outcome of the SCAR, SERD undertook a socio-economic baseline of project affected households to aid development of the ISDP. The survey which was conducted in October 2015 covered 122 households, including 78 households which are defined as being affected by the land acquisition phase. It also assessed the vulnerability of these affected households, and determined that there were 17 HH’s considered as “most vulnerable”. It also noted that many of the HH’s had not effectively used their compensation payments to restore their livelihoods, eg money was primarily used for consumptive purposes (houses, vehicles, household goods), debt repayments and education expenses. There were 153 households originally impacted by the land acquisition phase. This is a low coverage level (approximately 50%), and conversations with SERD indicated that this was largely due to many of the households who owned land not residing within the area, or were absent during the period of the survey. Through its ongoing stakeholder engagement activities, SERD should seek baseline data for people who still reside within the WKP area and surrounds and who did not participate in the initial survey. The feedback gained through the socio-economic survey also included input into livelihood restoration measures to include in the ISDP. The ISDP is being utilised as a mechanism to improve or at least restore the livelihoods of project affected people, as well as provide broader project benefits (Corporate Social Responsibility, CSR, type focus) to the surrounding communities. The document recommends a range of partner institutions to implement agricultural, vocational and services based livelihood assistance programmes. It also includes a safety net programme to allow vulnerable people to participate. The list of participants for the safety net programme is considered limited (17 people only compared to an overall total of 109 affected households defined as vulnerable within the 2014 SCAR) and it is not clear whether those listed are affected households or vulnerable households identified as occurring within the Project Area through the socio-economic baseline in 2015. SERD initially engaged IHS in 2015 to develop the ISDP. This acts as a mechanism to improve or at least restore the livelihoods of project-affected people, as well as to provide broader project benefits to the surrounding communities. In addition to the ISDP, since 2013, SERD has been annually developing and carrying out their Corporate Social Responsibility (CSR) programs for affected communities. SERD’s CSR programs focus on providing donations for schools and mosques, agricultural equipment, and seeds, and developing local roads systems (see Appendix C for the list of CSR program implemented up to date). The ISDP is based on the two key components, including: (i) Community Capacity Building; and (ii) Livelihood				

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		Development. The Community Capacity Building Program aims to develop the capacity for the most affected communities through the building of life skills based on the employment needs of the local economy and the availability of local skills. The livelihood development aims to improve the livelihood of the most economically-unfortunate and vulnerable people. These programmes were targeted at the broader community with the WKPB in general rather than being specifically targeted at AHs and were based upon inputs collected from participants during a socio-economic and need surveys. The results of this survey demonstrated that in many cases, AHs had made ineffective use of their land compensation payments and recommended a range of partner institutions to assist in the implementation of agricultural, vocational and services based livelihood assistance programmes. It also includes a safety net programme to allow vulnerable people to participate. Initial implementation of the ISDP showed a low participation rate of AHs (as noted above). Taking lessons learnt from the 2016 coffee training programs, SERD organised a series of coffee training sessions specifically for AHs in December 2017. There were reportedly 87 participants in the 2017 sessions, which is a greatly increased participation rate from 2016. Different from the previous training, the 2017 program was targeted at directly affected people and vulnerable people (see Appendix D for the list of participants in the training). However, the training documentation does not record the status of the people participated within the programs, ie if they are defined as households affected by the land acquisition, or if they are vulnerable. The review of ISDP and outcomes of the consultation undertaken by Mott MacDonald in January 2017 and January 2018 showed that the livelihood restoration elements of the ISDP (primarily agricultural training such as improved coffee farming techniques and introduction of new types of fruits and vegetables considered appropriate for the setting) have been successful. Interviewed participants noted improved yields in coffee and general diversification of their livelihood strategies. SERD is utilising the outcomes of the ongoing monitoring processes to continually improve its programmes. Mott MacDonald has identified additional areas of improvement to ensure clarity of documentation and effectiveness of implementation and monitoring of the ISDP. In these regards, SERD must update the ISDP report so that it is a concise plan (at the moment, it includes outcomes of socio-economic baseline assessments and outcomes of consultation) which is focused in a manner that can address impacts to AHs and distribute Project benefits to the broader community in the most effective manner possible. The revisions to the ISDP must be undertaken as an Action Item as are to include: • Beneficiaries must be clearly defined under different components of the ISDP plan to allow for separation of aspects targeted at AHs for livelihood restoration measures and what comprises of general CSR initiatives and distribution of positive project benefits to the broader community. A recommended definition and eligibility is as follows: – Priority 1 (P1): those who are members of AHs directly impacted by the Project land acquisition and having above 10% of total productive land acquired (and thus significantly impacted by land acquisition) based on the 2017 SERD Land	• Providing monitoring, evaluation, and reporting procedures • Provide budgets required to implement the project on a year by year basis • Provide time bound implementation schedule For the land acquisition activities for the transmission line within the Protection Forest (both tower pads and right-of-way) SERD is to undertake the following: • Develop a basic socio-economic profile of the 38 AHs within the Protection Forest to determine the magnitude of uncompensated impacts and develop appropriate livelihood restoration measures as part of the ISDP. • As part of the socio-economic survey undertake a basic audit to determine if all affected households have been provided compensation in accordance with the regulations implemented by PLN and the independent valuation • Incorporate AHs from the Protection Forest into the ISDP and its monitoring programmes based upon the assessed level of impacts	

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		Procurement Documentation, or are defined as vulnerable AHs regardless of the extent of impacts – Priority 2 (P2): those who are members of AHs directly impacted by the Project land acquisition and having than 10% of total productive land (and thus not significantly impacted by land acquisition) based on the 2017 SERD Land Procurement Documentation, or are defined as vulnerable households residing in the WKPB – Priority 3 (P3): those who are indirectly impacted by the Project (ie residing within the WKPB) • Provide an overview of applicable standard requirements and commitments from SERD • Provide eligibility criteria and entitlement for participating in the ISDP programs • Provide a proposal procedure for requesting a specific ISDP programs • Provide stakeholder engagement and disclosure strategies for ISDP programs based upon the required amendments to the SEP • Role and responsibility description • Providing monitoring, evaluation, and reporting procedures • Provide budgets required to implement the project on a year by year basis • Provide time bound implementation schedule **PLN led land acquisition** For the TL, as compensation for towers and ROW in areas of private land is anticipated to be provided at true market and replacement rates, and given the small areas of land involved impacts to livelihoods are anticipated to be minimal. As SERD has limited ability to influence the decision-making processes of PLN outside of its WKPB, it is recommended that its obligations for livelihood restoration be limited to consulting with PLN and sub-district and village heads affected by the TL to ensure all AHs are able to access the sub-district level agricultural extension services that are funded by the Province of South Sumatra. Within the Protection Forest, as compensation is only being provided for crops and assets on the land, the principles of replacement costs are not being adhered to and the likelihood of livelihood impacts is therefore increased. Interviews with AHs from Rantau Dedap village (within the Protection Forest) indicated they would only be losing between 1 and 5% of their total productive land. To confirm the extent of livelihood impacts to all AHs within the Protection Forest SERD should undertake a basic socio-economic access to precisely define the nature and significance of impacts. As the majority of AHs within the Protection Forest are also within the WKPB (36 out of a total of 38) it is considered that SERD has sufficient degree of influence to include them within the ISDP as either P2 or P3 beneficiaries (based on the above recommended categorisation).		
Performance Standard Six: Biodiversity Conservation and Sustainable Management of Living Natural Resources				
Addresses measures to conserve biodiversity				

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
6.1	Identification of Natural and Modified Habitats	The CHA[33] identifies four broad habitat types within the Project area: montane forests, freshwater habitat, plantation and semi-rural/urban. Montane forests and freshwater habitats are considered to be Natural Habitats and occur within the majority of the Project Area. The overall area of temporary and permanent habitat loss as a result of the Project is calculated to be 124.5ha; comprising 67.13ha of Natural Habitat and 57.37ha of Modified Habitat.	The Project will result in significant conversion of Natural Habitat. The mitigation hierarchy has been and will be applied to avoid, minimise and restore (temporary) impacted areas. Biodiversity offsetting will be required to mitigate for overall habitat loss to achieve no net loss for Natural Habitat and a net gain for Critical Habitat (see 6.2). A biodiversity offset strategy (BOS) has been undertaken[34] and potential options evaluated to achieve this, including recommendations for a preferred option. The next step will include the preparation of a biodiversity offset management plan (BOMP) which will outline the delivery mechanism of the final agreed approach. **Until this stage has been completed we consider this compliance action to still be ongoing.**	Medium
		In terms of habitat fragmentation, a section of the reinjection pipeline (ie 2.5km from access road to well pad B) alongside the access roads, is noted to form a complete loop around a portion of the forest habitat. This could be a form of fragmentation, given that corridors of movement for fauna would be affected. In the ESIA, this effect is recognised with mitigations in form of above- or under-crossings along the pipeline proposed as a feature to be further developed during detailed design.	The ESIA committed SERD to ensure that within the detailed construction plans of the reinjection pipeline (to well pad B) that appropriate opportunities for animal crossings (ie above or under) are identified and implemented. Of note, beside above- or under-crossings along the pipeline, opportunities for crossings catering to arboreal species should also be considered, if the clearing is observed to cause sufficient gaps within the forest canopy. Details for the implementation of this mitigation measure is included in the biodiversity action plan (BAP).	

[33] *Geothermal Power Plant Rantau Dedap in Lahat Regency, Maura Enim Regency and Pagar Alam City, South Sumatra Province: Critical Habitat Assessment*. Environmental Resources Management Siam, March 2017.

[34] *Geothermal Power Plant Rantau Dedap in Lahat Regency, Maura Enim Regency and Pagar Alam City, South Sumatra Province: Biodiversity Offset Strategy (version 3)*. Environmental Resources Management Siam, November 2017.

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
6.2	Critical Habitat Assessment	A CHA has been undertaken based on the Discrete Management Unit (DMU) comprising Mount Tabah, a contiguous tract of primary forest, in which the Project is partially located. Features which trigger habitat requirements include six mammal, one amphibian and two plant species. Of these, two are classified as IUCN Red List Critically Endangered (Malayan pangolin *Manis javanica* and Sumatran tiger *Panthera tigris sumatrae*) and three are classified as Endangered (Sumatran surili *Presbytis melalophos*, siamang *Symphalangus syndactylus* and Malayan tapir *Tapirus indicus*).	Mitigation measures to avoid and minimise adverse impacts on critical habitat trigger species are given in the CHA/BAP. No targeted off-setting measures for these species are given to demonstrate the net gain required under IFC PS6; however, a general offsetting process is described (see above) in the Biodiversity Offset Strategy (BOS). Stakeholder agreement is required that the BOS is compliant with PS6 and a BOMP will need to be produced (see 6.1 above). **Until this stage has been completed we consider this compliance action to still be ongoing.** Monitoring is referenced in the BAP; however, no details are given including methodology to demonstrate no measurable adverse impacts. The BOS states that further information will be included as part of the BOMP.	Medium
6.3	Legally Protected and Internationally Recognised Areas	The Project is not located directly within any legally protected or internationally recognised areas as defined by PS6.	N/A	N/A
6.4	Invasive Alien Species	The CHA identifies 36 invasive alien species (three plant and one mammal) which were recorded during the baseline surveys or identified from other datasets. No evidence of the occurrence of these species in the Project Area is provided or the potential risk of their introduction (both present and future) as a result of Project activities is given.	Locations of invasive alien species recorded within the Project Area is provided in the CHA. The production of an invasive alien species management plan is listed as an action within the BAP and has been completed.	Low
6.5	Biodiversity Action Plan (BAP)	An (updated) BAP has been produced. This comprises two documents: 1) Critical Habitat Assessment (including biodiversity baseline, ecosystem services, impact assessment and mitigation measures); 2) Details of actions. It is not clear if these represent a revised format for the BAP; however, it is noted that this does not allow for ease of reference or complicity. The overall purpose of a BAP is draw together all relevant information into a single document; by splitting it over two this aim has been lost. The current format is not considered 'user friendly' for future dissemination amongst shareholders. It is recommended that the single format approach previously followed by Greencap is reinstated for future revisions.	A BAP has been produced as required under PS6 where Critical Habitat has been identified. The combined CHA/BAP documents include all necessary sections. The BAP actions are given in outline only; further details are required have been or will be presented in supporting documents, including the BOS and BOMP, as the Project progresses.	Low

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
6.6	Ecosystem Services	An ecosystem services assessment was not included within Phase I documents (ie IEE, the SCAR or the UKL-UPL). A very brief commentary on ecosystem services was included within Phase II's ESIA, which only mentions that possible impacts on water resources (ie provisioning service – freshwater) will be negligible (in line with the water availability assessment in the ESIA). Evidence gathered during the site visit indicates that aside from areas of land acquired which were used for agricultural practices (and therefore compensated for), the areas where the well pads and other key Phase I components are situated, are not routinely used for other provisioning services (eg forest goods, food). For Phase II components (eg well pad L, M, N and X), given that they are located in high altitudes areas with poor accessibility (ie prior to construction of Project access roads), any existing usage by local communities is likely to be limited. In any event, any livelihood impacts due to the Project will be assessed and managed through the Project's livelihood restoration activities (ie ISDP). In practice, ecosystem services impacts (particularly regulatory and supporting) are largely managed through successful implementation of environmental management measures to mitigate degradation of the environment (which in turns prevent adverse changes to ecosystem services capacity). Hence, risk of such impacts is considered to be low, provided that the committed mitigations are robustly implemented.	No compliance gaps identified at this stage, as impacts and monitoring are expected to be covered within other management plans of the Project.	Low
Performance Standard Seven: Indigenous Peoples				
Aims to ensure that developers respect and preserve the rights, culture, practices, and livelihoods of Indigenous Peoples in the course of project activities				
7.1	Indigenous Peoples Screening	The 2014 SCAR noted that the majority of people affected by land acquisition and residing within the WKPB were Semendo and considered Indigenous Peoples (IP) in accordance with IFC PS7. SERD presented additional information within the ESIA for the Project which drew the conclusion that the Semendo should not be considered as IP. Mott MacDonald undertook an assessment of these conflicting positions (provided within Appendix D) which concluded that there was insufficient information to justify a change in the classification of the Semendo people from Indigenous to non-Indigenous People. SERD engaged PT Inti Hexta Semesta (IHS) to facilitate a detailed IP screening exercise to produce a definitive conclusion based upon document review, consultation with members of the local community, engagement with recognised government and academic experts with a background in IP matters in South Sumatra. This included: • Field research conducted within the villages/sub-villages of Segamit, Rantau Dedap, Tunggul Bute and Karang Endah from 6 to 12 July 2017. This included observations, interviews and in-depth interviews with a range of community members • A focus group discussion style meeting on 26 July 2017 held in Palembang. This included IP experts and academics, government officials, community leaders and other representatives from the local community.	A detailed IP screening report has been developed based upon consultation with representatives of the community and recognised experts on IP within South Sumatra. As the outcomes of this indicate that there are no IP's in the Project area further consideration of PS7 is not required.	Low

No.	Performance Standard	Project setting/background	Compliance review	Risk ranking
		This report concludes that while the Semendo people within the Project area have a strong societal tradition in many aspects, it does not meet the definition of IP as contained within IFC PS7 as applied to the Indonesian context (ie having regard for cultural and regulatory perceptions as to what constitutes an IP. A summary and Mott MacDonald's commentary on this report is provided within Appendix E. Based upon this report, Mott MacDonald considers a robust case has been put forward to conclude that the Semendo people within the Project area do not meet the definitions of IP as contained within IFC PS7 and the prevailing regulations within Indonesia. As a result, further application of PS7 to the Project is not considered necessary.		
7,2	Avoidance of adverse impacts	As there are no IP within the WKPB, this aspect is considered not applicable to the Project	N/A •	Low
7.3	Participation and Consent	As there are no IP within the WKPB, this aspect is considered not applicable to the Project	N/A	N/A
7.4	Mitigation and Development	As there are no IP within the WKPB, this aspect is considered not applicable to the Project	N/A	N/A
Performance Standard Eight: Cultural Heritage				
Aims to ensure that developers protect cultural heritage in the course of project activities				
8.1	Protection of cultural heritage in design and execution	The EISA note that's there are no known items of tangible or intangible in proximity to any aspects of the Project. During the site visit it was noted that there are no known tangible items of cultural heritage within the Project area.	No compliance gaps identified at this stage	Low
8.2	Chance find procedure	SERD has submitted a chance finds procedure which it intends to implement during all ground disturbing works. This document is consistent with the requirements of PS8	No compliance gaps identified at this stage	Low

Source: Mott MacDonald

3.5 JBIC and NEXI

This section presents comments on the Projects compliance to JBIC and NEXI Guidelines, using the framework of the JBIC Environmental Checklists for “Other Electric Generation” (Table 11) and “Pipelines” (see Table 12).

It is noted that the JBIC Transmission and Distribution checklist will also apply to the Project, specifically with regards to the Transmission Line. However, at this stage limited information is known regarding the environmental and social impacts of the Transmission Line (ie an AMDAL and land acquisition plan is not yet available) and it has not been assessed within the scope of the existing ESIA.

Table 11: Compliance review: JBIC and NEXI - Other Electric Generation Checklist

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
1: Permits and Approvals, Explanations				
1.1: ESIA and Environmental Permits				
1.1.1	Have ESIA reports been officially completed? Have ESIA reports been written in the official language or a language widely used in the country of the host country?	For Phase I, an UKL-UPL covering the initial design of the exploration drilling (ie Phase I – well pad B, C and C) was produced and approved in 2011. A subsequent addendum was also produced in 2014 covering the additional well pad I. For Phase II, an KA-ANDAL (ie scoping report) was approved on 5 September 2016. Subsequently, an AMDAL was produced in November 2016, and subsequently submitted. The AMDAL approval and Environmental Permit have been obtained on 15 March 2017. The Environmental Permit has been provided for review, and shows that all well pads and wells (ie both existing and proposed) have been included in its scope. An ESIA has also been produced, which is intended to provide additional information and assessment beyond that presented in the AMDAL and thus meet international environmental and social requirements.	No compliance gaps.	Low
1.1.2	Have ESIA reports been approved by the government of the host country?	AMDAL reports have received approval and an Environmental Permit has been granted.	No compliance gaps.	Low
1.1.3	Have ESIA reports been unconditionally approved? If conditions are imposed on the approval of ESIA reports, are the conditions satisfied?	The Environmental Permit contains conditions based on the measures proposed in the RKL-RPL reports. These conditions are being satisfied by the ongoing bi-annual monitoring reports that are to be produced.	No compliance gaps.	Low
1.1.4	In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	The Project has obtained Geothermal Licence (IPB) (or WKP), which is valid from December 2010 till December 2045, and has also recently obtained the second extension of exploration period (till December 2017). The Project maintains a permit register (see Appendix A), which do not show any critical risks or gaps at this point. Key items to be obtained prior to construction commencement includes: • Borrow and Use Permit of Forest Area (ie IPPKH) • New FMP required for use of land within Protection Forest	No compliance gaps, but renewal are required for the following: • borrow and use permit of forest area (IPPKH) • forest management plan	Low
1.2: Explanations to the public				

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
1.2.1	Is the project accepted in a manner that is socially appropriate to the country and locality throughout the preparation and implementation stages of the project based on sufficient consultations with stakeholders, such as local residents, conducted via disclosure of project information and potential impacts?	The Draft ESIA and SEP details the extensive consultation process which has been undertaken by SERD since entering the area in 2008.Through use of the community liaison officers (CLO) and other key SERD personnel, leveraging key community figures (such as village and hamlet heads) and the Village Forum, open and transparent disclosure of project information has been continually provided. All stakeholders interviewed noted the continual presence of the SERD CLOs in the area, described appreciation for the corporate social responsibility (CSR) programmes implemented to date, and the smooth and transparent nature of the land acquisition process. Importantly, village and hamlet heads demonstrated a high awareness of the current project status (essentially care and maintenance) which is indicative of a transparent and informative disclosure strategy by SERD There is no record of public disclosure of the most recent AMDAL or the draft ESIA has been undertaken with local stakeholders. The SEP specifically notes that this will be undertaken with affected communities, village leaders, traditional institutions, government agencies, NGO's and contractors. The outcomes of this process will need to be reported to the Lenders. It is, however, noted that the Project's ESHIA for has been disclosed on ADB website on February 2017 to comply with the 120-day disclosure requirement of SPS for project categorized as 'A' for environment.	No compliance gaps to date	Low
1.2.2	Are the records of such consultations with the stakeholders, such as local residents, prepared?	The Draft ESIA and SEP details the extensive consultation process which has been undertaken by SERD since entering the area in 2008. While Table 60 of the ESIA notes the key issues raised (eg impacts during construction and operation, dust, noise and outside labour conflicts, and the possibility of cultural shift in society such as a change from agrarian to industrial community) during stakeholder engagement, insufficient information is contained within the ESIA describing how or where these have been addressed throughout the ESIA. This needs to be included within the ESIA and then form part of the ESIA disclosure activities. The Stakeholder Engagement Log has been provided for review. It appears to be provided in MS Word format and tracks only multi-stakeholder meetings and events. During the site visit, it was shown that the Community Liaison Officer (CLO) plays an active role in the community, consistently meeting with village heads and land holders. These smaller meetings have not been included within the Stakeholder Engagement Log and the log is therefore not reflective of all the engagement that has taken place.	Section 9 of the ESIA should be updated to describe how stakeholder feedback received to date has been integrated in the Project design and impact assessment process, and the design and development of management, mitigation, and monitoring measures. Stakeholder engagement log to be developed to track and report on all stakeholder engagement activities – including any informal and one-on-one meetings	Medium
1.2.3	Are the written materials for the disclosure prepared in a language and form understandable to the local residents?	There is no record of public disclosure of the most recent AMDAL or the draft ESIA has been undertaken. The SEP specifically notes that this will be undertaken with affected communities, village leaders, traditional institutions, government agencies, NGO's, and contractors. This will need to be undertaken in Bahasa Indonesia and include a non-technical summary document to be disclosed to local communities. The SEP identifies womens organisations as key stakeholders, however it must also expand the definition of vulnerable people to include not just affected people, but also vulnerable people residing within the villages and sub villages identified in the list of	A non-technical summary of the Project and the ESIA outcomes and management measures need to be prepared in Bahasa Indonesia and provided to lenders for review prior to being disclosed to affected communities The SEP needs to be revised to state how reporting will be made available to all people (including vulnerable people and womens groups) through appropriate outreach methods.	Medium

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
		stakeholders (Table 20 of the SEP). This must be done to ensure that all people are provided with the opportunity to participate in project engagement activities.	It is, however, noted that the Project's ESHIA for has been disclosed on ADB website on February 2017 to comply with the 120-day disclosure requirement of SPS for project categorised as 'A' for environment.	
1.2.4	Are ESIA reports available at all times for perusal by stakeholder such as local residents, and copying of the reports permitted?	Table 60 of the Draft ESIA summarises past engagement and disclosure activities. It describes the dissemination of information regarding the project, SERD policies, the grievance mechanism, details regarding the land acquisition process and livelihood restoration activities. All reports prepared and disclosed to date are provided on the Asian Development Bank (ADB) website, however these are all in English only and not considered readily accessible to the local community. In accordance with the SEP, SERD must prepare and disclose in an accessible manner a non-technical summary of the ESIA.	A non-technical summary of the Project and the ESIA outcomes and management measures need to be prepared in Bahasa Indonesia and provided to lenders for review prior to being disclosed to affected communities	Medium
1.2.5	Are proper responses made to comments from the public and regulatory authorities?	Refer to Row 1.2. above	Compliance gap	Medium
2: Anti-Pollution Measures				
2.1: Air Quality				
2.1.1	Do air pollutants, such as hydrogen sulfide emitted from geothermal power plants comply with the country's standards? Is there a possibility that emitted hydrogen sulfide will cause impacts on the surrounding areas, including vegetation?	The AECOM Atmospheric Dispersion Modelling (ADM) report[35] uses H_2S concentrations based on a separate SERD memo (August 2016)[36]. This memo presents calculations of the likely H_2S content of the steam, based on well testing data from six wells at Rantau Dedap and includes three scenarios of NCG concentrations (low, medium and high gas). The memo states that the 'medium gas' scenario is the most likely, but that the plant should be designed for the 'high gas' scenario "just in case". This approach is conservative as it assumes the steam contains the maximum H_2S content and therefore has the highest H_2S emissions. It is therefore considered appropriate. Mott MacDonald has not reviewed the accuracy of the NCG and H_2S content calculations, however the general calculation approach and assumptions made appear to be suitable. The calculations demonstrate that emissions of H_2S from the cooling towers during the power plant operation will be below the applicable Indonesian standard of 35mg/Nm^3. The emission calculations appear robust. There is no applicable IFC emission standard for H_2S and therefore only the national emission standard applies. No calculation of well testing emission rates has been presented within the ADM report and is therefore not possible to demonstrate compliance of these rates with the Indonesian emission limit.	The ADM report should compare modelled results against the WHO guideline for H_2S and the IFC '25% rule'. However, based on the modelled results, inclusion of these comparisons would not result in any exceedances or non-compliances and therefore their omission is not considered a material risk to the project.	Medium
2.1.2	Is there a possibility that air pollutants emitted	Indonesia does not have an ambient air quality standard for H_2S but instead has a standard for odour (0.02ppm, equivalent to 28µg/m^3). The AECOM ADM report assumes that the	Additional baseline monitoring (ie 24-hour H_2S and 48-hour noise) was reportedly undertaken between	Low

[35] AECOM (August 2016). Dispersion Modelling of Cooling Tower Plumes at Rantau Dedap Geothermal Power Plant Air Dispersion Modelling (ADM) Report.

[36] Supreme Energy Rantau Dedap Internal Memorandum, 5 August 2016 Re: Rantau Dedap – H_2S level prediction

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
	from the project will cause areas that do not comply with the country's ambient air quality standards?	Indonesian ambient H_2S standard for odour is a 24-hour standard, however, as determined from the measurement method stated in MOE Decree 50/1996, the standard is a 2-hour average. The MOE also consider this standard unsuitable for use in geothermal areas, as it was designed to protect against odour in areas without natural H_2S sources. IFC General EHS Guidelines state that where nationally legislated host country standards do not exist, international guidelines should be used instead. The World Health Organisation (WHO) has a 24-hour guideline for ambient H_2S for the protection of health (150µg/m^3), which is identified in the AECOM report. However the AECOM report does not apply the WHO guideline to the project and instead applies the Indonesian odour standard over a 24-hour period. The report should identify odour standards and human health standards separately. However, as the application of a 28µg/m^3 24-hour standard is more stringent than applying the 150µg/m^3 WHO guideline 24-hour standard, this approach does not present a material risk to the project's compliance with the IFC EHS Guidelines. Indonesia also has an occupational H_2S exposure limit of 14,000µg/m^3, set by the Ministry of Manpower, which is averaged over an 8-hour period and has been designed to protect the health of workers. It is therefore applied at locations where employed people are present for a typical working day. This standard is applied in the AECOM report, which is appropriate. Applicable standards (including the WHO Guideline for H_2S) are included in Schedule B.15 (Environmental Compliance Norms) of the draft EPC Contract. No calculation of production testing emission rates has been presented within the ADM report. However, under the context that the power plant emissions had shown compliance when modelled, it is unlikely that production testing is would cause exceedance, since: • the nearest residential area is more than 5km from any production wells (ie production testing only takes place at production wells), which is much farther than closest receptors to the power plant (ie 800m) • the emissions of atmospheric flash tank (AFT) used for testing would likely be lower than the power plant emission modelled (ie wells are individually tested one, while power plant operation emits emissions from all production wells)	30 October and 4 November 2017 to supplement the data collected in July 2016. Future iterations of regular monitoring report should be use these results as the baseline for compliance monitoring. Compliance for production testing can be inferred, as the modelled results of the power plant operations (ie with greater emissions and closer proximity to receptors) are already compliant.	
2.1.3	Are adequate measures taken to reduce GHG emissions from the project?	The NCG content of geothermal steam is predominantly made up of CO_2; therefore the Project will emit CO_2 during the operational phase. However, as a geothermal energy Project, the Project has substantially lower GHG emissions than the most likely alternative for energy generation in this region (ie a coal fired power plant). Calculations presented in the ESIA show that annual CO_2 emissions from the project are estimated to be 41,475 tons CO_2/year.	GHG emissions have been accurately quantified and are substantially lower than the fossil-fuel alternative	Low
2.2: Water Quality				
2.2.1	Do effluents (including thermal effluent) from various facilities, such as power generation facilities comply with the	No effluent will be released to the environment as all drilling water will be reinjected, while domestic wastewater (during both construction and operation) are to be treated via septic tanks. The Project is not expected to cause areas to not comply with ambient water quality standards.	No compliance gaps.	Low

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
	country's effluent standards? Is there a possibility that the effluents from the project will cause areas that do not comply with the host country's ambient water quality standards?			
2.2.2	In the case of geothermal power plants, is there a possibility that geothermal utilization will cause water pollution by pollutants, such as As and Hg contained in geothermal fluids? If water pollution is anticipated, are adequate measures considered?	Analysis of geothermal fluids has shown low concentrations of arsenic (As) and mercury (Hg. In addition, several measures are in place to avoid water pollution, including: • Reinjection of drilling water instead of discharge to the environment • Use of HDPE lined ponds to store geothermal drilling water prior to reinjection • Use of cement casing during drilling to prevent potential contamination of groundwater	No compliance gaps.	Low
2.2.3	Do leachates from the waste disposal sites comply with the host country's effluent standards and ambient water quality standards? Are adequate measures taken to prevent contamination of soil, groundwater, and seawater by leachates?	Measures preventing leachate from entering the ground includes: • Domestic solid waste from the Project workforce is disposed of via municipal waste collection services • Drilling cuttings are stored in HDPE lined ponds or, once dried, concrete storage bunkers prior to re-use. No leachates are expected from the drilling cuttings.	No compliance gaps.	Low
2.2.4	Does the quality of sanitary wastewater and stormwater comply with the host country's effluent standards?	All domestic wastewater are to be treated via septic tanks. The AMDAL and Environmental Permit require that there is no discharge of effluents to water courses.	No compliance gaps.	Low
2.2.5	Are adequate measures taken to prevent contamination of surface water and groundwater by the effluents? Is there a possibility that the	Drilling water is piped to the mud pond and water pond before being reused in drilling or reinjected. The re-use of drilling water reduces the Project's water consumption. Mud and water ponds are well designed, HDPE-lined and are regularly emptied by reinjection into wells to maintain sufficiently low water levels to avoid the risk of overflow. In addition, analysis shows this waste water complies with effluent standards	No compliance gaps.	Low

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
	effluents from the project will cause areas that do not comply with the country's ambient water quality standards?	and therefore in the unlikely event of a pollution episode the impact on water quality would not be significant. The use of casing in well construction is another inherent safety feature included in the Project's design; this minimises the risk of any pollution of groundwater.		
2.3: Waste				
2.3.1	Are wastes generated by the plant operations properly treated and disposed of in accordance with the laws and regulations of the host country?	A waste management plan is included in Supreme Energy's SOPs. Overall, appropriate measures are in place to handle both non-hazardous (ie including drilling cuttings) and hazardous waste materials produced on site. Waste management procedures, including for the disposal and reuse of drilling cuttings, are documented in the Project's ESMP.	No compliance gaps.	Low
2.4: Soil Contamination				
2.4.1	Has the soil at the project site been contaminated in the past, and are adequate measures taken to prevent soil contamination?	The Project is predominantly located within natural forest with any areas that were previously used to be coffee plantation. Sampling at the Project site indicates that contamination is not an issue. The site is not considered to have previously been contaminated and existing soil contamination is therefore not an issue. Existing measures to mitigate future contamination risks (eg HDPE liners, spill response) are currently proposed or already in place.	No compliance gaps.	Low
2.5: Noise and Vibration				
2.5.1	Do noise and vibrations from the operation comply with the host country's standards?	Most of the Project activities (eg drilling, construction, power plant operations) are considerably far from receptors (ie at least 1km or more). The closest receptor to Project construction activities is Dusun IV at 500m away from the hardfill borrow area. Noise impacts from these activities are unlikely to be significant. However, the Project access route pass by several villages (eg Tunggul Bute) whereby there is potential to exceed night time noise limits due to the traffic noise, because of the scheduling of mobilisation to take place at night (ie to avoid congestion and safety considerations). This impact needs to be more effectively monitored and mitigated	Construction traffic has potential to cause significant noise impacts, and should be mitigated by: • Socialisation of mobilisation plan to affected villages • Revised assessment of noise levels as based on mitigations (eg speed, scheduling) to demonstrate possible compliance • Noise monitoring during night time mobilisation	Medium
2.6: Subsidence				
2.6.1	In the case of withdrawal of a large volume of groundwater, is there a possibility that it will cause subsidence?	The Project aims to balance extraction and reinjection to maintain pressure within the geothermal field. There is no increase in the risk of subsidence.	No compliance gaps.	Low
2.7: Odours				

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
2.7.1	Are there any odor sources? Are adequate odor control measures taken?	H_2S is the primary odour source from geothermal power plants. The H_2S ambient air quality standard in Indonesia is designed to protect against odour rather than human health and therefore by ensuring that H_2S releases are minimised to protect human health, odour issues will also be managed. Our understanding of similar geothermal projects in Indonesia is that the odour standard for H_2S is not generally enforced in relation to geothermal power projects, as this was not the intention regarding the development of the standard.	No compliance gaps.	Low
3: Natural Environment				
3.1: Protected Areas				
3.1.1	Is the project site located in protected areas designated by the host country's laws or international treaties etc.? Is there a possibility that the project will significantly affect the protected areas?	The Project Area is located within a nationally designated Protection Forest (Hutan Lindung). This designation is primarily for the protection of ecosystem services (such as erosion and watershed management) and not directly for nature conservation. The Project Area is not considered likely to significantly affect the function of the designated area.	No compliance gaps.	Low
3.2: Ecosystem and Biota				
3.2.1	Does the project cause significant conversion or significant degradation of forests with important ecologically value (including primary forests and natural forests in tropical areas) and habitats with important ecological value (including coral reefs, mangrove wetlands and tidal flats)?	The Project will result in the conversion of a significant area (67.13ha) of primary forest which is considered to be of important ecological value due to the presence of IUCN Red List Critically Endangered and Endangered species.	The Project will result in significant conversion of Natural Habitat. The mitigation hierarchy has been and will be applied to avoid, minimise and restore (temporary) impacted areas. Offsetting will be undertaken to achieve a no net loss/net gain for biodiversity.	High
3.2.2	In case the projects involve the significant conversion or degradation of natural habitats including natural forests, is the avoidance of impacted considered preferentially? If the impacts are unavoidable,	The Project will avoid, minimise and restore impacted habitats where possible. Permanent loss of habitat due to the construction of Project infrastructure is unavoidable. Mitigation measures are described in a BAP, including the procedure to undertake off-setting.	Appropriate mitigation measures are being and/or will be implemented. Compliance is considered to be ongoing until the final offsetting strategy has been agreed and it can be demonstrated that no net loss/net gain can be achieved.	Medium

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
	will the appropriate mitigation measures be taken?			
3.2.3	Will the evaluation of the impacts on natural habitats by the project and consideration for the offset measures be carried out based on expert opinion?	A biodiversity offset strategy[37] has been prepared to evaluate various options to achieve no net loss for Natural Habitat and a net gain for species of high conservation importance. On agreement of the final option a biodiversity offset management plan will be produced to outline how this will be implemented. Consultation with relevant stakeholders has been undertaken and the process follows international best practice (Business and Biodiversity Programme).	Compliance is considered to be ongoing until the final offsetting strategy has been agreed.	Medium
3.2.4	Is the illegal logging of the forest avoided?	Security checkpoints controlling access into the Project Area to prevent illegal logging have been implemented since the beginning of the Project and will continue for its duration. Illegal logging prevention measures through security control and community engagement had also been described in the previous FMP (ie 2012-2017). Such similar measures are expected to continue feature in the next iteration of the FMP (ie 2017-2022).	No compliance gaps.	Low
3.2.5	Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties etc.?	The Project Area does not include habitats of endangered species protected by laws or international treaties. However, it is considered a Tiger Conservation Landscape (World Wildlife Fund, 2013)[38]. The Project Area is known to support two species classified as IUCN Red List Critically Endangered (Malayan pangolin *Manis javanica* and Sumatran tiger *Panthera tigris sumatrae*) and three species classified as Endangered (Sumatran surili *Presbytis melalophos*, siamang *Symphalangus syndactylus* and Malayan tapir *Tapirus indicus*).	Mitigation measures to avoid and minimise adverse impacts on critical habitat trigger species are given in the CHA/BAP. No targeted off-setting measures for these species are given to demonstrate the net gain required under IFC PS6; however, a general offsetting process is described (see above). Monitoring is referenced in the BAP; however, no details are given including methodology to demonstrate no measurable adverse impacts. The BOS states that further information will be included as part of the BOMP.	High
3.2.6	If any adverse impacts on ecosystem are predicted, are adequate measures taken to reduce the impacts on ecosystem?	Measures to reduce the impacts of the Project are outlined in a BAP and ESHIA. These are considered adequate; however, agreement on the final BOS has not been completed and the BOMP must demonstrate how no measurable no net loss/net gain will be achieved.	A BAP has been produced as required under PS6 where Critical Habitat has been identified. The combined CHA/BAP documents include all necessary sections. The BAP actions are given in outline only; further details are/will be provided in supporting documents such as the alien invasive species management plan and BOMP. Compliance is considered to be ongoing until the final offsetting strategy has been agreed.	Medium
3.3: Hydrology				

[37] ERM. (2017). Geothermal Power Plant Rantau Dedap in Lahat Regency, Maura Enim Regency and Pagar Alam City, South Sumatra Province: Biodiversity Offset Strategy (version 3). Environmental Resources Management Siam, November 2017.

[38] World Wildlife Fund (2013) Tiger Landscape Data and Report. Available URL: https://www.worldwildlife.org/publications/tiger-conservation-landscape-data-and-report

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
3.3.1	Is there a possibility that hydrological changes due to installation of structures, such as weirs will adversely affect the surface and groundwater flows (especially in "run of the river generation" projects)?	River crossings (of roads) over significant waterways were constructed as permanent structures (ie bridges, gabion walls, stabilised slopes). The existing water intakes did not appear to have potential to significantly amend the surface flow. No new water intakes are planned to be constructed.	No compliance gaps.	Low
3.4: Topography and Geology				
3.4.1	Is there a possibility that the project will cause a large-scale alteration of the topographic features and geological structures in the surrounding areas (especially in run-of-river dams projects and geothermal power generation projects)?	The Project has is relatively small physical footprint (115ha). The Project is not expected to cause a large-scale alteration of topographic features.	No compliance gaps.	Low
4: Social Environment				
4.1: Resettlement				
4.1.1	Are involuntary resettlement and loss of means of livelihoods avoidable by project implementation? If unavoidable, are efforts made to minimize the impacts caused by the resettlement and loss of means of livelihoods?	**SERD led land acquisition** The Project has been situated and designed to avoid displacement impacts and has not resulted in any physical displacement. SERD actively attempted to achieve negotiated settlements with all land owners. In cases where such an outcome was not able to be achieved, SERD identified alternatives to the Project's design. While not specifically stated within any Project documentation, SERD has stated there were at least two cases where realignment of the road design was undertaken where a negotiated settlement with a land user was not able to be achieved. Based on the evidence presented within the SCAR and through the ESDD process, no evidence of any legal disputes or expropriation of land was uncovered. SERD has completed all land acquisition required for the Project, as described within Appendix C. This includes all compensation payments and receiving relevant certificates and permits from the Government of Indonesia. **PLN led land acquisition** PLN is leading the land acquisition for the TL which involves securing land for 116 towers (either 225m2 or 400m2 depending on final design) and a 20m wide right of way (ROW) for the entire 39km length. 78 towers are situated on private land, with a total of 38 located within the Protection Forest. 36 of the towers within the Protection Forest will also be within the WKPB. Based upon outcomes of discussions with PLN project design to date has	SERD has completed all land acquisition required for the Project and achieved negotiated settlements for all transactions. The land acquisition for the TL is being led by PLN who have expropriation powers and have noted they will use these where necessary. As this is an associated facility, SERD is likely to have limited ability to require PLN to ensure negotiated settlements for all land transactions. Mott MacDonald that the local regulatory framework (described within Appendix C) be used as the Compliance Framework for this associated facility. This must be supplemented by additional activities from SERD where uncompensated livelihood impacts occur to affected households within the WKPB. This is described within Item 4.1.1 below. It is also recommended that SERD seek monthly updates from PLN as to the status of the land acquisition as means to monitor compliance with	Medium

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
		avoided any physical displacement, however land valuations and payments have not yet occurred. A description of the legal mechanisms through which PLN will acquire the land is provided in Appendix C and covered in detail within the 2018 SCAR. The legal mechanisms which PLN will utilise (as described within Appendix C) will mean that negotiated settlements will not be achieved as PLN intends to resort to expropriation powers available to it to ensure it meets its obligations under the PPA. For sections of the TL outside of the WKPB, both SERD and Mott MacDonald consider that SERD will have limited ability to influence PLN to comply with all aspects of PS5. Description of the aspects of the TL land acquisition relevant to compliance with principles of replacement cost, consultation and livelihood restoration are described below.	the applicable regulatory framework, coupled with an assessment of overall impacts to livelihoods.	
4.1.2	Are the people affected by the project provided with adequate compensation and supports to improve their standard of living, income opportunities, and production levels or at least to restore them to pre-project levels? Also, is prior compensation at full replacement cost provided as much as possible?	**ADEQUACY OF COMPENSATION** **SERD led land acquisition** SERD has previously undertaken, and presented to the ADB for disclosure, a detailed analysis of the land acquisition process between 2011 and 2014. This is provided as Appendix **Error! Reference source not found.**. Additionally, Mott MacDonald prepared a social compliance audit report which, among other matters, has assessed the land acquisition and livelihood restoration activities undertaken from 2014 to 2017. Key outcomes from these reports relating to compensation include: • A total of 157 HH's have been economically displaced by project land acquisition activities to date (hereafter referred to as affected households – AH). 100% negotiated settlements were achieved. Where negotiations with land owners did not achieve a negotiated outcome, SERD sought to redesign aspects of the Project to avoid expropriation.. • All payments have been made to the AHs in accordance with the negotiated amounts and there are no pending complaints or legal cases relating to the land acquisition • The land and crop compensation amounts agreed to with the 57 AH's utilising privately held land were significantly higher than the rates outlined within the South Sumatra Government Decree No 25/2009. This provides a basis for land prices of 1,350 to 4,050 IDR/m2 (compared to the agreed rates of between 6,500 and 20,000 IDR/m2), and coffee tree prices of between 19,125 and 34,138 IDR/tree (compared to the agreed prices of 45,000 to 65,000 IDR/tree) • Based upon prevailing laws, the 100 AH's utilising land within the Protection Forest have no legal entitlement to compensation for the land as they do not officially hold any form of ownership or use title. There is no legal mechanism which conferred SERD the right to provide compensation for the value of the land, and it therefore used the Governor of South Sumatra Decree No 25/2009 which provides a pricing guide for land and crop valuations. Both social compliance audits showed that SERD used prices for crops much higher than market rates (between 45,000 and 65,000 IDR for coffee trees compared to between 2,700 and 35,250 IDR within Decree 25/2009) as part of a negotiated settlement process which resulted in provision of compensation to non-titled land users which more than met replacement cost principles. Land owners interviewed during January 2018 noted that using the provided compensation they were able to purchase land of equal or greater area and with the ability to secure private legal title over	Based on the outcomes of the ESDD, the 2014 SCAR and 2018 SCAR, the Project is considered consistent with the replacement cost principles. Land acquisition for the TL is still ongoing. Prevailing regulations for private land are based on market valuations for land, assets, and crops. Non-titled land users within the Protection Forest are provided with compensation only for crops. To determine if concepts of market valuation are being adhered to it is recommended that SERD provide a copy of the KJPP's final report Land acquisition has led to economic displacement, the impacts of which SERD are committed to managing through its ISDP. Improvements to how programmes are designed and implemented is demonstrating higher participations rates of AHs in effective training. To secure full compliance with PS5, the following amendments must be incorporated into the ISDP and other documents (eg SEP) as required: The revisions to the ISDP must be undertaken as an Action Item as are to include: • Definitions of DPAP and IPAP must be clearly defined (see the action-item recommendations in Section 5.3.4). • Beneficiaries must be clearly defined under different components of the ISDP plan. Mott MacDonald suggests setting up different priorities for beneficiaries under the ISDP and CSR programs as follow: – Priority 1 (P1): those who are directly impacted by the Project land acquisition and having their impact extent above 10%	Medium

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
		• Local community members engaged with through the ESDD process who have been compensated have noted that fairness of the compensation levels and approach. There were no community protests during the land acquisition process, and no grievances raised since the land acquisition concluded • SERD has been implementing CSR type activities since 2012, and commencing in early 2016 has commenced implementation of an Integrated Social Development Plan which included livelihood restoration components. **PLN led land acquisition** The land acquisition for the TL being led by SERD will not result in a negotiated settlement outcome, however as described within the 2018 SCAR aspects of it will likely result in compensation at replacement value: • Land acquisition of the tower pad areas within private land will be undertaken in accordance with Law 2 /2012 and Presidential Regulation 71/2012 which contains provisions to undertake an independent valuation of land and assets to offer compensation at true replacement cost. Cash compensation only is provided, no additional benefits such as livelihood support is provided • Land within the ROW is not permanently acquired, rather PLN will secure an easement over the land in which a height restriction on crops and structures will be enforced. Compensation will be calculated in accordance with Ministerial Decree 38/2013, which generally provides compensation payments at 15% of assessed market value. Cash compensation only is provided, no additional benefits such as livelihood support is provided • For all AHs within the Protection Forest, compensation for both tower pads and the ROW will be provided in accordance with Decree 33/2016. This only provides compensation for crops and assets, not for the value of the land as they are considered non-titled land users. Cash compensation only is provided, no additional benefits such as livelihood support is provided. The concepts of market rates is based upon independent valuation undertaken by a registered independent and registered public valuation company (known as a *Kantor Jasa Penilai Publik* – KJPP). PLN has recently engaged a KJPP and it is recommended that SERD secure a copy of the final report. **LIVELIHOOD RESTORATION SUPPORT** **SERD led land acquisition** The Project is considered to have led to the economic displacement of 157 households. As noted in the below table, 98 households (HH's) have lost more than 10% of their land and are therefore considered to have experienced significant impacts. The SCAR 2014 also noted that 109 of these HH's are considered as vulnerable.	based on the 2017 SERD Land Procurement Documentation. – Priority 2 (P2): those who are directly impacted by the Project land acquisition and having their impact extent less than 10% based on the 2017 SERD Land Procurement Documentation. – Priority 3 (P3): those who are indirectly impacted by the Project (eg people living close to the Project fence-line and access roads), and are indirectly impacted due to the construction of associated facilities within the Project footprint which owned by different parities (eg transmission line people within the Project footprint). P3 beneficiaries would form part of what SERD generally refers to as CSR programmes. • Provide an overview of applicable standard requirements and commitments from SERD • Provide eligibility criteria and entitlement for participating in the ISDP programs • Provide a proposal procedure for requesting a specific ISDP programs • Provide stakeholder engagement strategies for ISDP programs • Role and responsibility description • Providing monitoring, evaluation, and reporting procedures • Provide budgets required to implement the project on a year by year basis • Provide time bound implementation schedule • Strengthen the disclosure of ISDP programs and procedures. Disclosure methods should be via handouts (eg invitation) and social media (WhatsApp's and phone texting). • Utilise the stakeholder engagement process to identify affected households still within the area who did not participate within the household survey and seek to attain baseline data and inclusion within the ISDP programmes. This is to include AHs within the Protection Forest area impacted by the TL acquisition process. The	

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking

Extent of Impact	HH's - Private Land	HH's - Protection Forest
0-10%	33	26
10-20%	17	30
20-50%	7	31
50% or more	0	13
Total	**57**	**96**

Source: SCAR 2014 (Greencap), Table 4.5 "Extent of Land Loss" & SCAR 2018 (Mott MacDonald) Table 3 "Summary of land owners involved in 2017 land acquisition"

As an outcome of the SCAR, SERD undertook a socio-economic baseline of project affected households to aid development of the ISDP. The survey which was conducted in October 2015 covered 122 households, including 78 households which are defined as being affected by the land acquisition phase. It also assessed the vulnerability of these affected households, and determined that there were 17 HH's considered as "most vulnerable". It also noted that many of the HH's had not effectively used their compensation payments to restore their livelihoods, eg money was primarily used for consumptive purposes (houses, vehicles, household goods), debt repayments and education expenses.

There were 153 households originally impacted by the land acquisition phase. This is a low coverage level (approximately 50%), and conversations with SERD indicated that this was largely due to many of the households who owned land not residing within the area, or were absent during the period of the survey. Through its ongoing stakeholder engagement activities, SERD should seek baseline data for people who still reside within the WKP area and surrounds and who did not participate in the initial survey.

The feedback gained through the socio-economic survey also included input into livelihood restoration measures to include in the ISDP. The ISDP is being utilised as a mechanism to improve or at least restore the livelihoods of project affected people, as well as provide broader project benefits (Corporate Social Responsibility, CSR, activities) to the surrounding communities. The document recommends a range of partner institutions to implement agricultural, vocational and services based livelihood assistance programmes. It also includes a safety net programme to allow vulnerable people to participate. The list of participants for the safety net programme is considered limited (17 people only compared to an overall total of 109 affected households defined as vulnerable within the 2014 SCAR) and it is not clear whether those listed are affected households or vulnerable households identified as occurring within the Project Area through the socio-economic baseline in 2015.

SERD initially engaged IHS in 2015 to develop the ISDP. This acts as a mechanism to improve or at least restore the livelihoods of project-affected people, as well as to provide broader project benefits to the surrounding communities. In addition to the ISDP, since 2013, SERD has been annually developing and carrying out their Corporate Social Responsibility (CSR) programs for affected communities. SERD's CSR programs focus on providing donations for schools and mosques, agricultural equipment, and seeds, and

extent of impacts and baseline data are to be used to determine the benefits to be made available to each AH.

- Develop a mechanism to track the participation of affected persons as employees of SERD, its contractors and service providers to measure contribution of project employment opportunities to livelihoods restoration
- Monitoring methodologies must specifically include affected people (rather than measuring overall ISDP performance) to determine if livelihoods are being restored to pre-impact levels or better
- Commit to producing a bi-annual stand-alone socio-economic monitoring report
- All of these amendments must also incorporate consideration of vulnerable people (specifically those defined as both vulnerable and project affected) as the core targets and beneficiaries of the ISDP

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
		developing local roads systems (see Appendix C for the list of CSR program implemented up to date). The ISDP is based on the two key components, including: (i) Community Capacity Building; and (ii) Livelihood Development. The Community Capacity Building Program aims to develop the capacity for the most affected communities through the building of life skills based on the employment needs of the local economy and the availability of local skills. The livelihood development aims to improve the livelihood of the most economically-unfortunate and vulnerable people. These programmes were targeted at the broader community with the WKPB in general rather than being specifically targeted at AHs and were based upon inputs collected from participants during a socio-economic and need surveys. The results of this survey demonstrated that in many cases, AHs had made ineffective use of their land compensation payments and recommended a range of partner institutions to assist in the implementation of agricultural, vocational and services based livelihood assistance programmes. It also includes a safety net programme to allow vulnerable people to participate. Initial implementation of the ISDP showed a low participation rate of AHs (as noted above). Taking lessons learnt from the 2016 coffee training programs, SERD organised a series of coffee training sessions specifically for AHs in December 2017. There were reportedly 87 participants in the 2017 sessions, which is a greatly increased participation rate from 2016. Different from the previous training, the 2017 program was targeted at directly affected people and vulnerable people (see Appendix D for the list of participants in the training). However, the training documentation does not record the status of the people participated within the programs, ie if they are defined as households affected by the land acquisition, or if they are vulnerable. The review of ISDP and outcomes of the consultation undertaken by Mott MacDonald in January 2017 and January 2018 showed that the livelihood restoration elements of the ISDP (primarily agricultural training such as improved coffee farming techniques and introduction of new types of fruits and vegetables considered appropriate for the setting) have been successful. Interviewed participants noted improved yields in coffee and general diversification of their livelihood strategies. SERD is utilising the outcomes of the ongoing monitoring processes to continually improve its programmes. Mott MacDonald has identified additional areas of improvement to ensure clarity of documentation and effectiveness of implementation and monitoring of the ISDP. In these regards, SERD must update the ISDP report so that it is a concise plan (at the moment, it includes outcomes of socio-economic baseline assessments and outcomes of consultation) which is focused in a manner that can address impacts to AHs and distribute Project benefits to the broader community in the most effective manner possible. The revisions to the ISDP must be undertaken as an Action Item as are to include: • Definitions of DPAP and IPAP must be clearly defined (see the action-item recommendations in Section 5.3.4). • Beneficiaries must be clearly defined under different components of the ISDP plan. Mott MacDonald suggests setting up different priorities for beneficiaries under the ISDP and CSR programs as follow:		

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
		– Priority 1 (P1): those who are directly impacted by the Project land acquisition and having their impact extent above 10% based on the 2017 SERD Land Procurement Documentation. – Priority 2 (P2): those who are directly impacted by the Project land acquisition and having their impact extent less than 10% based on the 2017 SERD Land Procurement Documentation. – Priority 3 (P3): those who are indirectly impacted by the Project (eg people living close to the Project fence-line and access roads), and are indirectly impacted due to the construction of associated facilities within the Project footprint which owned by different parities (eg transmission line people within the Project footprint). P3 beneficiaries would form part of what SERD generally refers to as CSR programmes. • Provide an overview of applicable standard requirements and commitments from SERD • Provide eligibility criteria and entitlement for participating in the ISDP programs • Provide a proposal procedure for requesting a specific ISDP programs • Provide stakeholder engagement strategies for ISDP programs • Role and responsibility description • Providing monitoring, evaluation, and reporting procedures • Provide budgets required to implement the project on a year by year basis • Provide time bound implementation schedule • Strengthen the disclosure of ISDP programs and procedures. Disclosure methods should be via handouts (eg invitation) and social media (WhatsApp's and phone texting). **PLN led land acquisition** For the TL, as compensation for towers and ROW in areas of private land is anticipated to be provided at true market and replacement rates, and given the small areas of land involved impacts to livelihoods are anticipated to be minimal. As SERD has limited ability to influence the decision-making processes of PLN outside of its WKPB, it is recommended that its obligations for livelihood restoration be limited to consulting with PLN and sub-district and village heads affected by the TL to ensure all AHs are able to access the sub-district level agricultural extension services that are funded by the Province of South Sumatra. Within the Protection Forest, as compensation is only being provided for crops and assets on the land, the principles of replacement costs are not being adhered to and the likelihood of livelihood impacts is therefore increased. Interviews with AHs from Rantau Dedap village (within the Protection Forest) indicated they would only be losing between 1 and 5% of their total productive land. To confirm the extent of livelihood impacts to all AHs within the Protection Forest SERD should undertake a basic socio-economic access to precisely define the nature and significance of impacts. As the majority of AHs within the Protection Forest are also within the WKPB (36 out of a total of 38) it is considered that SERD has sufficient degree of influence to include them within the ISDP as either P2 or P3 beneficiaries (based on the above recommended categorisation).		

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
4.1.3	Is the participation of the people affected and their communities promoted in planning, implementation, and monitoring of involuntary resettlement action plans and measures against the loss of their means of livelihood? In addition, will appropriate and accessible grievance mechanisms be established for the people affected and their communities?	**SERD led land acquisition** A livelihood restoration plan (LRP) was not produced prior to land acquisition being undertaken. Corrective actions as an outcome of the 2014 SCAR required SERD to develop a socio-economic baseline for project affected people, and develop effective livelihood restoration measures. This was undertaken in 2015, with ISDP implementation commencing in early 2016. The effectiveness of the ISDP in addressing impacts to AHs is described above. A grievance mechanism was put in place during the land acquisition period and was shown to be effective in receiving and addressing grievances. A total of five grievances were received between August 2012 and April 2014. Based on a review of the Grievance Log, all were resolved in collaboration with a number of different parties (including village heads and the land agency) and within a two-week period. SERD still implements its Grievance Mechanism and it has been shown to be widely accessible within the community. Areas of improvement have been identified to ensure full compliance. **PLN led land acquisition** An LRP was not produced by PLN as part of the TL land acquisition. As no livelihood restoration benefits are to be provided (in accordance with prevailing regulations), PLN has stated that it will not develop such a plan. As described within Item 5.7 below, livelihood impacts to AHs in both private and protection forest land are anticipated to be minimal. SERD must assess the extent of livelihood impacts to AHs within the Protection Forest area and provide them with access to the ISDP (see below). PLN has not noted how it has disclosed the regulatory grievance mechanism or if any grievances regarding the land acquisition process have been lodged to date. The grievance mechanisms put in place by the Indonesian regulations applicable to the TL land acquisition are consistent with the requirements of SR2	Initial concerns relating to ineffective engagement with AHs leading to low participation in livelihood restoration programmes have been overcome and overall SERD has shown strong commitment to including affected people within planning, implementation and monitoring of livelihood restoration activities. It has also continued to implement its grievance mechanism as it applies to the land acquistition and livelihood restoration processes It is recommended that as part of the monthly meeting with PLN, that SERD seek an update on the number and status of any grievances lodged. Based on representation from PLN and outcomes of interviews with AHs in the Protection Forest indicate that consultation undertaken to date has been carried out in accordance with the requirements of Indonesian regulations and PS5. It is recommended that within the scheduled monthly meetings with PLN that SERD seek notification of any planned and recently undertaken consultation.	Medium
4.1.4	Is the resettlement action plan (including livelihood restoration plan as needed) prepared and disclosed to the public for the project which will results in a large-scale resettlement or large-scale loss of means of livelihood?	**SERD led land acquisition** A livelihood restoration plan (LRP) was not produced prior to land acquisition being undertaken. Corrective actions as an outcome of the 2014 SCAR required SERD to develop a socio-economic baseline for project affected people, and develop effective livelihood restoration measures. This was undertaken in 2015, with ISDP implementation commencing in early 2016. The effectiveness of the ISDP in addressing impacts to AHs is described further within Item 4.1.2 above. **PLN led land acquisition** An LRP was not produced by PLN as part of the TL land acquisition. As no livelihood restoration benefits are to be provided (in accordance with prevailing regulations), PLN has	Changes to the ISDP document are recommended under economic displacement (Item 4.1.2 in this Table) to assure effectiveness of livelihood restoration implementation and monitoring. This must include assessment of impacts to AHs within the Protection Forest impacted by the TL land acquisition.	Medium

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
		stated that it will not develop such a plan. As described within Item 5.7 below, livelihood impacts to AHs in both private and protection forest land are anticipated to be minimal. SERD must assess the extent of livelihood impacts to AHs within the Protection Forest area and provide them with access to the ISDP (see 4.1.2 above).		
4.1.5	In preparing a resettlement action plan, is consultation made with the affected people and their communities based on sufficient information made available to them in advance and is explanations given in a form, manner, and language that are understandable to the affected people?	Refer to Row 4.1.3 and 4.1.4 above	Refer to Row 4.1.3 and 4.1.4	Medium
4.1.6	Has appropriate consideration been given to vulnerable social groups, such as women, children, the elderly, the poor, and ethnic minorities in the resettlement action plan?	Refer to Row 4.1.3 and 4.1.4 above	Refer to Row 4.1.3 and 4.1.4	Medium
4.1.7	Are agreements with the affected people obtained prior to the resettlement?	**SERD led land acquisition** As confirmed within the 2014 SCAR, all 153 AHs impacted by the land acquisition between 2011 and 2014 received all necessary compensation prior to experiencing economic displacement. The four AHs from the 2017 land acquisition for the SERD permanent accommodation facility were all interviewed during January 2018 field work and stated that they all received payment in accordance with the negotiated compensation value. While SERD have not yet commenced activity on these sites, all AHs have signed documentation noting that they have received compensation and have relinquished any future claims to the land or the crops on the land. **PLN led land acquisition** PLN has advised that as compensation amounts have not been calculated as yet, no compensation has been provided to AHs. Should it use its compulsory acquisition powers it will mean that displacement will occur prior to compensation being provided as the process vests the compensation amount with the district court system for resolution of payment	SERD has ensured that all AHs received compensation payments prior to any economic displacement. For the TL, which is an associated facility it is likely that PLN will work to ensure compliance with the applicable regulations within Indonesia. It is recommended that ongoing consultation be undertaken with PLN to determine any cases of land acquisition which have resulted in expropriation.	Low

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
		disputes while PLN takes the land. This is consistent with the prevailing regulations within Indonesia.		
4.1.8	Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the resettlement action plan?	All land acquisition led by SERD has been completed utilising internal resources. The implementation of the ISDP is being undertaken in collaboration with a range of local institutional partners. The TL acquisition is being led by PLN who as a government entity have a dedicated land acquisition team to implement the regulatory framework applicable to all aspects of the process.	No compliance gap identified at this stage	Low
4.1.9	Is a plan developed to monitor the impacts of resettlement?	**SERD led land acquisition** During the socio-economic baseline survey undertaken in October 2016, SERD sought feedback from all participants to feed into livelihood restoration and community development programmes. This information guided the development of the programmes which have since been integrated into the ISDP. As evidenced by the stakeholder engagement log, SERD has undertaken continual engagement with affected communities in implementing the ISDP (which commenced in February 2016). The monitoring process SERD have in place was able to evaluate the 2016 livelihood restoration programme and identify changes necessary to ensure a greater engagement with AHs. The monitoring does not cover the most recent implementation of training programmes in December 2017. SERD has stated that it intends to develop and submit its monitoring reports on a semester basis. **PLN led land acquisition** Resettlement has not yet occurred, however as livelihood restoration support is not being provided then it is unlikely that such monitoring will be undertaken by PLN.	To enable effective monitoring, tracking and reporting on these programmes, a stand-alone socio-economic impact and ISDP monitoring and evaluation report is to be provided twice annually (June and December) and integrate the following: • the performance of the ISDP and impacts to participant's livelihoods • Monitoring to be differentiated based on ISDP participants according to their status as affected, non-affected, and vulnerable people. • Monitoring methods to engage better directly with affected people. • Tracking and reporting on the participation of affected people within the Project workforce, as sub-contractors and as service providers As an action item SERD must incorporate AHs from the Protection Forest into the ISDP and its monitoring programmes.	Low
4.2: Living and Livelihood				
4.2.1	Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary?	Subject to the implementation of measures such as the ISDP and the ESMP, the Project is expected to have a net positive social benefit. This includes power generation, employment opportunities, CSR programmes, livelihood restoration programmes and land compensation being provided over market rate	No compliance gaps	Low
4.2.2	Is there a possibility that the amount of water (eg surface water,	The previous SIPA for the Project, allowing 467m^3/day, was noted to have expired in September 2017. SERD obtained a new permit on 17 May 2017 with two years validity. It is estimated that the daily water usage requirements during construction (for drilling, power	No compliance gaps	Low

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
	groundwater) used and discharge of effluents by the project will adversely affect the existing water uses and water area uses?	plant construction as well as domestic use from rig and EPC camp) is about 3,551m^3/day. The current permit allows an abstraction volume of 162,000m^3 over 45 days (ie 3,600m^3/day). This is shown to be sufficient to meet the Project's needs (ie 3,551m^3/day).		
4.2.3	Has appropriate consideration been given to vulnerable social groups, such as women, children, the elderly, the poor, ethnic minorities and indigenous peoples?	Refer to Row 4.1.6 above	Refer to Row 4.1.6 above	Medium
4.3: Heritage				
4.3.1	Is there a possibility that the project will damage the local archaeological, historical, cultural, and religious heritage sites? Are adequate measures considered to protect these sites in accordance with the host country's laws?	The EISA note that's there are no known items of tangible or intangible in proximity to any aspects of the Project. During the site visit it was noted that there are no known tangible items of cultural heritage within the Project area. It also commits to developing and implementing a chance finds procedure which is considered an appropriate approach to managing aspects of heritage	The chance finds procedure is to be submitted for review prior to any ground disturbing works being undertaken	Medium
4.4: Landscape				
4.4.1	Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	No visual impact assessment has been performed. Visual impacts on the local area are not considered likely to be significant. The main source of visual impacts is likely to be the steam emitted from cooling towers, however the power plant is located within a forested area, and is more than 5km away from the nearest residential area. Light pollution impacts could occur on fauna; however, this has already been covered by the BAP.	No compliance gaps.	Low
4.5: Ethnic Minorities and Indigenous Peoples				
4.5.1	Are the impacts to ethnic minorities and indigenous peoples avoidable by project implementation? If unavoidable, are efforts made to minimize the impacts and to	The outcomes of Indigenous Peoples screening undertaken is presented within Appendix D. SERD has provided two mutually exclusive positions in regards to the Semendo people.	A detailed IP screening report has been developed based upon consultation with representatives of the community and recognised experts on IP within South Sumatra. As the outcomes of this indicate that there are no IP's in the Project area further consideration of PS7 is not required.	Low

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
	compensate for their losses?	The publically disclosed SCAR[39] concludes that they are IP's and commits SCAR to the requirements of SR3. The draft ESIA concludes that they, along with Besemah are not IP's. It is strongly recommended that prior to committing to further actions in relation to IP's, that SERD undertake additional IP screening and analysis which considers all ethnic groups (most importantly the Semendo and Besemah) within the Project Area and also considers the level of vulnerability of these groups. The SCAR undertook a basic assessment of impacts of the land acquisition for Phase I. This did not specifically address impacts to IP's. There was no impact assessment in relation to socio-economic aspects presented within the Initial Environmental Evaluation (IEE) for Phase I, nor has an impact assessment been presented with the ESIA for Phase II. Based upon the currently adopted classification of the Semendo as IP's, an impact assessment must be undertaken based upon up to date baseline data and be used to drive further consideration of aspects relating to participation, consent, mitigation, and development (see 4.5.2 and 4.5.3 below).		
4.5.2	If the project has adverse impacts on indigenous peoples' various rights in relation to land and resources, is such rights respected?	Based upon the information available, the Project will not have adverse impacts on IP's rights in relation to land and resources. This will need to be confirmed during the IP screening report	Refer to 4.5.1 above	Medium
4.5.3	Is the indigenous peoples plan prepared and made public? Does the indigenous peoples plan include elements required in the standard of the international financial institution benchmarked in its environmental reviews?	The ISDP developed for the Project was intended to integrate aspects of an Indigenous Peoples Plan (IPP – refer to Appendix D) to ensure that any impacts associated with the Project to the local community (and by extension, IPs) were mitigated. This was developed based upon outcomes of consultation with the local community undertaken in a culturally appropriate manner. However there are matters which must be addressed prior to the ISDP being considered as appropriate for use an IPP: • It does not present a social impact assessment (or a summary of a social impact assessment, such as that presented within the draft ESIA) on which the plan is based • Information and disclosure provisions relating specifically to IPs are absent • A description of techniques and mechanisms used to maximise the participation of IP's within the ISDP implementation has not been provided. This is considered essential, particularly given the conclusions in the IHS monitoring that the participation of affected people (and therefore presumably affected IPs) within the ISDP programmes is very low • Inclusions of IPs within the monitoring process This matter will need to be revised pending the outcomes of the dedicated IP screening process recommended within item 4.5.1 above.	Based upon a classification of the Semendo as IP's, the ISDP must be amended to include the following • A social impact assessment focusing on indigenous peoples • Information and disclosure provisions relating to IP • Description of the mechanisms proposed to maximise IP participation in the ISDP programmes • Inclusion of IPs within the monitoring processes	Medium

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
4.5.4	In preparing the indigenous peoples plan, is consultation made with the affected ethnic minorities and indigenous peoples based on sufficient information made available to them in advance and are explanations given in a form, manner, and language that are understandable to them?	Refer to Row 4.5.3	Refer to Row 4.5.3	Medium
4.5.5	Are the free, prior, and informed consents of the indigenous peoples obtained?	As concluded within the SCAR, and reconfirmed during the site audit, there is no evidence that the Project activities during Phase I have impacts on IP's in a manner which would trigger specific consent requirements.	N/A	N/A
4.6: Working Conditions (Including Occupational Safety)				
4.6.1	Is the project proponent not violating any laws and regulations associated with the working conditions of the host country which the project proponent should observe in the project?	Indonesian regulations require private companies to have a set of company regulations ("Peraturan Perusahaan") which is submitted to and approved by the Ministry of Manpower. The presently approved version has been provided by SERD and forms the basis of their human resources policies. This covers matters such as their grievance policy and procedure, working conditions, terms of employment, collection bargaining and non-discrimination and equal opportunity. All of these aspects have been reviewed and are consistent with local laws and international best practice	No compliance gap	Low
4.6.2	Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials?	SERD have in place an extensive SHE Policy and Manual. It also maintains a mandatory training register. The policy and training programme are considered appropriate to effectively manage occupational health and safety risks for SERD employees. Attachment B-16 of the EPC Contract provides a comprehensive overview of the safety, health and environmental requirements. This also requires the preparation of a Project Specific SHE Plan which satisfies SERD requirements, applicable national laws and regulations and industry best practices. This document has not yet been prepared as the EPC and drilling contractors are yet to be appointed, however the system put in place is sufficient to manage workplace health and safety..	No compliance gap	Low
4.6.3	Are intangible measures being planned and implemented for individuals involved in	Refer to Row 4.6.1 and 4.6.2	No compliance gap	Low

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
	the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public sanitation) for workers etc.?			
4.7: Community Health, Safety, and Security				
4.7.1	Is there a possibility that diseases, including communicable diseases, such as HIV will be introduced due to immigration of workers associated with the project? Are adequate considerations given to public health, if necessary?	The public health baseline presented within the ESIA shows a limited capacity within the local health services, and describes a risk that the Project workforce could lead to increased use of local public services and increase the spread of disease. A Community Safety Health and Environmental Plan is proposed as a mitigation measure. Information gathered during an interview with Segamit Village public health workers noted that there was a 35% increase in health consultations at the clinic during the peak of the exploration phase. This was largely due to workers from the exploration civil construction workforce being housed within the local community and placing pressure on local services. The ESIA does not adequately describe how many of the peak construction workforce (over 2,100 people) are to be housed in the local community and what impacts this influx will have on local services, community health and culture. The ESIA commits SERD to developing and implementing a Public Health Awareness Raising Plan to address aspects such as malaria prevention, hygiene, sanitation, and community health issues, and to monitor local resource impacts. This is considered reactive and an inappropriate approach. SERD must undertake forward planning in cooperation with the selected EPC Contractor to firstly define the overall workforce accommodation strategy and then identify and assess impacts accordingly	The ESIA does not adequately assess impacts associated with influx of workers to the local area and potential impacts to health services and the exposure of the community to other influx related impacts. The following must be undertaken to assess and manage these impacts • Develop a workforce accommodation strategy • Develop and implement an Influx Management Plan • Develop and implement the Community Safety, Health and Environmental Plan committed to within the ESIA	Medium
4.7.2	Are appropriate measures being taken to ensure that security guards involved in the project do not violate safety of other individuals involved, or local residents?	SERD has appointed PT Jaga Nusantara (Janus) as its security provider. At the peak of exploration activities in 2015, there were up to 84 security personnel. At the time of the site visit this was approximately 30. Janus was subject to prequalification auditing as well as periodic contractor performance reviews. The documentation provided by SERD indicates that only minor corrective actions have been raised and that performance exceeds expectation. There have been no reports of excessive use of force within any of the documents provided by SERD, and Janus has a robust set of procedures and training requirements in place. Security on site will be managed under contract using the same arrangement. As with the present stage, guards will be primarily sourced from local communities and trained using the standards of SERD, the contractor and Indonesian Police.	No compliance gaps identified at this stage	Low
5: Other				
5.1: Impacts During Construction				
5.1.1	Are adequate measures considered to reduce impacts during construction (eg noise,	ERD has produced an ESMP (within the ESIA) that includes a suite of management measures and plans to be implemented, to mitigate and monitor potential impacts throughout the exploration, construction and operation phases of the project.	The Project's ESMP generally contains adequate management measures. The EPC contract commits the contractor to produce their	Low

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
	vibrations, turbid water, dust, exhaust gases, and wastes)?		own construction management plan which will address site specific issues.	
5.1.2	If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts?	The CHA[40] identifies four broad habitat types within the Project area: montane forests, freshwater habitat, plantation and semi-rural/urban. Montane forests and freshwater habitats are considered to be Natural Habitats and occur within the majority of the Project Area. MMD note that the CHA states that no Natural Habitat is present (Table 3.3) whilst Figure 3.2 shows it is present throughout the entire Project Area; both are incorrect. Based on calculations given the previous BAP (Greencap, 2016[41]) approximately 115ha of forest habitat (primary and secondary) will be affected by the project (106ha permanent loss and 9ha temporary loss).	The Project will result in significant conversion of Natural Habitat. An offsetting process for permanent habitat loss is described; however, details of where and when this will take place are not given. Depending on the measures to be implemented it is likely that off-site habitat creation or restoration will not achieve no net-loss within the life time of the Project (30 years).	High
5.1.3	If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?	With the exception of the current project administration block and aspects of the road network, the design of the Project will ensure that most key components are isolated from the local community. This includes well-pads, power station and warehouses within the Protection Forest area. Under the conditions of its IPPKH, SERD has an obligation to prevent the community from accessing the Protection Forest. At the time of the site visit, this was being implemented through a security gate arrangement on the primary access road. The public health baseline presented within the ESIA recognises that the local health network has limited capacity to provide services to the existing population of the area. The ESIA describes a risk that the Project workforce could lead to increased use of local public services and increase the spread of disease. A Community Safety Health and Environmental Plan is proposed by the ESIA. Information gathered during the site visit confirms during an interview with Segamit village public health workers noted that there was a 35% increase in health consultations at the clinic during the peak of the exploration phase. This was largely due to workers from the exploration civil construction workforce being housed within the local community and placing pressure on local services. The ESIA does not adequately describe how many of the peak construction workforce (over 2,100 people) are to be housed in the local community and what impacts this influx will have on local services, community health and culture. SERD must undertake forward planning in cooperation with the selected EPC contractor to firstly define the overall workforce accommodation strategy and then identify and assess impacts accordingly. The ESIA commits SERD to developing and implementing a Public Health Awareness Raising Plan to address aspects such as malaria prevention, hygiene, sanitation and community health issues, and to monitor local resource impacts.	The ESIA does not adequately assess impacts associated with influx of workers to the local area and potential impacts to health services and the exposure of the community to other influx related impacts. The following must be undertaken to assess and manage these impacts • Develop a workforce accommodation strategy • Develop and implement an Influx Management Plan • Develop and implement the Community Safety, Health and Environmental Plan committed to within the ESIA	Medium
5.2: Accident Prevention Measures				

[40] *Geothermal Power Plant Rantau Dedap in Lahat Regency, Maura Enim Regency and Pagar Alam City, South Sumatra Province: Critical Habitat Assessment*. Environmental Resources Management Siam, March 2017.

[41] *Biodiversity Action Plan (Interim Report)*. Greencap, November 2016.

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
5.2.1	Are adequate contingency plans and mitigation measures developed to cover both the soft and hard aspects of the project, such as accident prevention programs, installation of prevention facilities and equipment, and safety education for workers? Are adequate measures for emergency response to accidental events considered?	SERD has a comprehensive SHE policy and manual, detailing good safety practices. SERD has developed an Emergency Response Procedure (ERP); this is designed to deal with events such as volcanic eruptions, earthquakes, major H_2S releases, fire, plant failure, explosions, chemical/fuel spills and bomb threats.	No major compliance gaps, but recommendation includes: • Updating the Project specific information within the ERP as details becomes available • Document the on-going ERP socialisation efforts, as Project progress to construction • Coordination with the EPC contractor for them to adopt SERD procedures, and/or align their plans with the existing documentations	Low
5.3: Monitoring				
5.3.1	Are the monitoring programs and environmental management plans of the project prepared?	RKL-RPL bi-annual monitoring reports are produced by local university consultants and copies provided to the Environment Agency and other relevant local Government departments such as the Mining Department. A bi-annual Safeguard and Social Monitoring Reports developed and disclosed on the ADB website. SERD has a well-established and comprehensive corporate ESMS in place. This is documented in the SHE Policy and Manual, SOPs and associated documentation. The corporate systems are considered generally appropriate to apply to the Project. The ESIA contains a project specific ESMP that describes mitigation and monitoring measures for the project during the exploration, construction, operation and decommissioning stages.	No compliance issues.	Low
5.3.2	Are the items, methods and frequencies included in the monitoring program judged to be appropriate?	**Environmental:** Monitoring of environmental parameters as prescribed in the AMDAL and ESIA, typically mentions bi-annual monitoring (ie twice a year, once for each wet/dry season or six monthly). These requirements are considered broadly sufficient given the significance of predicted impacts (ie mostly low due to distance of receptors). However, there are some gaps in monitoring of some parameters (eg effluent, noise). **Biodiversity:** Monitoring is referenced in the BAP; however, no details are given including, methodology to demonstrate no measurable adverse impacts. **Social:** SERD undertook a socio-economic baseline of project affected households to aid development of the ISDP. The feedback gained through the socio-economic survey also	Implementation of monitoring needs to be improved for all aspects (ie environmental, biodiversity, and social). Recommendations are as detailed this documents ESAP.	Medium

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
		included input into livelihood restoration measures to include in the ISDP. However, the ISDP lacks the following sections which are required to comply with IFC PS5 and allow tracking of effectiveness.		
5.3.3	Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)?	Periodic monitoring is undertaken by a local consultant in accordance with the approved RKL-RPL documents.	No compliance issues.	Low
5.3.4	Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	The format of the RKL-RPL reports is as required under Indonesian law. These reports are prepared by a certified local consultant with experience in producing reports of this nature.	No compliance issues.	Low
5.3.5	Are the results of monitoring planned to be disclosed to the stakeholders of the project?	Bi-annual RKL-RPL periodic monitoring reports are provided to the local Environment Agency and Mining Department. Stakeholders are able to view the reports at these local offices.	No compliance issues.	Low
5.3.6	Is there a processing mechanism in place, for solving problems related to environmental and social considerations pointed out by third parties?	The Project has been operating a grievance mechanism (GM) since exploration activities commenced in 2011. This was disclosed during village level consultation in June 2012. Both the SCAR in 2014 and Mott MacDonald's site visit indicate a high level of awareness of the GM which the village heads and the temporarily stalled Forum Desa have a key role in facilitating. The GM has not been disclosed further by placing it in community notice boards or providing flyers. SERD has noted it has not placed heavy reliance on written measures as utilising village heads and the CLO have been more effective. Recommendations were discussed with SERD during the audit process to develop information cards for the CLO to distribute during any stakeholder meetings, detailing key contact points to lodge any grievances. The review of SERD's grievance log showed a total of five grievances and none since 2014. All of these grievances were related to the land acquisition process and have been appropriately logged and closed out by SERD. The lack of recent major grievances (none reported since April 2014) is suggestive of a project that is performing well in terms of managing community relations and adverse social impacts (refer to the SCA). During discussions with SERD, it was noted that small grievances that were able to be immediately resolved (eg blocked drainage line on a SERD road) or were eventually not classed as grievances (ie one instance where community members complained about water quality, which was not related to Project activities) were not being logged. SERD has	SERD has had in place a robust grievance mechanism. Minor recommendations are made to secure best practice: • Develop cards to provide to community members which details key SERD contact details to lodge grievances with • SERD to ensure that all grievances from the community are entered into the grievance log	Medium

No.	Main check item	Confirmation of environmental and social considerations	Compliance review	Risk ranking
		made a commitment to log all grievances received in the future to enable accurate reporting and identification of any trends which may require rectifying. The December 2016 SEP details the grievance mechanism that will be implemented for the Project moving forward. This mechanism is considered consistent with IFC PS1.		
6: Notes				
Where necessary, pertinent items described in the Power Transmission and Distribution Lines checklist should also be checked (eg projects including installation of electric transmission lines and/or electric distribution facilities).		We note that the JBIC Transmission and Distribution checklist also applies to the Project (specifically the 39km transmission line from power plant to Lumut Balai substation). However, at this stage limited information is known regarding the transmission line and it has not been assessed in the Project's ESIA. Therefore we have not been able to conduct a detailed review against the Transmission and Distribution Checklist. The 39km transmission line is considered associated infrastructure and, in the absence of the AMDAL that PLN will prepare at a later stage, the Project's ESIA should include as a minimum a high level assessment of potential impacts from the construction and operation of the transmission line.		
If necessary, the impacts to transboundary or global issues should be confirmed (eg the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of ozone layer, global warming).		The ESIA states "there are no transboundary impacts associated with the project". The greenhouse gas calculations provided support this statement.	No compliance issues.	Low

Source: Mott MacDonald

Table 12: Compliance Review: JBIC and NEXI - Pipelines

No.	Main Check Item	Confirmation of Environmental and Social Considerations	Compliance Review	Risk Ranking
1: Permits and Approvals, Explanations				
1.1: ESIA and Environmental Permits				
1.1.1 to 1.1.4	No additional requirements beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Low
1.2: Explanations to the Public				
1.2.1 to 1.2.5	No additional requirements beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Medium
2: Anti-pollution Measures				
2.1 Air Quality				
2.1.1	Do air pollutants, such as sulfur oxides (SOx), nitrogen oxides (NOx), and soot and dust emitted from the pumps and other facilities comply with the host country's emission standards?	Where possible, pipeline routes are selected to facilitate gravity flow for brine and condensate (between power plant and reinjection wells). Pumps are likely not required or minimally used,	No compliance gaps.	Low
2.1.2	Is there a possibility that air pollutants emitted from the project will cause areas that do not comply with the host country's ambient air quality standards?	No significant air quality emissions associated with the construction or operation of the pipelines, except dust resuspension from construction traffic travelling on unpaved roads. Dust emissions are not expected to cause exceedances of ambient standards.	No compliance gaps.	Low
2.2 Water Quality				
2.2.1	Are adequate measures taken to prevent spills and discharges of crude oil and hazardous materials to the surrounding water areas?	Pipelines will contain steam, condensate, brine or water. Rupture of a steam pipeline could present a community health and safety hazard. Rupture of a brine or condensate pipeline could result in discharges to surrounding water areas. Where pipelines cross or run close to water courses particular attention will need to be given to the siting and design of these pipelines, for example installing pressure sensors and isolation valves either side of the water course to enable automatic sensing of a rupture and shutdown of the pipeline. The pipelines are mostly planned to be located alongside existing or proposed access roads (with exception of the pipeline connecting to well pad B). Hence, all intersections with water courses are constructed upon river crossings structures (ie MSE). The road and MSE structures are all constructed or planned with roadside drainage which is expected to channel any spillage from directly entering water course. Further review of	No compliance gaps.	Low

No.	Main Check Item	Confirmation of Environmental and Social Considerations	Compliance Review	Risk Ranking
		management and mitigation measures relating to spillage should be monitored through observation or audit of site practices, as well as review of detailed design drawings when available.		
2.2.2	Does the quality of sanitary wastewater and stormwater comply with the host country's effluent standards?	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Low
2.2.3	Are adequate measures taken to prevent contamination of surface water and groundwater by these effluents? Is there a possibility that the effluents from the project will cause areas that do not comply with the host country's ambient water quality standards?			Low
2.3 Waste				
2.3.1	Are sludges containing pollutants, such as oil and grease, and heavy metals generated by pipeline cleaning (pigging operations) properly treated and disposed of in accordance with the laws and regulations of the host country?	NA (only steam, condensate and water pipelines)	NA	NA
2.4 Soil Contamination				
2.4.1	Has the soil at the project site been contaminated in the past, and are adequate measures taken to prevent soil contamination by leaked materials, such as crude oil?	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Low
2.5 Noise and Vibration				
2.5.1	Do noise and vibrations from facility operations, such as pumping operations comply with the host country's standards?	Pipelines will be gravity fed and therefore no pumps required.	NA	NA
2.5.2	Is there a possibility that noise from facility operations, such as pumping operations will affect humans and animals (wildlife and livestock)?			NA
3. Natural Environment				
3.1 Protected Areas				
3.1.1	Is the project site located in protected areas designated by the host country's laws or international treaties etc.? Is there a possibility that the project will significantly affect the protected areas?	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Low
3.2 Ecosystem and Biota				
3.2.1	Does the project cause significant conversion or significant degradation of forests with important ecologically value (including primary forests and natural forests in tropical	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	High

No.	Main Check Item	Confirmation of Environmental and Social Considerations	Compliance Review	Risk Ranking
	areas) and habitats with important ecological value (including coral reefs, mangrove wetlands and tidal flats)?			
3..2.2	In case the projects involve the significant conversion or degradation of natural habitats including natural forests, is the avoidance of impacted considered preferentially? If the impacts are unavoidable, will the appropriate mitigation measures be taken?			Medium
3.2.3	Will the evaluation of the impacts on natural habitats by the project and consideration for the offset measures be carried out based on expert opinion?			Medium
3.2.4	Is the illegal logging of the forest avoided?			Low
3.2.5	Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties etc.?			Medium
3.2.6	Are adequate protection measures taken to prevent impacts, such as disruption of migration routes and habitat fragmentation of wildlife and livestock?	Pipelines will follow existing access roads except the pipeline from the power plant to reinjection wellpad B, which will be installed directly between these two areas in modified Project land.	No compliance gaps.	Medium
3.2.7	Is there a possibility that installation of pipelines will cause impacts, such as deforestation, poaching, desertification, and acidification of wetland areas? Is there a possibility that the ecosystems will be disturbed due to introduction of exotic species (non-native inhabitants in the region) and pests? Are adequate measures for preventing such impacts considered?	Pipelines will follow existing access roads except the pipeline from the power plant to reinjection wellpad B, which will be installed directly between these two areas in modified Project land. The accidental (or intentional) introduction of invasive alien species is considered in the draft BAP.	The impact of invasive alien species has not been assessed in detail in the revised ESIA but is considered in the draft BAP. Further development and implementation of an invasive species plan is required.	High
3.2.8	If any adverse impacts on ecosystem are predicted, are adequate measures taken to reduce the impacts on ecosystem?	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Medium
3.3 Hydrology				
3.3.1	Is the possibility of water quality degradation by the installation of structures investigated? Are adequate water quality control measures taken, if necessary?	River crossings (of roads) over significant waterways were constructed as permanent structures (ie bridges, gabion walls, stabilised slopes). The existing water intakes did not appear to have potential to significantly amend the surface flow. No new water intakes are planned to be constructed.	No compliance gaps.	Low
3.4 Topography and Geology				
3.4.1	In the case of onshore pipeline installation, is there a possibility that the installation of structures will cause a large-scale alteration of topographic features and	Geothermal pipelines are relatively small and do not require substantial support structures. No large-scale topographic alteration is expected.	No compliance gaps.	Low

No.	Main Check Item	Confirmation of Environmental and Social Considerations	Compliance Review	Risk Ranking
	geological structures around the project site? In the case of coastal pipeline installation, is there a possibility that the installation of structures will result in elimination of beaches?			
3.5 Management of Abandoned Sites				
3.5.1	Are the environmental conservation measures at the time of the pipeline closedown (removal) taken based on the law of the host country?	No information is available relating to the decommissioning of pipelines. It is understood that for some geothermal projects the pipelines are left in situ following decommissioning.	Details of the decommissioning process for pipelines must be made available and documented in a decommissioning plan.	Medium
4. Social Environment				
4.1 Resettlement				
4.1.1	Are involuntary resettlement and loss of means of livelihoods avoidable by project implementation?	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Low
4.1.2	Are the people affected by the project provided with adequate compensation and supports to improve their standard of living, income opportunities, and production levels or at least to restore them to pre-project levels?			Medium
4.1.3	Is the participation of the people affected and their communities promoted in planning, implementation, and monitoring of involuntary resettlement action plans and measures against the loss of their means of livelihood?			Medium
4.1.4	Is the resettlement action plan (including livelihood restoration plan as needed) prepared and disclosed to the public for the project which will results in a large-scale resettlement or large-scale loss of means of livelihood?			Medium
4.1.5	In preparing a resettlement action plan, is consultation made with the affected people and their communities based on sufficient information made available to them in advance and is explanations given in a form, manner, and language that are understandable to the affected people?			Medium
4.1.6	Has appropriate consideration been given to vulnerable social groups, such as women, children, the elderly, the poor, and ethnic minorities in the resettlement action plan?			Medium
4.1.7	Are agreements with the affected people obtained prior to the resettlement?			Low
4.1.8	Is the organizational framework established to properly implement resettlement?			Low
4.1.9	Is a plan developed to monitor the impacts of resettlement?			Medium

No.	Main Check Item	Confirmation of Environmental and Social Considerations	Compliance Review	Risk Ranking
4.2 Living and Livelihood				
4.2.1	Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary?	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Low
4.2.2	Is there a possibility that existence of pipeline will cause impacts on traffic in the surrounding areas, and impede the local transportations?			Low
4.2.3	Has appropriate consideration been given to vulnerable social groups, such as women, children, the elderly, the poor, ethnic minorities and indigenous peoples?			Medium
4.3 Heritage				
4.3.1	Is there a possibility that the project will damage the local archaeological, historical, cultural, and religious heritage sites? Are adequate measures considered to protect these sites in accordance with the host country's laws?	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Low
4.4 Landscape				
4.4.1	Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	Pipelines are unlikely to be visible from a great distance due to their relatively small size. Pipeline routes will follow access roads where sensible and feasible and will predominantly lie within the secure Project area, where visual impacts on the landscape will be minimised due to the distance to sensitive receptors.	No compliance gaps. No further action required.	Low
4.5 Ethnic Minorities and Indigenous Peoples				
4.5.1	Are the impacts to ethnic minorities and indigenous peoples avoidable by project implementation?	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Medium
4.5.2	If the project has adverse impacts on indigenous peoples' various rights in relation to land and resources, is such rights respected?	NA	NA	NA
4.5.3	Is the indigenous peoples plan prepared and made public?			NA
4.5.4	In preparing the indigenous peoples plan, is consultation made with the affected ethnic minorities and indigenous peoples based on sufficient information made available to them in advance and are explanations given in a form, manner, and language that are understandable to them?			NA
4.5.5	Are the free, prior, and informed consents of the indigenous peoples obtained?			NA
4.6 Working conditions (including occupational safety)				

No.	Main Check Item	Confirmation of Environmental and Social Considerations	Compliance Review	Risk Ranking
4.6.1	Is the project proponent not violating any laws and regulations associated with the working conditions of the host country which the project proponent should observe in the project?	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Low
4.6.2	Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials?			Low
4.6.3	Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public sanitation) for workers etc.?			Low
4.7 Community Health, Safety and Security				
4.7.1	Is there a possibility that diseases, including communicable diseases, such as HIV will be introduced due to immigration of workers associated with the project? Are adequate considerations given to public health, if necessary?	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Medium
4.7.2	Are appropriate measures being taken to ensure that security guards involved in the project do not violate safety of other individuals involved, or local residents?		No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Low
5. Other				
5.1 Impacts during construction				
5.1.1	Are adequate measures considered to reduce impacts during construction (eg noise, vibrations, turbid water, dust, exhaust gases, and wastes)?	Although it is not explicitly mentioned as a highly erosion susceptible/vulnerable area, the 2.5km reinjection pipeline is considered to be one of such area. As it cuts from natural forest on an uneven terrain, there might be earthworks required within a narrow corridor with potential to affect the surrounding vegetation with sedimentation. The methodology of works to be carried out for this scope should integrate measures to minimise impacts (eg minimise clearing, covering with canvas, silt fences).	The EPC contractor will need to integrate and provide measures to minimise erosion and sedimentation impacts of the reinjection pipeline (to well pad B).	Medium
5.1.2	If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts?	The affected areas due to pipeline laying (ie 2.5km from access road to well pad B) have been taken into account as habitat loss within the BAP (ie offsetting). The fragmentation effects of the pipeline have been	SERD is to ensure that within the detailed construction plans of the reinjection pipeline (to well pad B) that appropriate opportunities for animal	Medium

No.	Main Check Item	Confirmation of Environmental and Social Considerations	Compliance Review	Risk Ranking
		assessed with mitigations (eg animal crossings) being proposed. However, detailed plans have yet to be made available.	crossings (ie above or under) are identified and implemented.	
5.1.3	If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Low
5.2 Accident Prevention Measures				
5.2.1	Are adequate contingency plans and mitigation measures developed to cover both the soft and hard aspects of the project, such as accident prevention programs, installation of prevention facilities and equipment, and safety education for workers? Are adequate measures for emergency response to accidental events considered?	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Low
5.3 Monitoring				
5.3.1	Are the monitoring programs and environmental management plans of the project prepared?	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	No additional considerations beyond those covered in JBIC 'Other Electric Generation Checklist'.	Low
5.3.2	Are the items, methods and frequencies included in the monitoring program judged to be appropriate?			
5.3.3	Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)?			
5.3.4	Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?			
5.3.5	Are the results of monitoring planned to be disclosed to the stakeholders of the project?			
5.3.6	Is there a processing mechanism in place, for solving problems related to environmental and social considerations pointed out by third parties?			

Source: Mott MacDonald

3.6 ADB Safeguard Requirements

3.6.1 ADB Project Categorisation

3.6.1.1 Safeguard Requirement 1 (Environment)

Following the review of Project documentation, it is considered that the Project falls under Category A for the purposes of ADB Safeguard Requirement 1 (Environment). ADB Safeguard Policy Statement defines a category A project as follows:

"A proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment is required."

Key considerations in the determination of this categorisation are:

- A project's category is determined by the category of its most environmentally sensitive component; the Project is located within critical habitat that supports endangered species found in the Project area. This is considered to be one of the most sensitive environmental issues for the Project, with the potential for irreversible, diverse or unprecedented impacts that affect an area larger than the physical Project site boundary.
- Key environmental issues have been assessed and potential significant adverse impacts identified relating to air quality, erosion, noise, water quality, biodiversity and socioeconomic factors. Although in most cases appropriate management practices are in place to mitigate these impacts there is the potential for significant impacts to occur.

The project's compliance in relation to SR1 is discussed in detail in Section3.6.1.1..

3.6.1.2 Safeguard Requirement 2 (Involuntary Resettlement)

Following the review of Project documentation, consultation with relevant stakeholders and having regards for the categorisation of the Project presented within the Initial Environmental Evaluation (IEE) and Social Compliance Audit Report (SCAR) for Phase I, it is considered that the Project falls under Category A for the purposes of ADB Safeguard Requirement 2 (Involuntary Resettlement). ADB Safeguard Policy Statement defines a Category A project as follows:

"*Category A: A proposed project is likely to have significant involuntary resettlement impacts. A resettlement plan, which includes assessment of social impacts, is required.*"

The information and conclusions contained within the Involuntary Resettlement (IR) Impact Categorisation Checklist (refer to Section C.7 of Appendix C) provides the justification for this. In summary, key considerations are:

- While the project does not result in any physical displacement, 153 households (HH's) to date have experienced economic displacement
- 94 of these HH's have lost more than 10% of their farmland assets. Based on HH occupancy rates in this area, this is more than 200 people

- Survey work undertaken by SERD indicates that at least 109 of the economically displaced HHs are considered as vulnerable, with 17 of these extremely vulnerable[42]
- Land acquisition will be required as facilitate the development of the 39km transmission line from the power station to the Lahat substation will be undertaken by PLN. This will increase the amount of HH's economically displaced by the Project
- There was a 2 year lag between the completion of the land acquisition process and the commencement of livelihood restoration activities

A resettlement plan was not produced prior to the land acquisition process, however SERD has since developed an Integrated Social Development Plan (ISDP) based upon the outcomes of a socio-economic baseline survey which included affected households. Implementation of this commenced in February 2016.

With the exception of an adjustment to the IPPKH, all of the land acquisition activities to be led by SERD have been completed. The 39km transmission line is to be developed by PLN and will be considered as an associated facility.

The projects compliance in relation to SR2 is discussed in detailed in Table 8.

3.6.1.3 Safeguard Requirement 3 (Indigenous People)

The 2014 SCAR, which assessed the Project's land acquisition activities up until April 2014, provided a conclusion that the majority of the persons affected by the land acquisition, and the general population of the Project area, are ethnic Semendo and are considered Indigenous People (IP) for the purposes of SR3. This resulted in a recommendation that the Project falls under Category B for the purposes of ADB Safeguard Requirement 3 (Indigenous Peoples). ADB Safeguard Policy Statement defines a Category B project as follows:

"*Category B proposed project is likely to have limited impacts on indigenous peoples. An indigenous peoples plan, including assessment of social impacts, is required*".

This same categorisation was adopted within the Report and Recommendation of the President to the Board of Directors in June 2014 for the Phase I loan provided by the ADB. At the commencement of the ESDD period, SERD provide additional information within the draft ESIA for Phase II which drew the conclusion that the Semendo people should not be considered as IP. Mott MacDonald's initial assessment of these conflicting positions is provided within Appendix D. This concluded that the provided information did not justify a change in the categorisation of Semendo people or to the SR3 Category B decision.

As an outcome of consultation between SERD, the ADB and Mott MacDonald, SERD engaged PT IHS to facilitate a detailed IP screening to produce a definitive conclusion based upon document review, consultation with members of the local community, engagement with recognised government and academic experts with a background in IP matters within South Sumatra and final assessment against the provisions of paragraph 6 of SR3. A copy of this report is provided within Appendix E. This report concludes that while the Semendo people within the area have a strong societal tradition in many aspects, they do not meet the definition of IP as contained within SR3 as applied to the Indonesian context (ie having regard for cultural and regulatory perceptions as to what constitutes an IP). As further described within Appendix E.1, Mott MacDonald considers a robust case have been put forward to conclude that the

[42] As well as the definitions of vulnerable used previously, SERD has adopted an additional category for those it considers to be extremely vulnerable. The criteria utilised for this are (i) elderly people aged 60 or more, (ii) single female headed households with a member having a disability (iii) elderly person headed household having three or more dependents, (iv) total household monthly income less than 1,500,000 IDR/month, or (v) unemployed household head.

Semendo people within the local area do not meet the definitions of IP as contained within SR3 and the prevailing regulations within Indonesia. As a result, it is recommended that the initial SR3 classification of the Project as Category B be amended to Category C, defined as:

"*A proposed project is not expected to have impacts on indigenous peoples. No further action is required*."

In accordance with this categorisation, no further assessment of the Project against SR3 is required.

3.6.2 ADB compliance review

The tables as listed below presents Mott MacDonald's review of the Project's compliance to ADB Safeguard Requirements 1 to 3:

- Safeguard Requirement 1: Environment - Table 13
- Safeguard Requirement 2: Involuntary Resettlement - Table 14

Table 13: Compliance review: ADB Safeguard Requirement 1 - Environment

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
1	Conduct an environmental assessment for each proposed project to identify potential direct, indirect, cumulative, and induced impacts and risks to physical, biological, socioeconomic (including impacts on livelihood through environmental media, health and safety, vulnerable groups, and gender issues), and physical cultural resources in the context of the project's area of influence. Assess potential transboundary and global impacts, including climate change. Use strategic environmental assessment where appropriate.	**Overall finding: Gaps in the environmental assessment are not considered a material risk to the project and therefore the Existing Assets are considered compliant** • **National environmental assessment:** Local EIA requirements (ie UKL-UPL. KA-ANDAL, AMDAL and RKL-RPL) for both Phase I and II all obtained their respective approvals. • **International environmental assessment:** In addition to the UKL/UPL, an Initial Environmental Examination (IEE) was undertaken for Phase I. This IEE serves as an environmental assessment for the Phase I works (ie including Existing Assets). For Phase II's ESIA, the environmental aspects (eg air, noise, water quality) and potential impacts assessed are considered adequate in scope, although it should be noted that assessment itself still has room for improvement (see respective items below). On the framework level, the main area for improvement identified is with the simplistic categorisation of impact significance employed. Within Section 8, the determination of impact significance is described to be characterised by factors such as magnitude, likelihood, and receptor sensitivity, However, there was no further elaboration on categorisation or matrices used, with Section 8.6 showing a table that simply summarises whether impacts are either positive or negative without any statement on level of significance (eg minor, moderate or major). No further mention of impact significance was used within the actual assessment. However, this does not constitute a material gap, as the technical analysis of the various impacts detailed are still considered adequate (ie deficient is in systematic summarisation and presentation of impact significance). The level of assessment (ie ESIA) is in line with the ADB categorisation (ie category A for environment). Although there are considerable improvements possible for the ESIA, these shortcomings are not considered material.	Compliant	Low
2	Examine alternatives to the project's location, design, technology, and components and their potential environmental and social impacts and document the rationale for selecting the particular alternative proposed. Also consider the no project alternative.	The ESIA includes an analysis of alternatives comprising the 'No Project' option and alternative Project siting. The report concludes that the 'do nothing' alternative would increase reliance on coal and thus increase reliance on fossil fuels. For siting at the macro-level, the ESIA mentions that site selection of the prospect area is mainly based on engineering / geotechnical considerations (ie locations with viable geothermal resource). The ESIA did not contain explicit references of	The ESIA's documentation of alternative analysis is limited. However, there does not appear to be material risk in this aspect, as the Project demonstrates reasonable E&S considerations during on-going decision-making.	Low

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		siting decisions at the micro-level (eg well pads, access roads). However, there are evidence that some level of considerations was taken as based on E&S factors. These instances include: • Shifting the proposed operational phase workers' accommodation from well pad E (ie next to the power plant) to near to the former well pad A. This reduces the clearance of forest habitat areas, as well as decrease exposure risks of workers to H_2S emissions from the power plant. • Shifting of Phase II explosive bunker and hazardous waste storage to near well pad B, rather than continue using Disposal Pit 2 which is in closer proximity to local communities • Extraction of water from major tributaries (or at Cawang Tengah River itself) through the existing Phase I water intakes instead of smaller tributaries to avoid localised over-abstraction Although the ESIA's documentation of alternative analysis is limited, there is demonstration that E&S impacts were considered during decision-making where appropriate. However, for the revised (operational phase) workers' accommodations location, it should be noted that while it has been shifted out of the forest covered areas, it 's proposed location currently occupies a narrow strip between the Project access road and physical forest boundaries. Attention should be given to avoid unnecessarily encroaching or clearing forest areas as based on detailed design of the facility.	Attention should be given to avoid forest clearance at the alternate proposed location of the workers' accommodations.	
3	Avoid, minimize, mitigate, and/or offset adverse impacts and enhance positive impacts by means of environmental planning and management. Prepare an environmental management plan (EMP) that includes the proposed mitigation measures, environmental monitoring and reporting requirements, related institutional or organizational arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators	**Overall finding: The ESIA and Supreme Energy's documents contain a site specific environmental management plan (EMP) and management system which in part address the requirements of SR1 but is lacking key information – as outlined below - resulting in a non-compliance.** • **Corporate-level policy:** SERD's parent company, Supreme Energy, has a well-established overarching corporate Environmental and Social Management System (ESMS) in place. This is documented in the Safety Health and Environment (SHE) Policy and Manual, Standard Operating Procedures (SOPs) and associated documentation. Information on management measures and procedures specific to the Project is available but from a variety of different sources including the UKL-UPL, SHE Policy, SHE SOPs. The corporate systems at the framework level are considered generally appropriate to apply to the Project.	Implementation of mitigation and monitoring needs to be improved for all aspects (ie environmental, biodiversity, and social). Recommendations are as detailed this document's ESAP.	Medium

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		• **Project EMP:** An AMDAL and an ESIA was produced as part of Phase II's environmental assessment. The ESIA purpose is to build on the relevant elements of the national environmental requirements (ie RKL-RPL) to meet the requirements of the Project's Compliance Framework (see Section 2.2.1) . Within the ESIA, Section 11 contains an EMP which draws on the assessment in the ESIA. Recommendations for the EMP to achieve full compliance with the Project's Compliance framework are elaborated in detail within this IFC PS review (see Section **Error! Reference source not found.**). • **Monitoring requirements:** Bi-annual (every 6 months) RKL-RPL monitoring reports are to be produced by SERD with copies provided to the Environment Agency and other relevant local Government departments such as the Mining Department. However, detailed requirements for monitoring are to be improved: – **Environmental:** there are some gaps in monitoring of some parameters (eg effluent, noise) – **Biodiversity:** Monitoring is referenced in the BAP; however, no details are given including, methodology to demonstrate no measurable adverse impacts – **Social:** The Project's ISDP lacks the following sections which are required to comply with IFC PS5 and allow tracking of effectiveness of livelihood restoration measures.		
4	Carry out meaningful consultation with affected people and facilitate their informed participation. Establish a grievance redress mechanism to receive and facilitate resolution of the affected people's concerns and grievances regarding the project's environmental performance.	**Project consultation and participation:** There have been no community protests which would indicate any form of widespread community opposition to the Project. Based on the Stakeholder Engagement Log and the outcomes of the consultation during the site audit it is considered that the Project has developed and maintained community support during the exploration phase. Key stakeholders were asked to explain their understanding of the present status of the Project and all were able to provide an accurate overview of the Project's current activities. This reflects the effectiveness of the role that the SERD Community Liaison Officer (CLO) has been playing during exploration phase. Planning for effective engagement for development phase is being undertaken through the present AMDAL and ESIA process. A Village Forum (*Forum Desa*) was established in 2013 and continued through until it was disbanded in June 2015. This is considered appropriate given the present status of the Project. During field work undertaken in January 2018, SERD noted that it was actively searching for participants during January and February 2018 to reform the Forum Desa in alignment with the financial close schedule (March 2018).	SERD has demonstrate a strong commitment to meaningful engagement with affected people, including receiving and addressing grievances. A number of recommendations for improvement are made. These are described below. The stakeholder engagement plan must be updated to incorporate the following: • Update the list of Project stakeholders to reflect the fact that additional land acquisition for worker accommodation and for transmission line has been undertaken. • Update the stakeholder engagement log to incorporate: (i) stakeholder	Low

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		Documentation: The current stakeholder engagement plan (SEP) was developed in late 2016 and was implemented in December 2016. Prior to this, the engagement undertaken by SERD was within the context of the Forum Desa, disclosure of AMDAL documents, Integrated Social Development Plan (ISDP) development and implementation, socio-economic baseline surveys and ongoing face to face meetings with key stakeholders. The stakeholder log shows a strong commitment to ongoing engagement with stakeholders, particularly with regards to communicating the Project's status, forward plans and the development and monitoring of key CSR activities. It is noted that the stakeholder log tracks only multi-stakeholder meetings and events, and not individual engagements. During the site audit, it was shown that the CLO plays an active role in the community meeting with village heads and land holders on a regular basis. Improvements to documentation of grievances and stakeholder engagement have been noted throughout the due diligence period, however recommendations for improvement include the need to update the stakeholder engagement log to incorporate Update the Stakeholder Engagement Log to incorporate: (i) Stakeholder contact and preferred contact method; (ii) Suggestions; (iii) Responsibility for follow-up actions; (iv) Deadlines for follow-up action; and (iv) Confirmation of close-out. **Engaging with vulnerable and minority groups**: Presently the SEP does not detail how vulnerable and minority groups will be engaged. The SEP identifies vulnerable groups, and how to engage with them, although reporting provides little indication of how this has occurred. **Ongoing reporting:** The bi-annual safeguard and social monitoring reports developed and disclosed on the ADB website include a section (Section 5.2) summarising information disclosure, consultation and participation activities. The three monitoring reports reviewed as part of this audit only provide a general overview of consultation activities which have been undertaken (eg "*Relation Team continuously participate in consultation with the village head, district head, regent and also the military heads in Lahat, Muara Enim regencies as well as Pagar Alam city as attendees*"), with statements regarding the Integrated Social Development Program and improvement processes being the same across all monitoring reports. Improvements to the reporting are necessary; they need to provide accurate reporting of all the stakeholder engagement activities which have occurred over the previous six months and corrective actions arising from such activities. This needs to occur in conjunction with the improvement to the documentation system noted above. The SEP adopted in December 2016 contains new commitments to report stakeholder engagement activities (amongst other matters such as environmental performance)	contact and preferred contact method; (ii) suggestions; (iii) responsibility for follow-up actions; (iv) deadlines for follow-up action; and (iv) confirmation of close-out. • Adopt other communication channels, such as written publications, social media, and phone texting • Revised list of stakeholders based on Phase II project footprint, additional land acquisition and changes to the ISDP. This is to include more definition around vulnerable AHs and how targeted engagement will be undertaken • Revised the grievance log such that it includes the name, contact details, preferred contact method, contact timing and address of the individual logging the grievance • Hire additional CLO resources as support to the existing Field Representative/CLO to assist in stakeholder engagement activities and management of documentation and administrative matters	

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		through the Supreme Energy website (www.supreme-energy.com). Presently, the website does not contain the bi-annual reports or any other reports relating to the Project. As part of future reporting, SERD should make more effective use of its website by either uploading all its externally disclosed environmental and social reporting, or provide links for external websites where these reports are available (eg the ADB Project site for Rantau Dedap). **Land acquisition consultation:** SERD undertook an appropriate level of consultation during all aspects of the land acquisition and has demonstrated a commitment to continual and meaningful stakeholder engagement with the local community and AHs in the development and implementation of the ISDP. For example, prior to implementing the 2nd round of coffee cultivation training program in December 2017, SERD conducted several consultation activities with different stakeholder groups, including village leaders and beneficiaries from affected communities. During the socio-economic baseline survey undertaken in 2015, SERD sought feedback from all participants to feed into livelihood restoration and community development programmes. This information guided the development of the programmes which have since been integrated into the ISDP. Initial implementation of the ISDP resulted in low participation of AHs, with 14 of 112 participants belonging to AHs. Reasons for these low participation rates included a lack of targeted engagement and short notification periods. Livelihood restoration activities in 2017 (coffee growing and cultivation techniques) resulted in a much higher participation rate, with 87 AHs members attending. Outcomes of Mott MacDonald's fieldwork, primarily through FGDs with three beneficiary groups from Tunggul Bute and Segamit Villages and Rantau Dedap Hamlet, demonstrate a high level of awareness of the ISDP programs offered by SERD. Many participants attended the coffee training program. This demonstrates effective use of engagement, which based upon outcomes of document review and interviews was shown to integrate a range of formal and informal meetings and focus group discussions. Communication channels which could be utilised to support these main methods (such as information hand-outs and booklets) are not being utilised by SERD. Several participants in the FGD with Segamit Village's beneficiaries suggested SERD to use phone messages to affected people, which indicates that in the future SERD should seek to make better usage of mass media methods such as social media or phone messages (eg WhatsApp or traditional text message).		
5	Disclose a draft environmental assessment (including the EMP) in a	The following Phase I documents have been prepared and disclosed on the ADB website in accordance with the requirements of SR1:	No compliance gap, however SERD must integrate the	Low

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
	timely manner, before project appraisal in an accessible place and in a form and language(s) understandable to affected people and other stakeholders. Disclose the final environmental assessment.	• Initial Environmental Evaluation (Dated May 2014) • Social Compliance Audit Report (Dated April 2014) • Initial Poverty and Social Analysis (Dated June 2014) • Safeguard and Social Monitoring Reports for 1st Semester 2015, 1st Semester 2016 and 2nd Semester 2016. The 2nd Semester 2015 document is not available on the ADB website for disclosure purposes. The UKL-UPL for Phase 1 is available in both English and Bahasa Indonesia, but not known to be publicly disclosed. For Phase II, as the Project had been categorised as 'A' for environment, to comply with the disclosure requirements, ADB has disclosed the draft ESHIA report for Phase II which included the EMP, as well as the environmental compliance audit report and biodiversity action plan on February and March 2017. The above Phase II document package has been disclosed 120 days prior to ADB Board consideration (see: https://www.adb.org/projects/50330-001/main#project-documents) ADB's SPS (2009) states "*for projects with significant adverse environmental, involuntary resettlement or indigenous peoples impacts, ADB project teams will participate in the consultation activities to understand the concerns of affected people and ensure that such concerns are addressed in project design and safeguard plans*". In accordance with this requirement, ADB safeguard officers participated in a round of public consultation in the Project area during July 2017. This included participation for the Indigenous Peoples screening activities. During the January 2018 field work, Mott MacDonald also participated in a number of large focus group discussions to attain feedback on livelihood restoration and consultation activities being undertaken by SERD. These events are considered to meet this requirement, and SERD must integrate the results into the revised SEP.	outcomes of all disclosure and consultation events into the SEP	
6	Implement the EMP and monitor its effectiveness. Document monitoring results, including the development and implementation of corrective actions, and disclose monitoring reports.	• **Environmental monitoring:** UKL-UPL monitoring reports (for Phase I) are produced every six months and copies are being provided to local Government offices; the public can view the reports at these offices but the monitoring reports are not otherwise publicly disclosed. The bi-annual Safeguard and Social Monitoring Reports	The following improvements are recommended to ensure full compliance:	Low

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		(ie from 1st semester 2015 to 1st semester 2016) are disclosed on the ADB website[43], however, these reports were made available only from March 2017. Timeliness in on-going disclosure for future reports should be improved. • **Socio-economic monitoring:** The Phase I's SCAR contains a comprehensive assessment of the socio-economic monitoring processes that have been established by SERD. In accordance with the requirements of the 2014 SCAR, SERD have established a socio-economic baseline profile of affected and non-affected households in the community as a basis for ongoing monitoring. Socio-economic monitoring is presently undertaken as part of the implementation of the ISDP. Key findings from the 2014 and 2018 SCA will require changes to be made to the socio-economic monitoring programme, specifically: – Monitoring undertaken not only to determine the performance of the ISDP (eg if programmes have been delivered, how many people attended, what changes in crop yields results), but also the impacts to participant's livelihoods – Monitoring needs to better differentiate ISDP participant's according to their status as affected or non-affected people – Monitoring methodologies must better directly engage affected people and Indigenous People Tracking and reporting on the participation of affected people within the Project workforce.	• Timely preparation and disclosure of monitoring reports • A new template for the social aspects of the bi-annual monitoring reports to be developed and submitted. This is to include reporting of all stakeholder engagement activities and status updates on implementation of the ISDP (as detailed within the SR2 analysis as it relates to the impact the ISDP is having on restoring AHs livelihoods to pre-impact levels or better).	
7	Unanticipated Environmental Impacts: Update EA and EMP or prepare new EA and EMP to address unanticipated environmental impacts that become apparent during project implementation	**Overall finding: The Project does not have a specific mechanism in place to deal with unexpected impacts but these aspects can potentially be managed through mitigation prescribed in the Phase II ESIA and EMP.** • **Context:** For Phase I, unanticipated impacts materialised in the form of the requirement to additionally construct and drill well pad I. This was addressed through the production of a scope-specific UKL-UPL Addendum with corresponding monitoring • Changes to the Phase I design (ie well pad I) and location-specific impacts (ie exposed slopes, areas) since the IEE issuance have been noted. These details and their corresponding impacts were not captured in the IEE's assessment, but the nature and magnitude of these additional activities are not deemed significant. No unanticipated environmental impacts were otherwise identified.	The Project does not have a specific mechanism in place to deal with unexpected impacts but these aspects can be managed through the Project EMP. The inclusion of this mechanism in the EMP would reduce this risk from medium to low.	Medium

[43] https://www.adb.org/projects/47937-001/main#project-documents

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		There are minor Phase II design change/update which are yet to be confirmed, these includes: – Construction phase worker's accommodation – Transmission line detailed alignment • **Procedures in place:** There is no evidence that the Project has a specific mechanism in place to be able to identify and address unanticipated impacts.		
8	Ensure specific requirements are met for developments in critical habitats or areas of natural habitats. If a project is located within a legally protected area, implement additional programs to promote and enhance the conservation aims of the protected area. Apply a precautionary approach to the use of renewable natural resources.	**Modified and natural habitats. Overall findings: The Project is located predominately within natural habitat (primary montane forest). Mitigation including offsetting is therefore required for areas of temporary and permanent habitat loss as the Project moves into exploitation phase. Actions are included within the BAP Details of the biodiversity offsetting strategy have been developed[44]; however, the final option has not been agreed and the BOMP has not been completed. Therefore, the Project is not yet considered compliant.** • **Context:** The Project was assigned as category B during exploratory phase (ie impacts considered reversible if the Project do not proceed to exploitation stage). The majority of the biodiversity assessments and surveys undertaken were part of either the AMDAL or the Critical Habitat Assessment (CHA)/BAP of Phase II (as the land had already been cleared during the exploration phase). The AMDAL and CHA/BAP identifies modified and natural habitats in the Project area. High-level habitat mapping is provided in relation to the location of the Project; areas of permanent and temporary habitat loss are also calculated. The site covers approximately 124ha; of which 115ha is located within primary montane forest (natural habitat) and 9ha within predominantly agricultural land (modified habitat). • **Findings:** Mitigation is required for the temporary and permanent loss of natural habitat. Reinstatement measures have already been undertaken in some areas of temporary habitat loss which are no longer required for Project activities. No offsetting has been undertaken to date and the offsetting plan is still in its early stages of development. It is recommended that an initial feasibility study is undertaken following guidance outlined by the Business and Biodiversity Offsets Programme (BBOP), 2012.[45]	Partially compliant. The Project will result in significant conversion of Natural Habitat. The mitigation hierarchy has been and will be applied to avoid, minimise and restore (temporary) impacted areas. An offsetting process for permanent habitat loss is described. A biodiversity offset strategy (BOS) has been undertaken[46] and potential options evaluated to achieve this, including recommendations for a preferred option. The next step will include the preparation of a biodiversity offset management plan (BOMP) which will outline the delivery mechanism of the final agreed approach. **Until this stage has been completed we consider this compliance action to still be ongoing.**	Medium

[44] ERM. (2017). Geothermal Power Plant Rantau Dedap in Lahat Regency, Maura Enim Regency and Pagar Alam City, South Sumatra Province: Biodiversity Offset Strategy (version 3). November 2017.

[45] Business and Biodiversity Offsets Programme (BBOP) (2012) Resource Paper: Limits to What Can Be Offset. BBOP, Washington, D.C. Available on-line at: http://www.forest-trends.org/documents/files/doc_3128.pdf

[46] *Geothermal Power Plant Rantau Dedap in Lahat Regency, Maura Enim Regency and Pagar Alam City, South Sumatra Province: Biodiversity Offset Strategy (version 3)*. Environmental Resources Management Siam, November 2017.

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		Critical habitats. Overall finding: the presence of IUCN Red List Critically Endangered (CR) and Endangered (EN) species, and endemic species within the Project area triggers critical habitat requirements. Mitigation actions are included within the BAP. However, further details are required, including offsetting measures, to demonstrate no net less/net gain for these species. The Project is therefore considered not compliant. • **Critically Endangered and Endangered species:** Two species classified as IUCN Red List Critically Endangered are known to occur in the Project Area (Malayan pangolin *Manis javanica* and Sumatran tiger *Panthera tigris sumatrae*) as well as three classified as Endangered (Sumatran surili *Presbytis melalophos*, siamang *Symphalangus syndactylus* and Malayan tapir *Tapirus indicus*). • **Legally protected area:** The Project is not located directly within any legally protected areas for nature conservation. However, the forest is designated as a hutan lindung (protection forest) for ecosystem services (watershed). • **Endemic species:** The CHA identifies the Project Area as being of special significance for four endemic species: *Rafflesia bengkuluensis*, Broad-nosed Sumatran maxomys *Maxomys inflatus*, Sumatran tiger and *Rhacophorus bifasciatus*.	Partially compliant. Mitigation measures to avoid and minimise adverse impacts on critical habitat trigger species are given in the CHA/BAP. No targeted off-setting measures for these species are given to demonstrate net gain required under IFC PS6; however, a general offsetting process is described in the BOS. Stakeholder agreement is required that the BOS is compliant with PS6 and a BOMP will need to be produced (see 6.1 above). **Until this stage has been completed we consider this compliance action to still be ongoing.**	Medium
		Legally protected areas. Overall finding: The Project is located within nationally designated forest area (Hutan Lindung). All regulatory requirements pertaining to land use within the forest are for Phase II activities are currently in progress. • **Legally protected area:** As mentioned above, the Project is not located directly within an internationally recognised protected area (IUCN categories I-VI); however, the forest is protected at national level (Hutan Lindung). • **Cooperation with authorities:** For usage of land within the Hutan Lindung, several requirements are required to be fulfilled (eg Borrow-Use Permit, Forest Management Plan). All regulatory requirements associated with usage of land in Hutan Lindung for Phase II are in progress	Compliant	Low
		Invasive alien species. Overall finding: An assessment has been undertaken in the ESIA. An invasive species management plan is currently in progress of being drafted. • **Project context:** Project activities have the potential to introduce invasive alien species into areas with previously limited human presence (notably primary forest) through the creation of new roads and importation of construction materials.	Compliant. Locations of invasive alien species recorded within the Project Area is provided in the CHA. The production of an invasive alien species management plan is listed as an	Low

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		• **Assessment undertaken:** The CHA identified four alien invasive species (three plant and one mammal) which were recorded during the baseline surveys or from other datasets. No evidence of the occurrence of these species is provided, their introduction into the Project Area (both present and future) or potential risks as a result of Project activities is given.	action within the BAP and has been completed.	
		Management and use of renewable natural resources. Overall finding: the Project design considers sustainable resource use and is generally compliant. • **Project design:** The Project is designed to manage natural resources in a sustainable manner, for example through re-using drilling water to minimise water consumption and reinjecting drilling fluids to avoid discharges to the environment. Further details of these measures are provided below under '9. Pollution prevention and abatement'. • **Ecosystem services:** An ecosystem services assessment was not included within Phase I documents (ie IEE, the SCAR or the UKL-UPL). A very brief commentary on ecosystem services was included within Phase II's ESIA, which only mentions possible impacts on water resources (ie provisioning service – freshwater) is negligible (in line with the water availability assessment in the ESIA). Evidence gathered during the site visit indicates that aside from areas of land acquired which were used for agricultural practices (and therefore compensated for), the areas where the well pads and other key Phase I components are situated, are routinely used for other provisioning services (eg forest goods, food). For Phase II components (eg well pad L, M, N and X), given that they are located in high altitudes areas with poor accessibility (ie prior to construction of Project access roads), any existing usage by local communities is likely to be limited. In any event, any livelihood impacts due to the Project will be assessed and managed through the Project's livelihood restoration activities (ie ISDP).	Compliant.	Low
9	Apply pollution prevention and control technologies and practices consistent with international good practices	**Overall finding: Project design and measures implemented for certain environment aspects are considered compliant.** • **Resource conservation and energy efficiency:** There is minimal discussion on resource efficiency in the IEE or ESIA. However, this is not deemed a risk as geothermal projects are not considered resource intensive in terms of energy use, water use or other resource or material use. Furthermore, SERD has undertaken resource efficiency measures such as the re-use of drilling water to	Compliant	Low

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		reduce water consumption. The plant technology chosen (ie dual flash) is also a commonly used, proved design, which has shown to be an efficient power generation option. • **Wastes:** A waste management plan is included in Supreme Energy's SOPs. Domestic waste is stored in a municipal waste container on site and when full this is collected by a licenced waste contractor for disposal off site. For the construction phase, SERD also has a management plan specifically for drilling cuttings, whereby the cuttings are to be utilised as construction materials or permanently disposed at the bunker. This is appropriate, since SERD uses water-based drilling muds, whereby the produced cuttings are considered non-hazardous waste under Indonesian regulations. There are no particular concerns for this aspect. • **Hazardous materials:** Drilling cuttings from drilling activities using water-based drilling muds are not classed as a hazardous material under Indonesia regulations. Drilling cuttings are temporarily stored prior to their reuse for fill during earthworks or disposal in the disposal pits. Explosives (as emergency provisions for dislodgement of drilling pipes) are stored in the explosive bunker at disposal pit 2, which is subject to security and storage requirements approved by the government. • **Pesticide use and management:** There are no documented or proposed use of pesticides for Project activities. • **Greenhouse gas emissions:** As a geothermal energy project, the Project is expected to have net GHG emissions savings when compared to alternative fossil fuel equivalent. • **Hydrology:** The MSE constructed by SERD at various river crossings ensure that the existing waterways in the Project area are not altered. No further river crossing or major river works had been proposed for the Project.		
		Overall finding: Project design and measures for certain environment aspects are to be improved in order to be aligned with good practice and international standards. • **Dust:** The main source of dust for the Project is only during the construction phase (ie from construction activities, earthworks and traffic). The ESIA presents a 'dust line source modelling' assessment of dust concentrations and concludes that the dust impact will be potentially significant but can be managed through appropriate mitigation measures. This method is not widely used internationally, but the conclusions and mitigation measures	No critical flaws or risks were identified for these aspects. The management of the gaps and risks associated with these identified aspects are expected to be adequate, after the inclusion of additional site-based mitigations, as well as establishment of key commitments and obligations. The actions respective to each	Medium

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		appear to be appropriate. However, additional measures in line with international good practice should also be incorporated, • **Erosion and sedimentation:** From the previous scope of work (ie Phase I), SERD has identified exposed areas in their "Regreening Area Plan- Phase 1" (June 2014), and "Regreening Area Plan- Phase 2" (August 2014). For the well pads (ie well pads B, C, E and I), the ground has been packed and perimeter drainage constructed. However, there is still many areas such as road sides and slopes which are yet to be fully revegetated, despite being identified since 2014. Of note, the ESIA ESMP mentions that bamboo species (ie reportedly to be considered native species) are to be used for erosion control. Their suitability for deployment as revegetation species should be carefully reviewed to ensure that no invasive species are introduced to the forest and that the replanting regime is aligned with the overall on-site restoration efforts. For future Phase II works, as identified in the ESIA, erosion and sedimentation impacts are only mainly during the earthworks and civil construction during the construction phase. Particularly susceptible areas have been identified to be at the new well pad area (ie well pad L and M), which are planned to hold earth stockpiles for access road construction. Although it is not explicitly mentioned as a highly erosion susceptible/vulnerable area, the 2.5km reinjection pipeline is also considered to be one of such area. As it cuts from natural forest on a uneven terrain, there might be earthworks required within a narrow corridor with potential to affect the surrounding vegetation with sedimentation. Several recommendations are proposed to improve upon these aspects. • **Hydrogen sulfide (H_2S):** Three key aspects of the H_2S emissions for the Project are as follows: – Accidental release due to well blow out - The Project's EPRP includes well blow out during drilling and major H_2S releases. However, no quantitative monitoring or alerts levels are prescribed in the procedures. It is not clear how community occupational health and safety would be safeguarded in the event of a major H_2S release, such as what and where monitoring would be undertaken to determine ambient concentrations or which trigger levels would apply for notifying the community or commencing evacuation. Addressed by a EPRP	aspect have been summarised within Section 4.2..	

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		– H_2S emissions during well testing - air quality impacts from production well testing have not been assessed; this should be included for completeness – H_2S emissions during power plant operations - the operational air quality assessment has been carried out using the CALPUFF model, whereby the modelled results show that there are no exceedances of the 24-hour WHO guideline value for H_2S • **Water resources:** The ESIA makes reference to a SERD document which shows that the water usage of the Project activities during construction and operation are 4.2% and 0.5% of the daily flow at the water intake sources respectively. Although the percent utilisation of water source is considered low, review of the methodology for determining water availability has shown that this is based on one-off flow measurements (ie in September, outside of the dry season – June to August) and very rough estimations. Hence, SERD will need to undertake the appropriate measures to mitigate the uncertainty in the water availability. • **Wastewater Discharges:** During construction phase, the ESIA identifies the wastewater discharges as being domestic wastewater from worker's accommodations and washing water from the on-site concrete batching plant. There is no discharge from the drilling activities, as any effluent are pumped into the mud pond, to be eventually either recycled or reinjected into the ground. For the domestic wastewater, these are to be treated by septic tanks, and this is considered adequate. For the on-site concrete batching plant, there is likely to be a considerable amount of silty washing and runoff water from its operations. It is recommended that SERD or the EPC contractor produce a wastewater management plan, specific to the concrete batching plant, prior to commencement of construction. • **Traffic:** SERD has a site-specific traffic management plan, which presents good practice for managing traffic impacts and safety. However, it was noted that access roads pass through and close to residential areas and therefore communities may be affected by dust, noise, congestion and safety issues. In particular, it was mentioned in the plan that deliveries will be undertaken at night to reduce traffic congestion as well as improve safety. There is no concern on the Project's traffic management, however, the proposed measures would have a high potential to cause noise impacts (ie discussed under "Noise" below). • **Noise:** For construction activities, noise will be generated during earthworks, construction, drilling, well testing and traffic. Most of		

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		these impacts are not considered significant, with exception of construction traffic. For construction traffic, both the AMDAL and ESIA concluded that there is likely to be exceedance of both Indonesian and IFC noise standards, especially during night time (as mobilisation of convoys are scheduled at night to avoid congestion and improve safety). Some mitigations were prescribed within the RKL-RPL or ESMP, as well as SERD's site-specific traffic management plan. However, the documentation did not demonstrate conclusively that traffic noise will be effectively mitigated. Further measures are recommended to improve the management of noise issue. For the operation phase, the main source of noise is from the power plant, which is more than 2km and 6km away from isolated coffee farmer huts and Dusun IV respectively. Hence, the noise impact from power plant operations is not considered to be significant. • **Land/groundwater contamination:** The Project is predominantly located on natural forest or coffee plantations. Soil sampling at the Project site indicates that existing contamination is not an issue. Within SERD's existing management plans, there are appropriate mentions or measures mitigation land and groundwater contamination risk. For the construction phase, there is a certain level of risk for land/groundwater contamination due to the fuels and chemicals being stored in temporary facilities, in isolated areas within natural habitats surroundings. It is recommended that the Project identifies these sources of contamination risks (ie especially for the isolated pumping station fuel tanks) and establish an inspection regime (eg secondary containment, leakage) to be implemented throughout construction. For the operational phase, there is significantly less risk as hazardous waste, fuel tanks and chemical storage are likely to be stored in permanent facility at the power plant area.		
10	Provide workers with safe and healthy working conditions and prevent accidents, injuries, and disease. Establish preventive and emergency preparedness and response measures to avoid, and where avoidance is not possible, to minimize, adverse impacts and risks to the health and safety of local communities.	During Phase I, both SERD and LCI worked in accordance with detailed health, safety and environment plans. The SERD document (titled "Supreme Energy Safety, Health and Environmental Manual") and LCI document ("SERD Civil and Construction Project Health and Safety Plan") were provided for review and are considered to be robust documents, suited to providing workers with safe and healthy working conditions. Health and safety statistics provided by SERD show over 3,500,000 hours have been worked (including all contractors) since the last lost time accident (LTA) in 2013.	The ESIA does not adequately assess impacts associated with influx of workers to the local area and potential impacts to health services and the exposure of the community to other influx related impacts. The following must be undertaken to assess and manage these impacts:	Medium

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		Indonesian regulations require private companies to have a set of company regulations ("Peraturan Perusahaan") which is submitted to and approved by the Ministry of Manpower. The presently approved version has been provided by SERD and forms the basis of their human resources policies. This covers matters such as their grievance policy and procedure, working conditions, terms of employment, collection bargaining and non-discrimination and equal opportunity. All of these aspects have been reviewed and are consistent with local laws and international best practice SERD have in place an extensive SHE Policy and Manual. It also maintains a mandatory training register. The policy and training programme are considered appropriate to effectively manage occupational health and safety risks for SERD employees. Attachment B-16 of the EPC Contract provides a comprehensive overview of the safety, health and environmental requirements. This also requires the preparation of a Project Specific SHE Plan which satisfies SERD requirements, applicable national laws and regulations and industry best practices. This document has not yet been prepared as the EPC and drilling contractors are yet to be appointed, however the system put in place is sufficient to manage workplace health and safety. The public health baseline presented within the ESIA recognises that the local health network has limited capacity to provide services to the existing population of the area. The ESIA describes a risk that the Project workforce could lead to increased use of local public services and increase the spread of disease. A Community Safety Health and Environmental Plan is proposed by the ESIA. Information gathered during the site visit confirms during an interview with Segamit village public health workers noted that there was a 35% increase in health consultations at the clinic during the peak of the exploration phase. This was largely due to workers from the exploration civil construction workforce being housed within the local community and placing pressure on local services. The ESIA does not adequately describe how many of the peak construction workforce (over 2,100 people) are to be housed in the local community and what impacts this influx will have on local services, community health and culture. SERD must undertake forward planning in cooperation with the selected EPC contractor to firstly define the overall workforce accommodation strategy and then identify and assess impacts accordingly. The ESIA commits SERD to developing and implementing a Public Health Awareness Raising Plan to address aspects such as malaria prevention, hygiene, sanitation and community health issues, and to monitor local resource impacts.	• Develop a workforce accommodation strategy • Develop and implement an Influx Management Plan • Develop and implement the Community Safety, Health and Environmental Plan committed to within the ESIA	

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
11	Conserve physical cultural resources. Provide for the use of "chance find" procedures that include a pre-approved management and conservation approach for materials that may be discovered during project implementation.	The ESIA submitted for Phase II provides evidence that there are no items of cultural heritage within the Project area. Consultation with village heads during the site visit did not reveal the presence of any tangible or intangible cultural heritage that may be impacted by the Project. A chance finds procedure has been developed and was implemented during Phase I. SERD has reported that there were no incidents of chance finds to date, and that the chance finds procedure will continue to be implemented.	No compliance concerns	Low

Source: Mott MacDonald

Table 14: Compliance review: ADB Safeguard Requirement 2 – Involuntary Resettlement

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
1	Involuntary resettlement should be avoided wherever possible	**SERD led land acquisition** The Project is situated and has been designed to avoid displacement impacts and has not resulted in any physical displacement. SERD actively attempted to achieve negotiated settlements with all land owners. In cases where such an outcome was not able to be achieved, SERD identified alternatives to the Project's design. While not specifically stated within any Project documentation, SERD has stated there were at least two cases where realignment of the road design was undertaken where a negotiated settlement with a land user was not able to be achieved. Based on the evidence presented within the SCAR and through the ESDD process, no evidence of any legal disputes or expropriation of land was uncovered. SERD has completed all land acquisition required for the Project, as described within Appendix C. This includes all compensation payments and receiving relevant certificates and permits from the Government of Indonesia. **PLN led land acquisition** PLN is leading the land acquisition for the TL which involves securing land for 116 towers (either 225m2 or 400m2 depending on final design) and a 20m wide right of way (ROW) for the entire 39km length. 78 towers are situated on private land, with a total of 38 located within the Protection Forest. 36 of the towers within the Protection Forest will also be within the WKPB. Based upon outcomes of discussions with PLN project design to date has avoided any physical displacement, however land valuations and payments have not yet occurred. A description of the legal mechanisms through which PLN will acquire the land is provided in Appendix C and covered in detail within the 2018 SCAR. The legal mechanisms which PLN will utilise will mean that negotiated	SERD has completed all land acquisition required for the Project and achieved negotiated settlements for all transactions. The land acquisition for the TL is being led by PLN who have noted they will use expropriation powers available to it where necessary. As this is an associated facility, SERD is likely to have limited ability to require PLN to ensure negotiated settlements for all land transactions. It is recommended that SERD seek monthly updates from PLN as to the status of the land acquisition as means to monitor compliance with the applicable regulatory framework, coupled with an assessment of overall impacts to livelihoods. This is further described in 6 below.	Medium

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		settlements will not be achieved as it intends to resort to expropriation powers available to it to ensure it meets its obligations under the PPA. For sections of the TL outside of the WKPB, both SERD and Mott MacDonald consider that SERD will have limited ability to influence PLN to comply with all aspects of PS5. Description of the aspects of the TL land acquisition relevant to compliance with principles of replacement cost, consultation and livelihood restoration are described further in Item 2 and 6 below.		
2	Minimize involuntary resettlement by exploring project and design alternatives	**SERD led land acquisition** As noted above, the land acquisition undertaken by SERD has been on a negotiated settlement basis and take into account replacement cost principles for land, assets and crops. A total of 157 HH's have been economically displaced by project land acquisition activities to date (hereafter referred to as affected households – AH). 100% negotiated settlements were achieved. Where negotiations with land owners did not achieve a negotiated outcome, SERD sought to redesign aspects of the Project to avoid expropriation. **PLN led land acquisition** PLN has advised that the selected alignment avoids any physical involuntary resettlement. However, while all land acquisition will only result in economic displacement, expropriation powers are readily available to PLN. There are separate regulatory frameworks for tower pads in private land, ROW in private land and all land within the Protection Forest. Under each regulatory aspect PLN has the power to compulsorily acquire land through a process of vesting the assessed compensation amount within the district-level court system and formally taking ownership of the land. This process allows PLN to commence construction of the TL while the court system resolves any matters of conflicting claims of owners of the land. The court system does not determine compensation values which is determined by an independent valuation report. In order to meet its obligations under the PPA, PLN has stated that it intends to use these powers where negotiated settlements cannot be reached. Based on this, the land acquisition process for the TL is considered to be involuntary resettlement.	SERD has demonstrated a commitment to avoiding involuntary resettlement. While physical involuntary resettlement has been avoided, PLN will use expropriation powers in lieu of changes in TL design or alignment. As PLN is required to follow the relevant regulations, SERD cannot required it to avoid all involuntary resettlement. It is recommended that within the scheduled monthly meetings with PLN that SERD seek notification of any cases of land acquisition being resolved through the expropriation.	Medium
3	Conducting census of displaced persons and resettlement planning	**SERD led land acquisition** In developing the Integrated Social Development Plan (ISDP), a socio-economic profile of the affected persons (ie members of the 153 households impacted by the land acquisition process) was established based upon primary data. The survey which was conducted in October 2015 covered 122 households, including 78 households which are defined as being affected by the land acquisition phase. There were	There are no compliance gaps, however it is recommended that SERD utilise the stakeholder engagement process to identify affected households still within the area who did not participate	Low

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		153 households originally impacted by the land acquisition phase. This is a low coverage level (approximately 50%), and conversations with SERD indicated that this was largely due to the fact that many of the households who owned land do not reside within the area, or were absent during the period of the survey. Through its ongoing stakeholder engagement activities, SERD should seek baseline data for people who still reside within the WKP area and surrounds and who did not participate in the initial survey. The outcomes of the socio-economic profile are embedded within the ISDP. SERD is also collecting separate secondary and primary baseline data for the preparation of the Phase II ESIA. As a good practice measure, all of these separate studies should be integrated into a single document to present a complete socio-economic profile of the area. The socio-economic profile presents details of all land holdings of the surveyed household, not just the parcel impacted by the land acquisition. This is considered an appropriate level of information to assess the true magnitude of livelihood impacts. **PLN led land acquisition** Information presented by PLN during a meeting in Palembang indicate that while it has undertaken a detailed inventory and measurement of land and assets for each AH, there has been no census or socio-economic profile developed. Mott MacDonald understands that development of a socio-economic profile is not required by the regulatory framework being used by PLN	within the household survey, and seek to attain baseline data The regulatory process being used by PLN does not require a socio-economic profile be developed. Given the anticipated minor nature of impacts for AHs within private land (those who are being compensated at replacement cost) such a survey is not considered necessary. As an action item, SERD must develop a basic socio-economic profile of the 38 AHs within the Protection Forest to determine the magnitude of uncompensated impacts and develop appropriate livelihood restoration measures as part of the ISDP.	
4	Carry out meaningful consultation with displaced persons and ensure their participation in planning, implementation and monitoring of resettlement program	**SERD led land acquisition** Consultation with displaced people during the land acquisition process was undertaken throughout the planning and execution was done in a thorough and culturally appropriate manner. SERD has demonstrated a commitment to continual and meaningful stakeholder engagement with the local community and AHs in the development and implementation of the ISDP which forms the key element of its livelihood restoration activities. For example, prior to implementing the 2nd round of coffee cultivation training program in December 2017, SERD conducted several consultation activities with different stakeholder groups, including village leaders and beneficiaries from affected communities. During the socio-economic baseline survey undertaken in 2015, SERD sought feedback from all participants to feed into livelihood restoration and community development programmes. This information guided the development of the programmes which have since been integrated into the ISDP. Initial implementation of the ISDP resulted in low participation of AHs, with 14 of 112 participants belonging to AHs.	Overall, SERD's ongoing stakeholder engagement activities with the local community and AHs are being undertaken in a culturally appropriate manner. However, the review of the SEP, Stakeholder Engagement Log, and audit findings shows that some aspects are required to be improved. To secure full compliance, SERD must better define ISDP and SEP stakeholders so that the targeted stakeholder engagement techniques can be integrated into formal processes, continually update the list of stakeholders to include all AHs impacted by land	Medium

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		Reasons for these low participation rates included a lack of targeted engagement and short notification periods. Livelihood restoration activities in 2017 (coffee growing and cultivation techniques) resulted in a much higher participation rate, with 87 AHs members attending. Outcomes of Mott MacDonald's fieldwork, primarily through FGDs with three beneficiary groups from Tunggul Bute and Segamit Villages and Rantau Dedap Hamlet, demonstrate a high level of awareness of the ISDP programs offered by SERD. Many participants attended the coffee training program. This demonstrates effective use of engagement, which based upon outcomes of document review and interviews was shown to integrate a range of formal and informal meetings and focus group discussions. Communication channels which could be utilised to support these main methods (such as information hand-outs and booklets) are not being utilised by SERD. Several participants in the FGD with Segamit Village's beneficiaries suggested SERD to use phone messages to affected people, which indicates that in the future SERD should seek to make better usage of mass media methods such as social media or phone messages (eg WhatsApp or traditional text message). **PLN led land acquisition** Information regarding consultation to date has not been provided by PLN, however it is understood that at least two rounds of consultation have been undertaken with all AHs. This includes initial disclosure of the TL project and land acquisition requirements, and a second meeting to announce the outcomes of the land measurement and crop inventory survey. AHs within the Protection Forest when interviewed were able to confirm this level of consultation.	acquisition in 2017 and into 2018 (particularly for the TL), improve logging and tracking of all stakeholder engagement activity, and making effective use of communication channels such as written publications, social media and phone messaging/texting. Based on representation from PLN and outcomes of interviews with AHs in the Protection Forest indicate that consultation undertaken to date has been carried out in accordance with the requirements of Indonesian regulations and SR2. It is recommended that within the scheduled monthly meetings with PLN that SERD seek notification of any planned and recently undertaken consultation. •	
5	Establish grievance redress mechanism	**SERD led land acquisition** A grievance mechanism was put in place during the land acquisition period and was shown to be effective in receiving and addressing grievances. A total of five grievances were received between August 2012 and April 2014. Based on a review of the Grievance Log, all were resolved in collaboration with a number of different parties (including village heads and the land agency) and within a two-week period. A Project Grievance Redress Mechanism is established and detailed in the SEP. The SEP describes grievance resolution procedures, the key point of contacts, community committees, and the disclosure of grievance mechanism. The review of the Grievance Log and completed grievance forms shows to be effective in receiving and addressing grievance. However, the grievance log should include more details of the grievant, including contact and address.	SERD has shown a strong commitment to implementing its grievance mechanism as it applies to the land acquisition processes. This needs to be applied to future adjustments of the IPPKH which may impact land users. The grievance mechanisms put in place by the Indonesian regulations applicable to the TL land acquisition are consistent with the requirements of SR2. It is recommended that as part of	Low

<table>
<tr><th>No.</th><th>Policy principles</th><th>Project setting/background</th><th>Compliance review</th><th>Risk ranking</th></tr>
<tr><td></td><td></td><td>During the FGDs and interviews, all participants expressed that they were aware of the project grievance redress mechanism and had the Project's grievance contact number. It is noted that through consultation activities, grievance contact detail cards were provided to participants.
The audit findings further show that there is a two-way feedback mechanism in place for affected people to raise their concerns associated with ISDP program and project-related information and activities: feedback through meetings, SERD's Field Relation Officer, and Village/Sub-village Heads. All participants during the three FGDs expressed that they were satisfied with the Project's feedback mechanism.

<u>PLN led land acquisition</u>
PLN has not noted how it has disclosed the regulatory grievance mechanism or if any grievances regarding the land acquisition process have been lodged to date.</td><td>the monthly meeting with PLN, that SERD seek an update on the number and status of any grievances lodged.</td><td></td></tr>
<tr><td>6</td><td>Improve or at least restore the livelihoods of all displaced persons</td><td><u>SERD led land acquisition</u>
The Project is considered to have led to the economic displacement of 157 households. As noted in the below table, 98 households (HH's) have lost more than 10% of their land and are therefore considered to have experienced significant impacts. The SCAR 2014 also noted that 109 of these HH's are considered as vulnerable.
<table>
<tr><th>Extent of impact</th><th>HH's - private land</th><th>HH's - protection forest</th></tr>
<tr><td>0-10%</td><td>33</td><td>26</td></tr>
<tr><td>10-20%</td><td>17</td><td>30</td></tr>
<tr><td>20-50%</td><td>7</td><td>31</td></tr>
<tr><td>50% or more</td><td>0</td><td>13</td></tr>
<tr><td>Total</td><td>57</td><td>96</td></tr>
</table>
Source: SCAR 2014 (Greencap), Table 4.5 "Extent of Land Loss" & SCAR 2018 (Mott MacDonald) Table 3 "Summary of land owners involved in 2017 land acquisition"
As an outcome of the SCAR, SERD undertook a socio-economic baseline of project affected households to aid development of the ISDP. The survey which was conducted in October 2015 covered 122 households, including 78 households which are defined as being affected by the land acquisition phase. It also assessed the vulnerability of these affected households, and determined that there were 17 HH's considered as "most vulnerable". It also noted that many</td><td>Land acquisition has led to economic displacement, the impacts of which SERD are committed to managing through its ISDP. Improvements to how programmes are designed and implemented is demonstrating higher participations rates of AHs in effective training. To secure full compliance with PS5, a number of recommendations have been made to improve the ISDP.
For the land acquisition activities for the transmission line within the Protection Forest (both tower pads and right-of-way) SERD is to undertake the following:
• Develop a basic socio-economic profile of the 38 AHs within the Protection Forest to determine the magnitude of uncompensated impacts and develop appropriate livelihood restoration measures as part of the ISDP.</td><td>Medium</td></tr>
</table>

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		of the HH's had not effectively used their compensation payments to restore their livelihoods, eg money was primarily used for consumptive purposes (houses, vehicles, household goods), debt repayments and education expenses. There were 153 households originally impacted by the land acquisition phase. This is a low coverage level (approximately 50%), and conversations with SERD indicated that this was largely due to many of the households who owned land not residing within the area, or were absent during the period of the survey. Through its ongoing stakeholder engagement activities, SERD should seek baseline data for people who still reside within the WKP area and surrounds and who did not participate in the initial survey. The feedback gained through the socio-economic survey also included input into livelihood restoration measures to include in the ISDP. The ISDP is being utilised as a mechanism to improve or at least restore the livelihoods of project affected people, as well as provide broader project benefits (Corporate Social Responsibility, CSR, type focus) to the surrounding communities. The document recommends a range of partner institutions to implement agricultural, vocational and services based livelihood assistance programmes. It also includes a safety net programme to allow vulnerable people to participate. The list of participants for the safety net programme is considered limited (17 people only compared to an overall total of 109 affected households defined as vulnerable within the 2014 SCAR) and it is not clear whether those listed are affected households or vulnerable households identified as occurring within the Project Area through the socio-economic baseline in 2015. SERD initially engaged IHS in 2015 to develop the ISDP. This acts as a mechanism to improve or at least restore the livelihoods of project-affected people, as well as to provide broader project benefits to the surrounding communities. In addition to the ISDP, since 2013, SERD has been annually developing and carrying out their Corporate Social Responsibility (CSR) programs for affected communities. SERD's CSR programs focus on providing donations for schools and mosques, agricultural equipment, and seeds, and developing local roads systems (see Appendix C for the list of CSR program implemented up to date). The ISDP is based on the two key components, including: (i) Community Capacity Building; and (ii) Livelihood Development. The Community Capacity Building Program aims to develop the capacity for the most affected communities through the building of life skills based on the employment needs of the local economy and the availability of local skills. The livelihood development aims to improve the livelihood of the most economically-unfortunate and vulnerable people. These programmes were targeted at the broader community with the WKPB	• As part of the socio-economic survey undertake a basic audit to determine if all affected households have been provided compensation in accordance with the regulations implemented by PLN and the independent valuation • Incorporate AHs from the Protection Forest into the ISDP and its monitoring programmes based upon the assessed level of impacts	

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		in general rather than being specifically targeted at AHs and were based upon inputs collected from participants during a socio-economic and need surveys. The results of this survey demonstrated that in many cases, AHs had made ineffective use of their land compensation payments and recommended a range of partner institutions to assist in the implementation of agricultural, vocational and services based livelihood assistance programmes. It also includes a safety net programme to allow vulnerable people to participate. Initial implementation of the ISDP showed a low participation rate of AHs (as noted above). Taking lessons learnt from the 2016 coffee training programs, SERD organised a series of coffee training sessions specifically for AHs in December 2017. There were reportedly 87 participants in the 2017 sessions, which is a greatly increased participation rate from 2016. Different from the previous training, the 2017 program was targeted at directly affected people and vulnerable people (see Appendix D for the list of participants in the training). However, the training documentation does not record the status of the people participated within the programs, ie if they are defined as households affected by the land acquisition, or if they are vulnerable. The review of ISDP and outcomes of the consultation undertaken by Mott MacDonald in January 2017 and January 2018 showed that the livelihood restoration elements of the ISDP (primarily agricultural training such as improved coffee farming techniques and introduction of new types of fruits and vegetables considered appropriate for the setting) have been successful. Interviewed participants noted improved yields in coffee and general diversification of their livelihood strategies. SERD is utilising the outcomes of the ongoing monitoring processes to continually improve its programmes. Mott MacDonald has identified additional areas of improvement to ensure clarity of documentation and effectiveness of implementation and monitoring of the ISDP. In these regards, SERD must update the ISDP report so that it is a concise plan (at the moment, it includes outcomes of socio-economic baseline assessments and outcomes of consultation) which is focused in a manner that can address impacts to AHs and distribute Project benefits to the broader community in the most effective manner possible. The revisions to the ISDP must be undertaken as an Action Item as are to include: • Beneficiaries must be clearly defined under different components of the ISDP plan to allow for separation of aspects targeted at AHs for livelihood restoration measures and what comprises of general CSR initiatives and distribution of positive project benefits to the broader community. A recommended definition and eligibility is as follows: – Priority 1 (P1): those who are members of AHs directly impacted by the Project land acquisition and having above 10% of total		

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		productive land acquired (and thus significantly impacted by land acquisition) based on the 2017 SERD Land Procurement Documentation, or are defined as vulnerable AHs regardless of the extent of impacts – Priority 2 (P2): those who are members of AHs directly impacted by the Project land acquisition and having than 10% of total productive land (and thus not significantly impacted by land acquisition) based on the 2017 SERD Land Procurement Documentation, or are defined as vulnerable households residing in the WKPB – Priority 3 (P3): those who are indirectly impacted by the Project (ie residing within the WKPB) • Provide an overview of applicable standard requirements and commitments from SERD • Provide a proposal procedure for requesting a specific ISDP programs • Provide stakeholder engagement and disclosure strategies for ISDP programs based upon the required amendments to the SEP • Role and responsibility description • Providing monitoring, evaluation, and reporting procedures • Provide budgets required to implement the project on a year by year basis • Provide time bound implementation schedule **PLN led land acquisition** For the TL, as compensation for towers and ROW in areas of private land is anticipated to be provided at true market and replacement rates, and given the small areas of land involved impacts to livelihoods are anticipated to be minimal. As SERD has limited ability to influence the decision-making processes of PLN outside of its WKPB, it is recommended that its obligations for livelihood restoration be limited to consulting with PLN and sub-district and village heads affected by the TL to ensure all AHs are able to access the sub-district level agricultural extension services that are funded by the Province of South Sumatra. Within the Protection Forest, as compensation is only being provided for crops and assets on the land, the principles of replacement costs are not being adhered to and the likelihood of livelihood impacts is therefore increased. Interviews with AHs from Rantau Dedap village (within the Protection Forest) indicated they would only be losing between 1 and 5% of their total productive land. To confirm the extent of livelihood impacts to all AHs within the		

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		Protection Forest SERD should undertake a basic socio-economic access to precisely define the nature and significance of impacts. As the majority of AHs within the Protection Forest are also within the WKPB (36 out of a total of 38) it is considered that SERD has sufficient degree of influence to include them within the ISDP as either P2 or P3 beneficiaries (based on the above recommended categorisation).		
7	Land based resettlement strategy	**SERD led land acquisition** A land based resettlement strategy was not pursued, however no specific reasons were provided why. There have been no further actions by SERD since the SCAR was completed which would be classed as providing additional land based compensation. As noted previously, the ISDP put in place by SERD has a strong focus on providing agricultural extension services to improve outputs from the remaining land holdings of affected people. Monitoring data presented and evidence gathered during consultation as part of the site audit indicates that this approach can be successful and therefore reduce the impacts associated with not being able to provide land for land replacement.	No compliance gaps identified at this stage Land acquisition for the TL is still ongoing. Prevailing regulations for private land are based on market valuations for land, assets, and crops. Non-titled land users within the Protection Forest are provided with compensation only for crops. To determine if concepts of market valuation are being adhered to it is recommended that SERD provide a copy of the KJPP's final report	Low
8	All compensation should be based on the principle of replacement cost	**SERD led land acquisition** The asset valuation procedure is assessed to be a negotiated settlement process which incorporates principles of replacement value for both land and assets. SERD has achieved this for land within the Protection Forest and within Private Land. All interviewed land owners during the January 2018 field work reported that they were satisfied with the nature and value of the compensation provided by SERD. Three of the four interviewed farmers reported that they had used the compensation payments to buy land of at least equal area outside of Protection Forest where formal private ownership is able to be secured and thus consistent with the principles of full replacement cost.) the requirements of SR2. The SCAR also noted that some affected people (five households up until January 2014) were able to purchase new land holdings within a 5 to 10km radius of their existing holdings. **PLN led land acquisition** Using the available regulatory framework, aspects of the TL land acquisition will likely result in compensation at replacement value:	There are no compliance gaps identified in the land acquisition undertaken by SERD The regulatory process being used by PLN is anticipated to result in compensation at replacement cost for all land, assets and crops within Private Land. It is recommended that SERD attain a copy of the independent valuation report from the KJPP and PLN once it has been completed. For AHs within the Protection Forest area, SERD must as an action item provide livelihood restoration assistance where deemed necessary.	Low

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		• Land acquisition of the tower pad areas within private land will be undertaken in accordance with Law 2 /2012 and Presidential Regulation 71/2012 which contains provisions to undertake an independent valuation of land and assets to offer compensation at true replacement cost. Cash compensation only is provided, no additional benefits such as livelihood support is provided • Land within the ROW is not permanently acquired, rather PLN will secure an easement over the land in which a height restriction on crops and structures will be enforced. Compensation will be calculated in accordance with Ministerial Decree 38/2013, which generally provides compensation payments at 15% of assessed market value. Cash compensation only is provided, no additional benefits such as livelihood support is provided • For all AHs within the Protection Forest, compensation for both tower pads and the ROW will be provided in accordance with Decree 33/2016. This only provides compensation for crops and assets, not for the value of the land as they are considered non-titled land users. Cash compensation only is provided, no additional benefits such as livelihood support is provided. The concept of market rates is based upon independent valuation undertaken by a registered independent and registered public valuation company (known as a *Kantor Jasa Penilai Publik* – KJPP). PLN has recently engaged a KJPP and it is recommended that SERD secure a copy of the final report. Matters pertaining to lack of livelihood benefits are described within 5.7 below.		
9	Provide relocation assistance to displaced persons	There is no physical displacement as a result of SERD led land acquisition and based upon information from PLN there will be no physical displacement associated with the TL.	No compliance gap	Low
10	Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets.	**SERD led land acquisition** For all the livelihood acquisition within Private Land and Protection Forest areas prior to April 2014, the 2014 SCAR confirmed that all displaced people without titles to the land were provided compensation at rates that compensated for all land and non-land assets at full replacement value. As part of the last adjustment to the IPPKH, four AHs were identified as using land for the purposes of coffee plantations within the Protection Forest over which they had no recognisable title or any valid legal claims to secure any form of title. SERD has recognised these AHs as users and occupiers of the land and provided them with compensation for loss of all non-land assets. These assets were primarily composed of productive coffee plants. The valuation mechanism SERD utilised through the negotiation process provided for prices much higher than normal market value for these plants. Three out of four interviewed	No compliance gap for any of the SERD led land acquisition. The approach being taken by PLN also ensure that AHs using land for which they have no recognisable legal claim (ie those within the Protection Forest) will be compensated for crops and assets at replacement land.	Low

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		AHs noted that they were able to utilise all/part of this compensation money to secure new land of equal or larger area which was suitable for growing coffee. This land was outside of the Protection Forest and came with SKT, the first step in attaining formal legal title. **PLN led land acquisition** For AHs within Private Land areas, PLN has noted that it will recognise all as having formal legal title to the land parcel. This is regardless of whether they hold a formal SHM, or if it is held under SKT or the traditional Tunggu Tubang system utilised by many Semendo families. AHs within the Protection Forest do not have, nor are they able to have, any formal recognizable legal rights t the land they occupy. However, PLN is able to provide compensation at replacement cost for assets and crops.		
11	Pay compensation and provide other resettlement entitlements before physical or economic displacement	**SERD led land acquisition** As confirmed within the 2014 SCAR, all 153 AHs impacted by the land acquisition between 2011 and 2014 received all necessary compensation prior to experiencing economic displacement. The four AHs from the 2017 land acquisition for the SERD permanent accommodation facility were all interviewed during January 2018 field work and stated that they all received payment in accordance with the negotiated compensation value. While SERD have not yet commenced activity on these sites, all AHs have signed documentation noting that they have received compensation and have relinquished any future claims to the land or the crops on the land. **PLN led land acquisition** PLN has advised that as compensation amounts have not been calculated as yet, no compensation has been provided to AHs. Should it use its compulsory acquisition powers it will mean that displacement will occur prior to compensation being provided as the process vests the compensation amount with the district court system for resolution of payment disputes while PLN takes the land. This is consistent with the prevailing regulations within Indonesia.	SERD has ensured that all AHs received compensation payments prior to any economic displacement. For the TL, which is an associated facility it is likely that PLN will work to ensure compliance with the applicable regulations within Indonesia. It is recommended that ongoing consultation be undertaken with PLN to determine any cases of land acquisition which have resulted in expropriation.	Low
12	Monitor and assess resettlement outcomes, their impacts on the standards of living of displaced persons.	**SERD led land acquisition** During the socio-economic baseline survey undertaken in October 2016, SERD sought feedback from all participants to feed into livelihood restoration and community development programmes. This information guided the development of the programmes which have since been integrated into the ISDP. As evidenced by the stakeholder engagement log, SERD has undertaken continual engagement with affected communities in implementing the ISDP (which commenced in	To enable effective monitoring, tracking and reporting on these programmes, a stand-alone socio-economic impact and ISDP monitoring and evaluation report is to be provided twice annually (June and December) and integrate the following:	Low

No.	Policy principles	Project setting/background	Compliance review	Risk ranking
		February 2016). The monitoring process SERD have in place was able to evaluate the 2016 livelihood restoration programme and identify changes necessary to ensure a greater engagement with AHs. The monitoring does not cover the most recent implementation of training programmes in December 2017. SERD has stated that it intends to develop and submit its monitoring reports on a semester basis. **PLN led land acquisition** Resettlement has not yet occurred, however as livelihood restoration support is not being provided then it is unlikely that such monitoring will be undertaken by PLN.	• the performance of the ISDP and impacts to participant's livelihoods • Monitoring to be differentiated based on ISDP participants according to their status as affected, non-affected, and vulnerable people. • Monitoring methods to engage better directly with affected people. • Tracking and reporting on the participation of affected people within the Project workforce, as sub-contractors and as service providers As an action item SERD must incorporate AHs from the Protection Forest into the ISDP and its monitoring programmes.	

Source: Mott MacDonald

4 Action plan

4.1 Overview

The findings of the compliance review have been used to identify required actions to achieve compliance with the reference framework. Mott MacDonald understand that each set of guidelines has different requirements and terminology relating to the provisions of action plans such as Equator Principles Action Plan (EPAP) for the Equator Principles, an Environmental and Social Action Plan (ESAP) for the IFC Performance Standards and a Corrective Action Plan (CAP) for the ADB SPS.

This ESDD report presents an overarching Project review that takes account of the full reference framework. In order to produce a readily management plan that clearly outlines all actions required to achieve compliance with all Lenders reuqirements, a Project ESAP has been developed consolidated the EPAP, ESAP and CAP into a single document. This is presented in Section 6.2.

4.2 Environmental and social action plan

This section presents the Project ESAP. Only material compliance issues that have been assigned a risk rank of either medium or high have been carried forward and translated into actions with the ESAP. Any actions given a risk ranking of low are still to be noted and addressed if required, however due to the risk ranking methodology adopted these matters are generally considered to be managed within the existing management framework adopted by SERD and therfore inclusion as ESAP items is not warranted.

This ESAP is based on our understanding of the Project documentation provided, Project status at the time of writing and requirements of the Lenders moving forward. The ESAP must be reviewed and amended in discussions between the Lenders and the Sponsor to ensure that all parties are aware of the obligations imposed by the ESAP and accept the obligations herein. Any changes to the Project description or any of the documentation provided will require the ESAP to be reviewed and amended if considered necessary. The implementation of the ESAP is the responsibility of the Sponsor, however they may enlist the support of various specialists to discharge the action or formally transfer obligations to an EPC or drilling contractor.

The ESAP contained within Table 15 sets out:

- The proposed measures or actions based on findings of our review and recommendations to achieve compliance with the reference framework
- The specific guideline for which each action is designed to achieve compliance with
- Recommended responsibility for implementing the action
- The deliverable or key performance indicator (KPI) that demonstrates the action has been completed
- Timeline to resolve the action, usually referenceing financial close, commencement of construction or operation
- Estimated budget to achieve the deliverable or KPI, stated as a range or estimated limit.

The ESAP as shown in Table 15 below presents the action items and their respective milestones as of the time of this report's writing. It is expected that further updates to the ESAP will be made as the Project progresses. It should be noted that the finalised verison of the

ESAP, to be formally identifed within convenants, is likely to be available only after this curent issue of the ESDD report.

Table 15: Environmental and social action plan (ESAP)

	Measure and / or corrective action	Reference framework	Responsibility	KPI (deliverable / measurement)	Deadline	Estimated budget (USD)[47]
Permitting						
P1	**Ensure all relevant permits are renewed.** SERD should renew the following permits: • borrow and use permit of forest area (IPPKH) • forest management plan	National requirement; JBIC and NEXI guidelines	SERD	Permit register	Prior to construction	-
Assessment and management framework actions						
AM1	**Provide relevant environmental and social assessment of associated facilities.** SERD is to: • request for the environmental and social assessment (relating to the transmission line) from PLN, making it available to the Lenders for review • work together with PLN to positively influence environmental and social outcomes as relating to activities carried out for the transmission line (ie further actions prescribed in following section).	IFC PS; JBIC and NEXI guidelines	SERD	Environmental and social assessment of the transmission line	Prior to construction	-
AM2	**Update and revise the Project-specific ESMS.** The Project ESMS should be updated to include: • inspection regime: – frequency of site inspections – locations to be inspected – aspects considered (eg erosion/landslide risks, water level in mud and water ponds, H2S monitoring) • specific mechanism to deal with unanticipated impacts	IFC PS; ADB SPS	SERD	Revised ESMS	Prior to financial close	<$5,000
AM3	**Update and revise the Project-specific ESMP.** The Project ESMP should be updated to include: • the required monitoring frequency and methods to monitor ongoing compliance with the H_2S emission standard • additional internationally recognised dust management measures	IFC PS; IFC EHS guidelines	SERD	Revised ESMP	Prior to financial close	<$5,000
AM4	**Ensure EPC and drilling contractor ESMP alignment** SERD is to ensure that the EPC contractor's ESMP are to be aligned with the requirements of the Project's compliance framework.	IFC PS; IFC EHS guidelines	SERD	Contractor's ESMPs	Prior to construction	Within cost of contract
AM5	**Ensure sufficient EHS organisational capacity**	IFC PS	SERD	Contractor's ESMPs	Prior to construction	Within cost of contract

[47] Where responsibility lies with a third party, such as SERD's appointed consultant PT Greencap, estimated budgets have been provided but ultimately such costs are for the third party to advise SERD.

	Measure and / or corrective action	Reference framework	Responsibility	KPI (deliverable / measurement)	Deadline	Estimated budget (USD)[47]
	SERD should illustrate through an updated organogram that sufficient on-site EHS capacity (both internally within SERD and for contractors) will be implemented.					
AM6	**Update and revise the Project-specific decommissioning plan.** The decommissioning ESMP which is to be updated to include additional measures from the IFC EHS Guidelines.	IFC PS; IFC EHS guidelines	SERD	Revised decommissioning plan	At least six months prior to decommission-ing	<$5,000
AM7	**Produce and disclose the NTS for the Project.** An NTS should be produced in Bahasa Indonesia and disclosed to affected communities prior to construction,	IFC PS; JBIC and NEXI guidelines	SERD	NTS, and it's disclosure on public domain	Prior to financial close	<$5,000
AM8	**Improve grievance mechanism to secure best practice.** It is recommended that SERD: • develop cards to provide to community members which details key SERD contact details to lodge grievances with • ensure that all grievances from the community are entered into the grievance log	IFC PS	SERD	• Contact cards • On-going update of grievance log	• Prior to financial close, • Throughout Project	<$5,000
AM9	**Update and revise the SEP.** The SEP is to be revised to: • describe appropriate outreach methods to make reporting available to affected people (including vulnerable people and womens groups) • state a specific reporting frequency to the • set a Project milestone which will lead to reformation of the Forum Desa (eg Final Investment Decision) • expand the definition of vulnerable people to include residents of villages and hamlets within the Project area	IFC PS	SERD	Revised SEP	Prior to financial close	<$5,000
AM10	**Revise and update provisions within relevant EPC contractor's labour management plans.** SERD had included provisions with the EPC contract for a Bridging Documents to be developed. These Bridging Documents should include provisions requiring: • implementation of a labour grievance mechanism consistent with IFC PS2 • compliance requirements to be passed down the labour supply chain to safeguard all workers on the Project • procedures or contractual measures to monitor and manage the risks of child and forced labour throughout the local supply chain	IFC PS	SERD	Revised SEP	Prior to EPC appointment	<$5,000
AM11	**Revise and update the ESIA.** The following update should be made to the ESIA: • section 9 of the ESIA should be updated to describe how stakeholder feedback had been integrated into the Project decision-making • compliance of air quality standards during production testing will be required to be assessed in the dispersion modelling. However, further modelling is not required, if compliance can be demonstrated by SERD providing the emissions parameters of the atmospheric flash tank (ie	IFC PS; IFC EHS guidelines; JBIC NEXI guidelines	SERD	• Revised ESIA • Emission parameters of the atmospheric flash tank	Prior to financial close	<$10,000

	Measure and / or corrective action	Reference framework	Responsibility	KPI (deliverable / measurement)	Deadline	Estimated budget (USD)[47]
	emission source during production testing) to illustrate that expected emissions) are lower than the power plant operations. • revised assessment of noise levels as based on mitigations (eg speed, scheduling) to demonstrate possible compliance • revise relevant sections to assess impacts due to influx of workers to the local area, which are associated with potential impacts on health services and exposure of the community to influx diseases					
Labour actions						
L1	**Ensure compliance of HR policies and procedures to the requirements of IFC PS2.** SERD must undertake the following: • require the selected EPC Contractor to provide the HR policies and procedures for review to confirm compliance with PS2 • amend HR policies and procedures to either explicitly prohibit child labour, or to include procedures and measures relating to how any child labour would be carried out in a manner compliant to Indonesia laws and IFC PS2	National requirement; IFC PS	SERD	EPC contractor's HR policies and procedures	Prior to financial close	Within cost of EPC Contract
L2	**Develop a workforce accommodation strategy.** SERD and/or EPC contractor to provide a workforce accommodation strategy which details capacity of onsite accommodation, the numbers of workers who are proposed to be housed in the local community as part of an Influx Management Plan (refer to below)	IFC PS	SERD /Contractors	Workforce accommodation strategy	Within one month of EPC or drilling contractor's NTP	Within cost of EPC Contract
Socioeconomic and cultural heritage actions						
S1	**Develop and implement Influx Management Plan, and Community Safety, Health and Environmental Plan.** The public health baseline presented within the ESIA shows a limited capacity within the local health services, and describes a risk that the Project workforce could lead to increased use of local public services and increase the spread of disease.	IFC PS; JBIC and NEXI guidelines; ADB SPS	SERD / EPC contractor	• Influx Management Plan • Community Safety, Health and Environmental Plan	Within one month of EPC contractor's NTP	<$5,000
S2	**Revisions to Integrated Social Development Plan** The ISDP is to be updated so that it is a concise plan that is focused in a manner that allows it to both address impacts to affected households and distribute Project benefits to the broader community. At a minimum, this is to include: • Beneficiaries must be clearly defined under different components of the ISDP plan to allow for separation of aspects targeted at AHs for livelihood restoration measures and what comprises of general CSR initiatives and distribution of positive project benefits to the broader community. A recommended definition and eligibility is as follows:	IFC PS; JBIC and NEXI guidelines; ADB SPS	SERD	Revised ISDP	Prior to first loan draw-down	<$10,000

	Measure and / or corrective action	Reference framework	Responsibility	KPI (deliverable / measurement)	Deadline	Estimated budget (USD)[47]
	– Priority 1 (P1): those who are members of AHs directly impacted by the Project land acquisition and having above 10% of total productive land acquired (and thus significantly impacted by land acquisition) based on the 2017 SERD Land Procurement Documentation, or are defined as vulnerable AHs regardless of the extent of impacts – Priority 2 (P2): those who are members of AHs directly impacted by the Project land acquisition and having than 10% of total productive land (and thus not significantly impacted by land acquisition) based on the 2017 SERD Land Procurement Documentation, or are defined as vulnerable households residing in the WKPB – Priority 3 (P3): those who are indirectly impacted by the Project (ie residing within the WKPB) • Provide an overview of applicable standard requirements and commitments from SERD • Provide a proposal procedure for requesting a specific ISDP programs • Provide stakeholder engagement and disclosure strategies for ISDP programs based upon the required amendments to the SEP • Role and responsibility description • Providing monitoring, evaluation, and reporting procedures • Provide budgets required to implement the project on a year by year basis • Provide time bound implementation schedule •					
S3	**Revisions to Stakeholder Engagement Plan** The Stakeholder Engagement Plan must be updated to incorporate the following: • Amended definitions of Directly Project Affected People and Indirectly Project Affected People as required within Action S2 • Update engagement methods and strategies for DPAP and IPAP in the ISDP and SEP to ensure that they are targeted for engaging through appropriate mechanisms. This will help to continue maximising the awareness and participation of livelihood restoration programs and other Project-activities under the ISDP • Update the list of Project stakeholders to reflect the fact that additional land acquisition for worker accommodation and for transmission line has been undertaken. • Update the Stakeholder Engagement Log to incorporate: (i) Stakeholder contact and preferred contact method; (ii) Suggestions; (iii) Responsibility for follow-up actions; (iv) Deadlines for follow-up action; and (iv) Confirmation of close-out. • Adopt other communication channels, such as written publications, social media, and phone texting • Revised the grievance log such that it includes the name, contact details, preferred contact method, contact timing and address of the individual logging the grievance This revised SEP and ISDP must be disclosed as part of broader implementation of the SEP during movement to construction phase.	IFC PS; JBIC and NEXI guidelines; ADB SPS	SERD	Revised SEP	Prior to first loan draw-down	<$10,000

	Measure and / or corrective action	Reference framework	Responsibility	KPI (deliverable / measurement)	Deadline	Estimated budget (USD)[47]
S4	**Associated Facility Land Acquisition** For the land acquisition activities for the transmission line within the Protection Forest (both tower pads and right-of-way) SERD is to undertake the following: • Develop a basic socio-economic profile of the 38 AHs within the Protection Forest to determine the magnitude of uncompensated impacts and develop appropriate livelihood restoration measures as part of the ISDP. • As part of the socio-economic survey undertake a basic audit to determine if all affected households have been provided compensation in accordance with the regulations implemented by PLN and the independent valuation • Incorporate AHs from the Protection Forest into the ISDP and its monitoring programmes based upon the assessed level of impacts	IFC PS; JBIC and NEXI guidelines; ADB SPS	SERD	Revised ISDP	After completion of PLN led land acquisition in the Protection Forest (ie receipt of IPPKH)	15,000
S5	**Commitment of ongoing socio-economic monitoring** A stand-alone socio-economic impact and ISDP monitoring and evaluation report is to be provided on twice annually (June and December) and integrated the following: • the performance of the ISDP and impacts to participant's livelihoods • Monitoring to be differentiated based on ISDP participants according to their status as affected, non-affected, and vulnerable people. • Monitoring methods to engage better directly with affected people. • Tracking and reporting on the participation of affected people within the Project workforce, as sub-contractors and as service providers	IFC PS; JBIC and NEXI guidelines; ADB SPS	SERD	Monitoring report	Twice annually from the time of Financial Close	<5,000
Environmental actions						
E1	**Use 2017 air and noise monitoring as baseline for monitoring** Additional baseline monitoring (ie 24-hour H_2S and 48-hour noise) was reportedly undertaken between 30 October and 4 November 2017 to supplement the data collected in July 2016. Future iterations of regular monitoring report should be use these results as the baseline for compliance monitoring.	IFC PS; IFC EHS Guidelines; JBIC and NEXI guidelines	SERD	Air quality/noise monitoring data	Prior to construction	-
E2	**Manage emergency preparedness and response.** SERD is to: • update the Project specific information within the ERP as details becomes available • document the on-going ERP socialisation efforts, as Project progress to construction • coordinate with the EPC contractor for them to adopt SERD procedures, and/or align their plans with the existing documentations • identify elements where the local community needs to be involved and disclose this appropriately In terms of addressing emergency preparedness and response with regard to H_2S (associated with well testing and well blow-out), monitoring plans for the construction and operation phase and the EPRP should be improved through the inclusion of more frequent monitoring and more details on the	IFC PS ; IFC EHS Guidelines	SERD/EPC contractor	• ERP (EPRP) • Socialisation records	Prior to drilling	Within cost of EPC Contract

	Measure and / or corrective action	Reference framework	Responsibility	KPI (deliverable / measurement)	Deadline	Estimated budget (USD)[47]
	monitoring methods, locations, and alert levels, as well as communication channels with local communities.					
E3	**Monitoring of compliance status related water abstraction.** SERD need to ensure strict compliance by the EPC contractor to the renewed SIPA permit, as well as ensure water intake source for drilling is only abstracted from the intake at the main Cawang Tengah River.	National requirement; IFC PS; ADB SPS	SERD/EPC contractor	• Water intake records • Intake location	Throughout construction	-
E4	**Plan and implement measures to control erosion and sedimentation.** It is recommended that SERD: • revise the revegetation plan with clear responsibility and timelines • align the revegetation plan with on-site restoration possibilities described in the BAP (including reviewing use of bamboo species) The EPC contractor will need to: • provides site specific erosion and sedimentation engineering plans • integrate and provide measures to minimise erosion and sedimentation impacts of the reinjection pipeline (to well pad B).	IFC PS; IFC EHS guideline; ADB SPS	SERD/EPC contractor	• Revised revegetation plan • Site-specific erosion and sedimentation control plans, in particular for reinjection pipeline to well pad B	Prior to earthworks commencment	Within cost of EPC Contract
E5	**Plan and implement measures to mitigate runoff or effluent from the concrete batching plant.** A wastewater management plan specific to the concrete batching plant area is to be produced and implemented.	IFC PS; IFC EHS guideline; ADB SPS	EPC contractor	Wastewater management plan	Prior to construction of power plant	Within cost of EPC Contract
E6	**Monitor and prevent spills and leakages.** An inspection regime for components with contamination risk (especially pumping station fuel tanks) is to be established and maintained for the construction phase.	IFC PS; IFC EHS guideline	EPC contractor	Spill and leakage inspection checklist	Prior to construction	Within cost of EPC Contract
E7	**Manage and monitor noise exceedances** In order to mitigate and monitor the potential noise exceedance during construction mobilisation, SERD will be required to: • socialise mobilisation plan to affected villages • conduct noise monitoring during night time mobilisation • amend delivery scheduling as appropriate, taking in to account of grievances and/or monitored values	IFC PS; IFC EHS guideline; JBIC and NEXI guidelines; ADB SPS	SERD	• Socialisation records • Noise monitoring plan (and records)	Prior to construction mobilisation	<$5,000
Biodiversity actions						
B1	**Assess feasibility of biodiversity offsetting actions.** It is currently not clearly demonstrated that there will be no significant adverse impacts on Natural/Critical Habitat. It is evident that the permanent loss of forest habitat and the impacts on Critical Habitat trigger species will require biodiversity offsetting measures to ensure no net-loss/net gain is achieved. A feasibility assessment is therefore required to determine if this is achievable both in terms of its implementation and whether it is possible to deliver no net-loss/net gain for within a reasonable timeframe.	IFC PS; JBIC and NEXI guidelines; ADB SPS	SERD	Feasibility report (on offsetting measures)	Prior to financial close	<$20,000

	Measure and / or corrective action	Reference framework	Responsibility	KPI (deliverable / measurement)	Deadline	Estimated budget (USD)[47]
	Action partially complete. A BOS has been developed; however, agreement on the final option is required and the preparation of the BMOP to demonstrate how no net-loss/net gain will be achieved.					
B2	**Biodiversity Offset Strategy and Biodiversity Offset Management Plan.** Final consultations and agreement should be made to the preferred biodiversity offset option. A draft BOMP should be prepared which clearly outlines how no net-loss/net gain will be achieved.	IFC PS, BBOP	SERD	Revised BOS with agreed final strategy. First draft BOMP.	Prior to financial close	<$20,000

Source: Mott MacDonald

Appendices

A. Permitting status

A permitting matrix (as of November 2017) has been developed for the Project and has been made available to Mott MacDonald for our review. Information contained within this matrix and other information on permits provided by SERD is summarised in Table B.1 below, which presents an overview of the current status of licenses and permits for the Project.

Table B.1: Permitting register

No.	Document Number	Subject	Issued by	Date of Issue	Valid From	Valid To	Status
1	2953K/30/MEM/2015	Geothermal License (IPB/ Ijin Panas Bumi PT Supreme Energy Rantau Dedap di Wilayah Kerja Rantau Dedap, Kabupaten Muara Enim, Kabupaten Lahat, Kota Pagar Alam, Provinsi Sumatera Selatan)	Minister of ESDM	19/05/2015	29/12/2010	28/12/2045	CLOSED
2	151/Menlhk/Setjen/PLA.4/3/2017	Environmental Feasibility (Kelayakan Lingkungan Hidup)	AMDAL Commission	15/03/2017	15/03/2017	28/12/2045	CLOSED
3	152/Menlhk/Setjen/PLA.4/3/2017	Environmental Permit (Ijin Lingkungan)	Ministry of Environment and Forestry	15/03/2017	15/03/2017	28/12/2045	CLOSED
4	08.Ket.160.WKTPB/DEP/2015	Technical Head of Geothermal (Kepala Teknis Panas Bumi (KTPB)	Directorate General of New Renewable Energy and Energy Conservation - Minister of ESDM	24/07/2015	24/07/2015	28/12/2045	CLOSED
5	293 TAHUN 2014	Environmental License (Izin Lingkungan atas Rencana Kegiatan Tambahan Eksplorasi Pengusahaan Panas Bumi Di Wilayah Kota Pagar Alam)	Mayor of Pagar Alam	19/08/2014	19/08/2014	28/12/2045	CLOSED
6	1.026135	Customs Registration Number or Nomor Induk Kepabeanan	Directorate General of Customs and Excise - Minister of Finance	31/01/2013	31/01/2013	31/12/2030	CLOSED
7	01.09.01224-P	Producer Importer - Iron/Steel or Importir Produsen Besi atau Baja	Directorate General of Trade - Ministry of Trade	22/03/2013	22/03/2013	31/12/2030	CLOSED
8	503.3/452/BPPT&PMD/2012	Principle License of Access Road Improvement	Regent of Lahat	20/06/2012	20/06/2012	06/06/2030	CLOSED
9	112/KPTS/Dispertamben/2016	Power Plant's Operating License (Izin Operasi Pembangkit Listrik)	Regional Government of South Sumatera	24/08/2016	24/08/2016	23/08/2021	CLOSED
10	JJ131725	BPJS Employment Membership (Kepesertaan BPJS Ketenagakerjaan)	BPJS	01/08/2011	01/08/2011	31/12/2020	CLOSED
11	KEP-1033/WP.04/2011	Minister of Finance Decision on the English and USD Bookkeeping (Keputusan Menteri Keuangan Izin Menyelenggarakan Pembukuan dengan Menggunakan Bahasa Inggris dan Satuan Mata Uang Amerika Serikat)	Directorate General of Tax - Ministry of Finance	21/09/2011	01/01/2012	31/12/2019	CLOSED

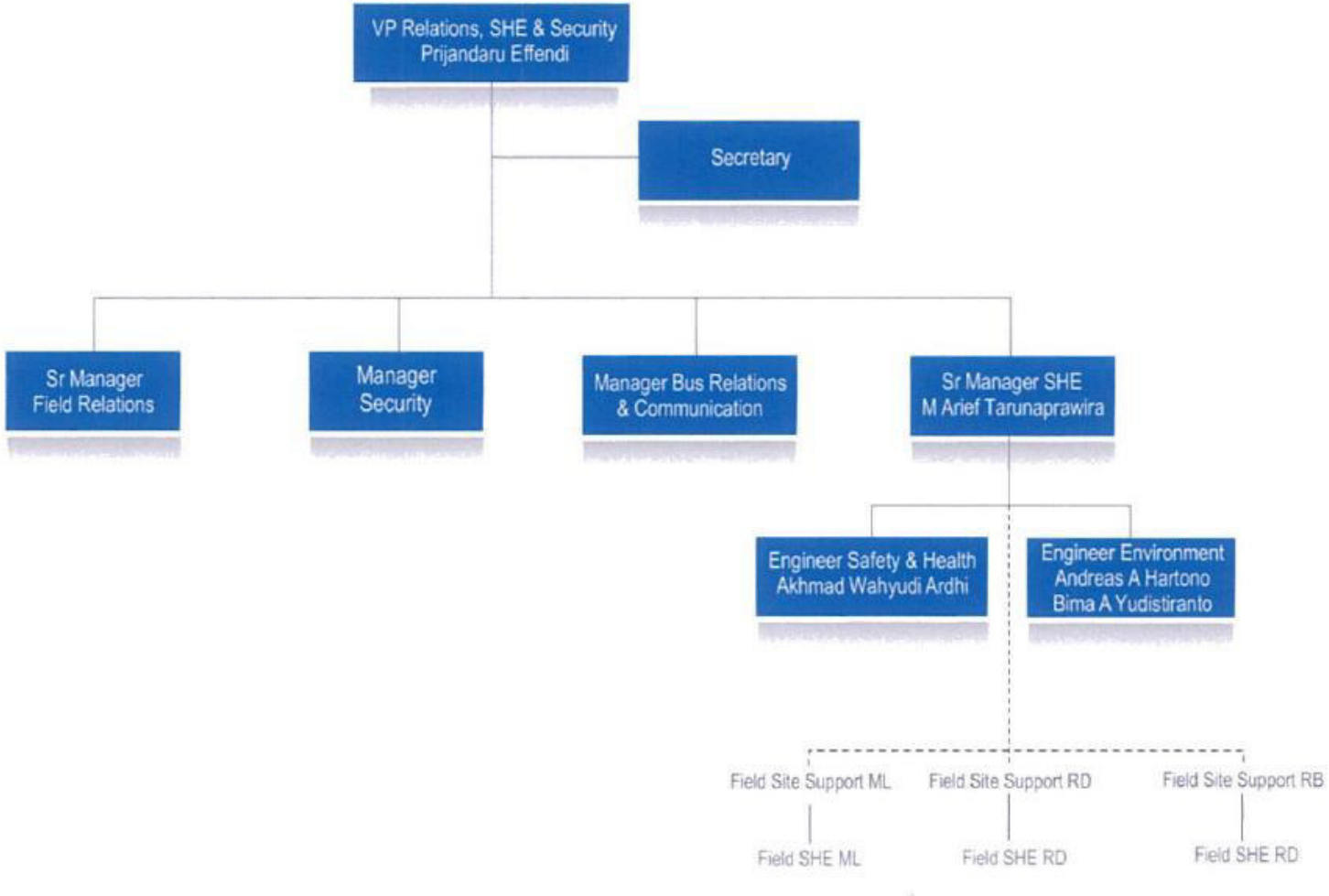
No.	Document Number	Subject	Issued by	Date of Issue	Valid From	Valid To	Status
12	941/KPTS/BLH/2014	PT SERD TPS Waste B3 (Other Waste)	Regent of Muara Enim	17/11/2014	17/11/2014	17/11/2019	CLOSED
13	NPWP: 02.742.114.8-012.000	Taxpayer Identification Number or Nomor Pokok Wajib Pajak (NPWP)	Directorate General of Tax - Ministry of Finance	07/08/2008	07/08/2008	06/08/2019	CLOSED
14	S-588KT/WPJ.30/KP.03030/2016	Registered Notification Letter (Surat Keterangan Terdaftar)	Directorate General of Tax - Ministry of Finance	28/03/2016	28/03/2016	06/08/2019	CLOSED
15	016/KPTS/DISPERTAMBEN/2014	Liquid Fuel Storage Permit	Directorate General of New Renewable Energy and Energy Conservation - Minister of ESDM	28/05/2014	28/05/2014	27/05/2019	CLOSED
16	TDP No. 09.03.1.35.60476	TDP	Ministry of Trade	17/04/2014	17/04/2014	17/04/2019	CLOSED
17	090500106-D	Importer Identification Number for Producer (Angka Pengenal Impor - Produsen)	Directorate General of Trade - Ministry of Trade	03/06/2017	03/06/2017	02/06/2022	CLOSED
18	Sertifikat HGB No.00003 tahun 2017	HGB area of 21,484 m2	Lahat Land Office	03/10/2017	03/10/2017	03/10/2037	CLOSED
19	Sertifikat HGB No.00001 tahun 2017	HGB area of 7,150 m2	Lahat Land Office	23/08/2017	23/08/2017	22/08/2037	CLOSED
20	Sertifikat HGB No.00002 tahun 2017	HGB area of 7,772 m2	Lahat Land Office	23/08/2017	23/08/2017	22/08/2037	CLOSED
21	Sertifikat HGB No.00001 tahun 2017	HGB area of 874 m2	Lahat Land Office	23/08/2017	23/08/2017	22/08/2037	CLOSED
22	27/1/IPPKH/PMA/2017	Permit for Use of Forest Areas for Geothermal Exploitation Activities (Izin Pinjam Pakai Kawasan Hutan Untuk Kegiatan Eksploitasi Panas Bumi dan Sarana Penunjangnya Atas Nama PT Supreme Energy Rantau Dedap Pada Kawasan Hutan Lindung, Di Kabupaten Muara Enim, Kabupaten Lahat dan Kota Pagar Alam, Provinsi Sumatera Selatan Seluas 115 Ha)	Minister of Environment and Forestry	22/09/2017	22/09/2017	28/12/2045	CLOSED
23	01710123-000SU/2620142019	Radio Trungking System (Izin Stasiun Radio)	Communication and Information RI Ministry	19/03/2017	19/03/2017	18/03/2018	CLOSED
24	PRINCIPAL LICENSE No. 3947/1/IP-PB/PMA/2017	Principal License (Izin Prinsip)	Investment Coordination Board	27/10/2017	27/10/2017	28/12/2045	CLOSED

No.	Document Number	Subject	Issued by	Date of Issue	Valid From	Valid To	Status
25	70/27.1BU.1/31.74.07.1001/-071.562/e/2017	Certificate of Company's Domicile (Surat Keterangan Domisili Usaha-SKDP)	Regional Investment Coordination Board	24/01/2017	24/01/2017	30/11/2018	CLOSED
26	1/1/IUPTL-S/PMA/2017	Extension of Electric Power Supply Business License (Perpanjangan Ijin Usaha Penyediaan Tenaga Listrik Sementara PT SERD)	Director General of Electricity	10/01/2017	10/01/2017	10/01/2021	CLOSED
27	206/DPMPTSP.V/V/2017	Permit for Surface Water Utilization (Izin Pengambilan dan Pemanfaatan Air Permukaan Kepada PT Supreme Energy Rantau Dedap di Kabupaten Muara Enim)	Regional Investment Coordination Board	17/05/2017	17/05/2017	16/05/2019	CLOSED
28	281 K/30/MEM/2017	Second Extension of Exploration Period (Perpanjangan Kesatu Jangka Waktu Eksplorasi PT SERD di WKP Rantau Dedap)	Minister of ESDM	25/01/2017	25/01/2017	28/12/2017	CLOSED
29	15 Tahun 2015	Terms of Reference of Environmental Impact Assessment (KA-ANDAL)	AMDAL Commission	22/04/2015	22/04/2015	22/04/2018	CLOSED
30	18/16/DPG-DKSP/Srt/B	Utilization of Rupiah for Geothermal (Pengecualian Penggunaan Mata Uang Rupiah Untuk Panas Bumi)	Bank of Indonesia	27/12/2016	27/12/2016	23/02/2026	CLOSED
31	17.Ket/60/KTPBS/DEP/2017	Technical Head of Geothermal (Kepala Teknis Panas Bumi -KTPB Frank T)	Directorate General of New Renewable Energy and Energy Conservation - Minister of ESDM	24/08/2017	24/08/2017	23/01/2018	OPEN
32	07.Ket.60/KTPB/DEP/2015	Technical Head of Geothermal (Kepala Teknis Panas Bumi -KTPB)	Directorate General of New Renewable Energy and Energy Conservation - Minister of ESDM		14/07/2015	14/07/2045	CLOSED
33	KEP.21670/PPTK/PTA/2016	Expatriate Placement Plan (Rencana Penempatan Tenaga Kerja Asing)	Ministry of Manpower	22/09/2016	30/11/2016	30/11/2017	OPEN

Source: SERD, November 2017

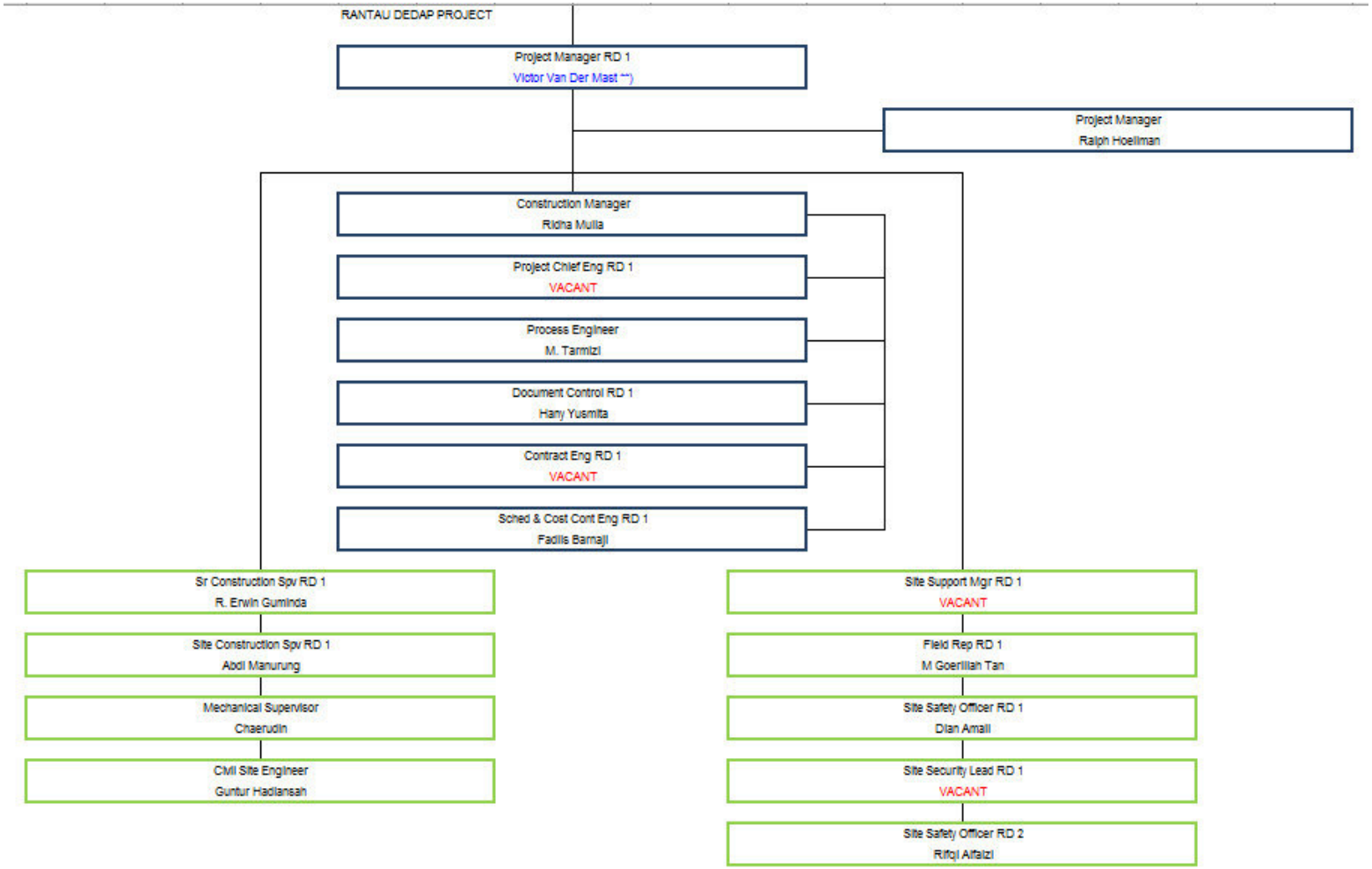
B. Organisational chart

Figure B.1: Organogram of Supreme Energy SHE in Jakarta



Source: SERD, as of January 2017

Figure B.2: Organogram of SERD at Rantau Dedap site



Source: SERD, as of January, 2017

C. Land acquisition overview

C.1 Overview

Land acquisition for the Project has been defined as being undertaken in three distinct phases, these are:

- SERD led land acquisition between 2011 and 2014 to facilitate the development of infrastructure required for the exploration phase
- SERD led land acquisition between 2014 and 2017 which included a series of additional minor
- PLN led land acquisition for the 39km transmission line. As note within Chapter Two, this is defined as an Associated Facility

The precise nature of each of these phases is described below.

C.2 2011 to 2014 SERD led land acquisition

The June 2014 SCAR included a comprehensive analysis of the land acquisition activities undertaken by SERD up until April 2014. This document (included as Appendix C and previously disclosed on the ADB website) assessed SR2 compliance for all acquisition activities undertaken between 2011 and January 2014. This phase of land acquisition was primarily to facilitate the exploration phase and included 19.4ha of privately held land and 89.1ha of Protection Forest Land (for a total of 108.5ha) and impacted a total of 153 households. None of these households were to be physically displaced, with all impacts being related to economic displacement only. The 2014 SCAR provided the conclusion that with the exception of minor matters to be resolved through a Corrective Measures and Action Plan that all land acquisition has occurred in a manner consistent with IFC PS5 and ADB SR2.

The land acquisition process for the Protection Forest Area also included attaining an initial Forestry Permit (known as an Izin Pinjam Pakai Kawasan Hutan – IPPKH) in accordance with Presidential Regulations 42/2010, 61/2012 and 105/2015 in relation to the utilisation of Forestry Areas and granting of borrow use permit. This permit (Ref; Forestry Minister Decree No. SK.648/Menhut II/2012) allowed for the utilisation of 91ha, contradictory to the 89.1ha assessed within the 2014 SCAR. SERD was not able to provide sufficient clarity on the location of this additional 1.9ha during the January 2017 site investigations, however as described below, this initial IPPKH has been amended on two separate occasions.

The SCAR confirmed that SERD has undertaken all land acquisition to date as part of a negotiated settlement process. Where negotiated settlements were not able to be achieved, SERD identified alternatives within the project design. There were no legal disputes or expropriation, and SERD has noted that there have been none arising since 2014 related to this phase of the land acquisition.

C.3 2014 to 2017 SERD led land acquisition

During the initial phase of this ESDD, information was presented (including within the ESIA for Phase II) that stated no additional land acquisition had been undertaken since January 2014. However, data inconsistencies were uncovered which indicated that:

- A total of 124.5ha of land had been acquired as opposed to 108.5ha covered within the 2014 SCAR

- 9.5ha of private land had been acquired, as opposed to 19.4ha covered within the 2014 SCAR
- 115ha of Protection Forest Land had been acquired, as opposed to 89.1ha within the 2014 SCAR

SERD noted that the 9.9ha discrepancy for private lands was a function of two matters:

- During re-evaluation of the Protection Forest boundary for a 2015 amendment to the IPPKH (refer below), it was noted that land SERD had acquired as private land (ie compensated using market based mechanisms) actually lay within the Protection Forest.
- Land was acquired however is not being included within the Phase II Project footprint. This includes where SERD has to acquire additional land as part of negotiated settlement processes which is does not plan to use for either Phase I or Phase II.

These explanations were sufficient to demonstrate that SERD had not acquired any land occupied by private citizens (either private land or Forestry Land) and SERD has described to Mott MacDonald where these areas are located.

The additional area of land acquired within the Protection Forest is a function of the Forestry Permit issued by the Ministry of Environment and Forestry (known as an Izin Pinjam Pakai Kawsan Hutan – IPPKH) which confers the right to SERD to clear and utilise land within Protection Forest for the purposes of the Project. Based upon the information reviewed by Mott MacDonald during the audit process, SERD has undertaken the following steps:

- An extension of the original IPPKH was granted on 19 March 2015 (Ref: 1/1/IPPKH-PB/PMA/2015). Within this, SERD relinquished 19ha of land deemed surplus to project requirements (composed primarily of Well Pad A and associated access roads) and acquired an additional area of 10ha to allow for the development of Well Pad I and associated new access roads. The new area was visited during the January 2017 site audit and was observed to be not utilised by any local people for agricultural purposes. This was confirmed during engagement with village leaders who stated that the higher altitude areas of the WKP are considered unsuitable for agriculture and therefore not utilised. Mott MacDonald is satisfied that there were no private citizens affected by the 2015 revisions to the IPPKH
- An additional extension and adjustment of the IPPKH was granted on 22 September 2017 and was based upon the final proposed Phase II project layout. A copy of the approval and associated map in provided within Section C.5. Through this SERD secured final approval for the continued use of the 69.4ha they had disturbed during Phase I (below the total amount approved in 2015) and an additional 45.6ha of land comprising of 28.4ha for the development of Phase II components (including a proposed drilling team accommodation camp adjacent to Well Pad I, a permanent accommodation facility for SERD personnel directly adjacent to the project road, material storage area and well pads N, M, L and X) and a contingency area of 17.2ha. The total area approved within the IPPKH is 115ha. The new areas included within the IPPKH were visited during the January 2018 site visit and while the drilling camp area was observed as not being used for any agricultural or residential purposes, the SERD accommodation camp was observed to be used for coffee growing.
- Within the 28.4ha for the Phase II footprint extension, SERD has identified four private citizens who undertook agricultural activities on the new accommodation camp area. Compensation for both land and crops was provided through a negotiated settlement process, which concluded in December 2017. The area compensation was provided for is approximately 2.61ha.

As a result of the land acquisition process undertaken between 2011 and 2017, SERD now holds an IPPKH for 115ha within the Protection Forest and a 3.5ha HGB certificate for land outside the Protection Forest (copies of each provided within Appendix C.5 and Appendix C.6 respectively). The land acquisition has affected a total of 157 households (affected households - AH), with none of these being physical displaced. While SERD acquired 9.5ha of private land, the HGB certificate only covers 3.5ha as the land was either deemed surplus to project requirements or was land acquisition pertaining to widening of public roads to facilitate access to the Project and for which SERD is legally not able to hold HGB over.

C.4 PLN led land acquisition

C.4.1 Overview

The land acquisition for the TL is being undertaken by PLN. Detailed documentation regarding the process has not been provided by PLN to SERD, however during meetings with officers from the Planning Division and Land Acquisition Division of PLN South Sumatra it was confirmed that an alignment has been selected, land owners identified, measurement survey and inventory undertaken and an independent market valuation process has commenced. Land acquisition covers a 20m wide right of way (ROW) and 116 transmission towers with areas of either 225m2 (ie 15 x 15m) or 400m2 (ie 20 x 20m). Based on information provided to date, the 116 towers are spread across three sub-districts and 14 village administrative areas names not known. A total of 38 of these towers are within the Protection Forest, of which 36 are within SERD's WKP. The remaining 78 are located within private land.

PLN has indicated that no physical displacement is required for the TL Further commentary on the regulatory mechanisms being utilised by PLN are provided below.

C.4.2 Regulatory mechanism

PLN as a state-owned entity is bound by the prevailing legal system within Indonesia to guide the way it will undertake all aspects of the land acquisition for the TL. It is not afforded the same discretion that SERD could implement to achieve a full negotiated settlement based on valuation of land, crops and assets above replacement cost. Based upon document review and outcomes of meetings with PLN, Mott MacDonald understands that the compliance framework that PLN will be implementing is dependent upon the nature of the land type (ie Protection Forest or Private Land) and the TL component (ie tower pad or corridor for lines), and comprises the following:

- Tower pads situated on private land are subject to the provisions of Law Number 2 of 2012 regarding Land Acquisition for Development in the Public Interest (UU 2/2012) and the accompany Presidential Regulation Number 71 of 2014 regarding the Facilitation of Land Acquisition for Projects in the Public Interest (Perpres 71/2014)
- The right of way corridor situated within private land is subject primarily to the provisions of Minister of Energy and Mineral Resource Regulation Number 38 of 2013 regarding Compensation for Land, Building and Plant Located Below Free Space of High Voltage Aerial Network and Extra High-Voltage Aerial Network (Permen 38/2013)
- All land acquisition within the Protection Forest area will be undertaken in accordance with the same legal framework through which SERD has acquired its IPPKH (primarily Presidential Regulations 42/2010, 61/2012 and 105/2015). PLN has noted that while these laws technically prohibit it from providing any forms of compensation to individuals occupying Protection Forest Land, the provisions of Minister of Energy and Mineral Resources Regulation 33 of 2016 regarding the Technical Settlement of Community Owned Land,

Buildings and Plants in Forest Areas to Facilitate Development of Electricity Infrastructure have conferred upon it the rights to provide compensation in certain circumstances.

To date, limited primary data (such as minutes of meetings, topographic surveys, land measurements, crop inventories and any documentation signed by land owners) has been provided to SERD by PLN.

C.5 Final IPPKH permit

BADAN KOORDINASI PENANAMAN MODAL

KEPUTUSAN KEPALA BADAN KOORDINASI PENANAMAN MODAL
NOMOR : 27 / 1 / IPPKH / PMA / 2017

TENTANG

IZIN PINJAM PAKAI KAWASAN HUTAN UNTUK KEGIATAN EKSPLOITASI PANAS BUMI DAN SARANA PENUNJANGNYA ATAS NAMA PT. SUPREME ENERGY RANTAU DEDAP PADA KAWASAN HUTAN LINDUNG, DI KABUPATEN MUARA ENIM, KABUPATEN LAHAT DAN KOTA PAGAR ALAM, PROVINSI SUMATERA SELATAN SELUAS ± 115 (SERATUS LIMA BELAS) HEKTAR

KEPALA BADAN KOORDINASI PENANAMAN MODAL,

Menimbang : a. bahwa Direktur Utama PT. Supreme Energy Rantau Dedap dengan surat Nomor RD-MGT-LTR.002.I.2017 tanggal 6 April 2017, mengajukan permohonan izin pinjam pakai kawasan hutan untuk kegiatan eksploitasi panas bumi dan sarana penunjangnya pada Kawasan Hutan Bukit Jambul Gunung Patah atas nama PT. Supreme Energy Rantau Dedap, di Kabupaten Muara Enim, Kabupaten Lahat dan Kota Pagar Alam, Provinsi Sumatera Selatan seluas ± 115 (seratus lima belas) hektar, dilengkapi dengan persyaratan, antara lain:

1. Izin Panas Pumi sesuai Keputusan Menteri Energi dan Sumber Daya Mineral Nomor 2953K/30/MEM/2015 tanggal 19 Mei 2015, untuk jangka waktu paling lama 35 (tiga puluh lima) tahun sejak tanggal 29 Desember 2010;
2. Rekomendasi Izin Pinjam Pakai Kawasan Hutan sesuai surat Gubernur Sumatera Selatan Nomor 522/3016/I/2016 tanggal 17 Oktober 2016;
3. Izin Lingkungan sesuai Keputusan Menteri Lingkungan Hidup dan Kehutanan Nomor SK.152/Menlhk/Setjen/PLA.4/3/2017 tanggal 15 Maret 2017;
4. Pernyataan kesanggupan memenuhi kewajiban oleh Direktur Utama PT. Supreme Energy Rantau Dedap yang dibuat di hadapan Mustangin, S.H., Notaris di Jakarta, sesuai Akta Nomor 304 tanggal 12 April 2017;
5. Rencana Kerja Penggunaan Kawasan Hutan dan Peta Lokasi yang dimohon;

b. bahwa Direktur Jenderal Planologi Kehutanan dan Tata Lingkungan dengan surat Nomor S.1230/PKTL/REN/PLA.0/8/2017 tanggal 30 Agustus 2017, menyampaikan:

1. PT. Supreme Energy Rantau Dedap telah memperoleh izin pinjam pakai kawasan hutan untuk eksplorasi panas bumi dan sarana penunjangnya pada Kawasan Hutan Lindung di

Kabupaten Muara Enim, Kabupaten Lahat dan Kota Pagar Alam, Provinsi Sumatera Selatan seluas ± 82 (delapan puluh dua) hektar sesuai Keputusan Kepala Badan Koordinasi Penanaman Modal atas nama Menteri Lingkungan Hidup dan Kehutanan Nomor 1/1/IPPKH-PB/PMA/2015 tanggal 19 Maret 2015 untuk jangka waktu sampai dengan tanggal 19 Maret 2017;

2. Permohonan izin pinjam pakai kawasan hutan atas nama PT. Supreme Energy Rantau Dedap telah memenuhi persyaratan administrasi dan teknis sesuai Pasal 14 ayat (2) dan ayat (4) Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.50/Menlhk/Setjen/Kum.1/6/2016 tentang Pedoman Pinjam Pakai Kawasan Hutan;
3. Hasil telaah permohonan izin pinjam pakai kawasan hutan atas nama PT. Supreme Energy Rantau Dedap, di Kabupaten Muara Enim, Kabupaten Lahat dan Kota Pagar Alam, Provinsi Sumatera Selatan seluas ± 115 (seratus lima belas) hektar:
   a) Berdasarkan Peta Kawasan Hutan dan Konservasi Perairan Provinsi Sumatera Selatan Lampiran Keputusan Menteri Lingkungan Hidup dan Kehutanan Nomor SK.454/MenLHK/SETJEN/PLA.2/ 6/2016 tanggal 17 Juni 2016, seluruhnya berada pada Kawasan Hutan Lindung;
   b) Berdasarkan data perkembangan pengukuhan kawasan hutan, tidak terdapat perubahan fungsi kawasan hutan dan tukar menukar kawasan hutan;
   c) Berdasarkan data pemanfaatan hutan dan pengelolaan wilayah kawasan hutan:
      1) Berada pada KPHP Unit XII dan KPHL Unit XIII Provinsi Sumatera Selatan, sesuai Keputusan Menteri Kehutanan Nomor SK.76/Menhut-II/2010 tanggal 10 Februari 2010;
      2) Tidak berada pada IUPHHK-HA/HT/RE/HTR/HKm/ HDesa dan KHDTK;
   d) Berdasarkan data penggunaan kawasan hutan, tidak tumpang tindih dengan persetujuan prinsip penggunaan kawasan hutan maupun izin pinjam pakai kawasan hutan lainnya;
   e) Berdasarkan Peta Indikatif Penundaan Pemberian Izin Baru Pemanfaatan Hutan, Penggunaan Kawasan Hutan dan Perubahan Peruntukan Kawasan Hutan dan Areal Penggunaan Lain (Revisi XI) Lampiran Keputusan Menteri Lingkungan Hidup dan Kehutanan Nomor SK. 6347/MenLHK-PKTL/IPSDH/PLA.1/11/2016 tanggal 21 November 2016, terindikasi berada pada hutan alam primer dan lahan gambut, sesuai Amar KEDUA huruf b Instruksi Presiden Nomor 6 Tahun 2017 tentang Penundaan dan Penyempurnaan Tata Kelola Pemberian Izin Baru Hutan Alam Primer dan Lahan Gambut, panas bumi merupakan kegiatan pembangunan nasional yang

bersifat vital sehingga termasuk yang dikecualikan dalam kebijakan penundaan penerbitan izin baru;

f) Berdasarkan Citra Bing, tutupan lahan areal yang dimohon berupa hutan primer, hutan sekunder, semak belukar, tanah terbuka dan sebagian tidak terindikasi karena tertutup awan;

4. Permohonan izin pinjam pakai kawasan hutan atas nama PT. Supreme Energy Rantau Dedap seluas ± 115 (seratus lima belas) hektar telah memenuhi ketentuan teknis;

c. bahwa berdasarkan Pasal 1 ayat (1) Peraturan Pemerintah Nomor 33 Tahun 2014 tentang Jenis dan Tarif Atas Jenis Penerimaan Negara Bukan Pajak yang Berasal dari Penggunaan Kawasan Hutan untuk Kepentingan Pembangunan di Luar Kegiatan Kehutanan yang Berlaku pada Kementerian Kehutanan, Jenis Penerimaan Negara Bukan Pajak dalam Peraturan Pemerintah ini adalah Penerimaan Negara Bukan Pajak yang berasal dari penggunaan kawasan hutan untuk kepentingan pembangunan di luar kegiatan kehutanan yang luas kawasan hutannya di atas 30% (tiga puluh persen) dari daerah aliran sungai dan/atau provinsi;

d. bahwa berdasarkan Peraturan Pemerintah Nomor 24 Tahun 2010 tentang Penggunaan Kawasan Hutan, sebagaimana telah beberapa kali diubah terakhir dengan Peraturan Pemerintah Nomor 105 Tahun 2015:

1. Pasal 6 ayat (2) huruf b, izin pinjam pakai kawasan hutan pada provinsi yang luas kawasan hutannya di atas 30% (tiga puluh perseratus) dari luas daerah aliran sungai, pulau, dan/atau provinsi, dengan ketentuan penggunaan untuk komersial dikenakan kompensasi membayar Penerimaan Negara Bukan Pajak Penggunaan Kawasan Hutan dan melakukan penanaman dalam rangka rehabilitasi daerah aliran sungai terutama pada kawasan hutan;
2. Pasal 10 ayat (3), dalam hal hasil penilaian menunjukan permohonan memenuhi persyaratan, Menteri menerbitkan izin pinjam pakai kawasan hutan;

e. bahwa berdasarkan pertimbangan sebagaimana dimaksud pada huruf a sampai dengan huruf d, perlu menetapkan Keputusan Kepala Badan Koordinasi Penanaman Modal tentang Izin Pinjam Pakai Kawasan Hutan Untuk Kegiatan Eksploitasi Panas Bumi dan Sarana Penunjangnya atas nama PT. Supreme Energy Rantau Dedap pada Kawasan Hutan Lindung, di Kabupaten Muara Enim, Kabupaten Lahat dan Kota Pagar Alam, Provinsi Sumatera Selatan seluas ± 115 (seratus lima belas) hektar;

Mengingat : 1. Undang-Undang Nomor 41 Tahun 1999 tentang Kehutanan, sebagaimana telah diubah dengan Undang-Undang Nomor 19 Tahun 2004;

2. Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup;

3. Undang-Undang Nomor 18 Tahun 2013 tentang Pencegahan dan Pemberantasan Perusakan Hutan;
4. Undang-Undang Nomor 23 Tahun 2014 tentang Pemerintahan Daerah, sebagaimana telah diubah dengan Undang-Undang Nomor 9 Tahun 2015;
5. Peraturan Pemerintah Nomor 44 Tahun 2004 tentang Perencanaan Kehutanan;
6. Peraturan Pemerintah Nomor 45 Tahun 2004 tentang Perlindungan Hutan, sebagaimana telah diubah dengan Peraturan Pemerintah Nomor 60 Tahun 2009;
7. Peraturan Pemerintah Nomor 6 Tahun 2007 tentang Tata Hutan dan Penyusunan Rencana Pengelolaan Hutan, serta Pemanfaatan Hutan, sebagaimana telah diubah dengan Peraturan Pemerintah Nomor 3 Tahun 2008;
8. Peraturan Pemerintah Nomor 76 Tahun 2008 tentang Rehabilitasi dan Reklamasi Hutan;
9. Peraturan Pemerintah Nomor 15 Tahun 2010 tentang Penyelenggaraan Penataan Ruang;
10. Peraturan Pemerintah Nomor 24 Tahun 2010 tentang Penggunaan Kawasan Hutan, sebagaimana telah beberapa kali diubah terakhir dengan Peraturan Pemerintah Nomor 105 Tahun 2015;
11. Peraturan Pemerintah Nomor 27 Tahun 2012 tentang Izin Lingkungan;
12. Peraturan Pemerintah Nomor 33 Tahun 2014 tentang Jenis dan Tarif Atas Jenis Penerimaan Negara Bukan Pajak yang Berasal dari Penggunaan Kawasan Hutan untuk Kepentingan Pembangunan di Luar Kegiatan Kehutanan yang Berlaku Pada Kementerian Kehutanan;
13. Peraturan Presiden Nomor 97 Tahun 2014 tentang Penyelenggaraan Pelayanan Terpadu Satu Pintu;
14. Peraturan Presiden Nomor 7 Tahun 2015 tentang Organisasi Kementerian Negara;
15. Peraturan Presiden Nomor 16 Tahun 2015 tentang Kementerian Lingkungan Hidup dan Kehutanan;
16. Keputusan Presiden Nomor 121/P Tahun 2014 tentang Pembentukan Kementerian dan Pengangkatan Menteri Kabinet Kerja Tahun 2014-2019, sebagaimana telah beberapa kali diubah terakhir dengan Keputusan Presiden Nomor 115/P Tahun 2016;
17. Instruksi Presiden Nomor 6 Tahun 2017 tentang Penundaan dan Penyempurnaan Tata Kelola Pemberian Izin Baru Hutan Alam Primer dan Lahan Gambut;
18. Peraturan Menteri Kehutanan Nomor P.56/Menhut-II/2008 tentang Tata Cara Penentuan Luas Areal Terganggu dan Areal Reklamasi dan Revegetasi untuk Perhitungan Penerimaan Negara Bukan Pajak Penggunaan Kawasan Hutan, sebagaimana telah diubah dengan Peraturan Menteri Kehutanan Nomor P.84/Menhut-II/2014;
19. Peraturan Menteri Kehutanan Nomor P.60/Menhut-II/2009 tentang Pedoman Penilaian Keberhasilan Reklamasi Hutan;

20. Peraturan Menteri Keuangan Nomor 91/KMK.02/2009 tentang Tata Cara Pengenaan, Pemungutan dan Penyetoran Penerimaan Negara Bukan Pajak yang Berasal dari Penggunaan Kawasan Hutan untuk Kepentingan Pembangunan di Luar Kegiatan Kehutanan;
21. Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.97/Menhut-II/2014 tentang Pendelegasian Wewenang Pemberian Perizinan dan Non Perizinan di Bidang Lingkungan Hidup dan Kehutanan Dalam Rangka Pelaksanaan Pelayanan Terpadu Satu Pintu Kepada Kepala Badan Koordinasi Penanaman Modal, sebagaimana telah diubah dengan Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.1/Menhut-II/2015;
22. Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.7/MenLHK-II/2015 tentang Petunjuk Teknis Pemberian Perizinan dan Non Perizinan di Bidang Lingkungan Hidup dan Kehutanan Dalam Penyelenggaraan Pelayanan Terpadu Satu Pintu;
23. Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.18/MenLHK-II/2015 tentang Organisasi dan Tata Kerja Kementerian Lingkungan Hidup dan Kehutanan;
24. Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.62/Menlhk-Setjen/2015 tentang Izin Pemanfaatan Kayu;
25. Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.29/Menlhk/Setjen/PHPL.3/2/2016 tentang Pembatalan Pengenaan, Pemungutan dan Penyetoran Penggantian Nilai Tegakan;
26. Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.32/Menlhk/Setjen/Kum.1/3/2016 tentang Pengendalian Kebakaran Hutan dan Lahan;
27. Keputusan Menteri Lingkungan Hidup dan Kehutanan Nomor SK.454/MENLHK/SETJEN/PLA.2/6/2016 tentang Perubahan Atas Keputusan Menteri Kehutanan Nomor SK.866/Menhut-II/2014 tanggal 29 September 2014 tentang Kawasan Hutan dan Konservasi Perairan di Provinsi Sumatera Selatan;
28. Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.50/Menlhk/Setjen/Kum.1/6/2016 tentang Pedoman Pinjam Pakai Kawasan Hutan;
29. Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.71/MenLHK/Setjen/HPL.3/8/2016 tentang Tata Cara Pengenaan, Pemungutan, dan Penyetoran Provisi Sumber Daya Hutan, Dana Reboisasi, Ganti Rugi Tegakan, Denda Pelanggaran Eksploitasi Hutan dan Iuran Izin Usaha Pemanfaatan Hutan;
30. Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.89/MenLHK/Setjen/Kum.1/11/2016 tentang Pedoman Penanaman Bagi Pemegang Izin Pinjam Pakai Kawasan Hutan Dalam Rangka Rehabilitasi Daerah Aliran Sungai;

31. Keputusan Menteri Lingkungan Hidup dan Kehutanan Nomor SK.351/MENLHK/SETJEN/PLA.1/7/2017 tentang Penetapan Peta Indikatif Penundaan Pemberian Izin Baru Pemanfaatan Hutan, Penggunaan Kawasan Hutan, dan Perubahan Peruntukan Kawasan Hutan dan Areal Penggunaan Lain (Revisi XII);

Memperhatikan: 1. Keputusan Menteri Energi dan Sumber Daya Mineral Nomor 2953K/30/MEM/2015 tanggal 19 Mei 2015, tentang Izin Panas Bumi PT. Supreme Energy Rantau Dedap di Wilayah Kerja Rantau Dedap, Kabupaten Muara Enim, Kabupaten Lahat dan Kota Pagar Alam, Provinsi Sumatera Selatan;
2. Surat Gubernur Sumatera Selatan Nomor 522/3016/I/2016 tanggal 17 Oktober 2016 hal Rekomendasi Izin Pinjam Pakai Kawasan Hutan untuk Kegiatan Eksploitasi Panas Bumi seluas ± 115 (seratus lima belas) hektar atas nama PT. Supreme Energy Rantau Dedap di Wilayah Kabupaten Muara Enim, Kabupaten Lahat dan Kota Pagar Alam, Provinsi Sumatera Selatan;
3. Keputusan Menteri Lingkungan Hidup dan Kehutanan Nomor SK.152/Menlhk/Setjen/PLA.4/3/2017 tanggal 15 Maret 2017 tentang Izin Lingkungan Kegiatan Pengusahaan Panas Bumi untuk PLTP Rantau Dedap 250 MW (dua ratus lima puluh Megawaat), di Kabupaten Muara Enim, Kabupaten Lahat dan Kota Pagar Alam, Provinsi Sumatera Selatan kepada PT. Supreme Energy Rantau Dedap;
4. Pernyataan kesanggupan memenuhi kewajiban oleh Direktur Utama PT. Supreme Energy Rantau Dedap yang dibuat di hadapan Mustangin, S.H., Notaris di Jakarta, sesuai Akta Nomor 304 tanggal 12 April 2017;

MEMUTUSKAN :

Menetapkan : **KEPUTUSAN KEPALA BADAN KOORDINASI PENANAMAN MODAL TENTANG IZIN PINJAM PAKAI KAWASAN HUTAN UNTUK KEGIATAN EKSPLOITASI PANAS BUMI DAN SARANA PENUNJANGNYA ATAS NAMA PT. SUPREME ENERGY RANTAU DEDAP PADA KAWASA HUTAN LINDUNG, DI KABUPATEN MUARA ENIM, KABUPATEN LAHAT DAN KOTA PAGAR ALAM, PROVINSI SUMATERA SELATAN SELUAS ± 115 (SERATUS LIMA BELAS) HEKTAR.**

KESATU : Memberikan izin pinjam pakai kawasan hutan untuk kegiatan eksploitasi panas bumi dan sarana penunjangnya atas nama PT. Supreme Energy Rantau Dedap pada Kawasa Hutan Lindung, di Kabupaten Muara Enim, Kabupaten Lahat dan Kota Pagar Alam, Provinsi Sumatera Selatan seluas ± 115 (seratus lima belas) hektar, sebagaimana tercantum dalam Peta Lampiran yang merupakan bagian tidak terpisahkan dari Keputusan ini.

KEDUA : Pemberian izin pinjam pakai kawasan hutan sebagaimana dimaksud dalam Amar KESATU adalah untuk pelaksanaan

kegiatan eksploitasi panas bumi dan sarana penunjangnya, sehingga kewajiban yang menjadi tanggung jawabnya segera diselesaikan setelah berakhirnya izin, serta arealnya tetap berstatus sebagai kawasan hutan.

KETIGA : PT. Supreme Energy Rantau Dedap, dalam jangka waktu paling lama 1 (satu) tahun setelah terbit izin pinjam pakai kawasan hutan sebagaimana dimaksud dalam Amar KESATU, wajib untuk:

a. menyelesaikan tata batas areal izin pinjam pakai kawasan hutan dengan supervisi Balai Pemantapan Kawasan Hutan Wilayah II Palembang dan disampaikan kepada Direktur Jenderal Planologi Kehutanan dan Tata Lingkungan untuk mendapat penetapan batas areal kerja izin pinjam pakai kawasan hutan, serta tidak dapat diperpanjang;
b. menyampaikan rencana lokasi penanaman dalam rangka rehabilitasi daerah aliran sungai;
c. menyampaikan *baseline* penggunaan kawasan hutan sesuai dengan hasil tata batas bagi izin pinjam pakai kawasan hutan.
d. membuat pernyataan dalam bentuk akta notariil bersedia mengganti biaya investasi pengelolaan hutan kepada pengelola kawasan hutan.

KEEMPAT : Apabila dalam jangka waktu 1 (satu) tahun sejak diterbitkannya Keputusan ini, PT. Supreme Energy Rantau Dedap tidak menyelesaikan kewajiban sebagaimana dimaksud dalam Amar KETIGA, izin pinjam pakai kawasan hutan dinyatakan tidak berlaku.

KELIMA : PT. Supreme Energy Rantau Dedap, berhak:

a. berada, menempati dan mengelola serta melakukan kegiatan-kegiatan yang meliputi eksploitasi panas bumi dan sarana penunjangnya serta melakukan kegiatan-kegiatan lainnya yang berhubungan dengan itu dalam kawasan hutan yang dipinjam pakai;
b. memanfaatkan hasil kegiatan yang dilakukan sehubungan dengan eksploitasi panas bumi dan sarana penunjangnya pada kawasan hutan yang dipinjam pakai;
c. melakukan penebangan pohon dalam rangka pembukaan lahan dengan membayar Provisi Sumber Daya Hutan (PSDH) dan/atau Dana Reboisasi (DR) sesuai dengan ketentuan peraturan perundang-undangan.

KEENAM : PT. Supreme Energy Rantau Dedap, setelah memperoleh penetapan batas areal kerja Izin Pinjam Pakai Kawasan Hutan sebagaimana dimaksud pada Amar KETIGA huruf a, wajib:

a. membuat rencana dan melaksanakan reklamasi dan revegetasi pada kawasan hutan yang sudah tidak dipergunakan tanpa menunggu selesainya jangka waktu izin pinjam pakai kawasan hutan, sesuai dengan ketentuan peraturan perundang-undangan;
b. melakukan penanaman dalam rangka rehabilitasi daerah aliran sungai dan dilaksanakan paling lambat 1 (satu) tahun sebelum berakhirnya izin pinjam pakai kawasan hutan,

dengan rasio 1:1, sesuai dengan ketentuan peraturan perundang-undangan;

c. membayar Penerimaan Negara Bukan Pajak Penggunaan Kawasan Hutan, sesuai dengan ketentuan peraturan perundang-undangan;
d. melaksanakan inventarisasi tegakan sesuai dengan rencana penggunaan kawasan hutan tahunan;
e. membayar PSDH dan DR serta kewajiban keuangan lainnya sesuai dengan ketentuan peraturan perundang-undangan;
f. mengganti biaya investasi pengelolaan hutan kepada pengelola kawasan hutan;
g. melakukan pemeliharaan batas pinjam pakai kawasan hutan;
h. melaksanakan perlindungan hutan sesuai dengan ketentuan peraturan perundang-undangan;
i. menyiapkan Sumberdaya Manusia pengendalian kebakaran hutan dalam Brigade Pengendalian Kebakaran Hutan dan Lahan (Brigdalkarhutla);
j. menempatkan sekurang-kurangnya 1 (satu) Regu Inti Pengendali Kebakaran Hutan;
k. merekrut karyawan pada perusahaan sebagai anggota Regu Pendukung Pengendali Kebakaran Hutan;
l. menyiapkan sarpras untuk menunjang kegiatan Brigdalkarhutla antara lain sarpras pencegahan kebakaran hutan dan sarpras pemadaman kebakaran hutan;
m. melakukan pemberdayaan masyarakat sekitar areal izin pinjam pakai kawasan hutan;
n. melakukan koordinasi dengan Dinas Kehutanan Provinsi Sumatera Selatan;
o. memberikan kemudahan bagi aparat Kementerian Lingkungan Hidup dan Kehutanan baik Pusat maupun Daerah pada saat melakukan *monitoring* dan evaluasi di lapangan; dan
p. membuat laporan secara berkala setiap 6 (enam) bulan sekali kepada Menteri Lingkungan Hidup dan Kehutanan mengenai penggunaan kawasan hutan yang dipinjam pakai, dengan tembusan:
   1. Direktur Jenderal Planologi Kehutanan dan Tata Lingkungan;
   2. Direktur Jenderal Pengendalian Daerah Aliran Sungai dan Hutan Lindung;
   3. Direktur Jenderal Pengelolaan Hutan Produksi Lestari;
   4. Kepala Dinas Kehutanan Provinsi Sumatera Selatan,
   5. Kepala Balai Pemantapan Kawasan Hutan Wilayah II Palembang; dan
   6. Kepala Balai Pengelolaan Daerah Aliran Sungai dan Hutan Lindung Musi, Palembang;

   Laporan memuat :
   1. rencana dan realisasi penggunaan kawasan hutan;
   2. rencana dan realisasi reklamasi dan revegetasi;
   3. pemenuhan kewajiban membayar Penerimaan Negara Bukan Pajak Penggunaan Kawasan Hutan;

4. rencana dan realisasi penanaman dalam wilayah daerah aliran sungai sesuai peraturan perundang-undangan; dan
5. pemenuhan kewajiban lainnya sesuai izin pinjam pakai kawasan hutan.

KETUJUH : Ketentuan untuk melakukan penanaman dalam rangka rehabilitasi Daerah Aliran Sungai (DAS) sebagaimana dimaksud dalam Amar KEENAM huruf b mengacu pada Peraturan Menteri Lingkungan Hidup dan Kehutanan Nomor P.89/MenLHK/Setjen/Kum.1/11/2016.

KEDELAPAN : PT. Supreme Energy Rantau Dedap, dilarang:
a. memindahtangankan izin pinjam pakai kawasan hutan kepada pihak lain atau pengubahan nama perusahaan tanpa persetujuan Menteri Lingkungan Hidup dan Kehutanan;
b. menjaminkan atau mengagunkan areal izin pinjam pakai kawasan hutan kepada pihak lain;
c. melakukan penebangan pohon dalam kawasan hutan dengan radius atau jarak sampai dengan:
   1. 200 (dua ratus) meter dari tepi mata air dan kiri kanan sungai di daerah rawa;
   2. 100 (seratus) meter dari kiri kanan tepi sungai;
   3. 50 (lima puluh) meter dari kiri kanan tepi anak sungai;
d. menggunakan merkuri dalam kegiatan eksploitsi panas bumi.

KESEMBILAN : Apabila terdapat hak-hak pihak ketiga di dalam areal pinjam pakai kawasan hutan, agar segera diselesaikan dengan meminta bimbingan dan fasilitasi ke pemerintah daerah setempat.

KESEPULUH : Izin pinjam pakai kawasan hutan ini dicabut dan pemegang izin dikenakan sanksi sesuai dengan ketentuan peraturan perundang-undangan, apabila pemegang izin melakukan pelanggaran atas ketentuan-ketentuan sebagaimana dimaksud dalam izin, dengan ketentuan:
a. Direktur Jenderal Planologi Kehutanan dan Tata Lingkungan menerbitkan peringatan paling banyak 3 (tiga) kali dengan tenggang waktu masing-masing paling sedikit 30 (tiga puluh) hari kerja sejak diterimanya surat peringatan; dan
b. Dalam hal terbitnya peringatan sebagaimana dimaksud pada huruf a tidak dilaksanakan dan pemegang izin tidak melakukan usaha perbaikan dalam waktu 30 (tiga puluh) hari kerja sejak diterimanya surat peringatan yang ketiga.

KESEBELAS : Izin pinjam pakai kawasan hutan berlaku dan melekat sebagai izin pemanfaatan kayu, serta izin pemasukan dan penggunaan peralatan.

KEDUA BELAS : Penentuan areal terganggu, reklamasi dan revegetasi serta tata cara pengenaan, pemungutan dan penyetoran PNBP Penggunaan Kawasan Hutan berpedoman pada Peraturan Menteri Kehutanan Nomor P.56/Menhut-II/2008 jo. Peraturan Menteri Kehutanan Nomor P.84/Menhut-II/2014 dan Peraturan Menteri Keuangan Nomor 91/KMK.02/2009.

KETIGA BELAS : a. Permohonan perpanjangan dilakukan oleh Pemegang Izin paling lambat 2 (dua) bulan sebelum berakhirnya jangka waktu izin;

b. Untuk perpanjangan izin sebagaimana dimaksud pada huruf a, Instansi Kementerian Lingkungan Hidup dan Kehutanan melakukan evaluasi atas:
   1. Kawasan hutan yang dipinjam pakai masih dipergunakan untuk kegiatan eksploitasi panas bumi dan sarana penunjangnya oleh pemegang izin atau afiliasinya atau oleh pihak yang diperbolehkan berdasarkan ketentuan peraturan perundang-undangan;
   2. Tidak ada pelanggaran yang dilakukan oleh pemegang izin terhadap ketentuan-ketentuan dalam izin;
   3. Telah memenuhi semua kewajiban dalam Keputusan ini.

KEEMPAT BELAS : Keputusan ini mulai berlaku pada tanggal ditetapkan dengan jangka waktu paling lama sampai dengan tanggal 28 Desember 2045, dan berakhir dengan sendirinya apabila tidak diperpanjang.

Ditetapkan di Jakarta
pada tanggal 22 SEP 2017

A.n. MENTERI LINGKUNGAN HIDUP DAN KEHUTANAN REPUBLIK INDONESIA,
KEPALA BADAN KOORDINASI PENANAMAN MODAL,

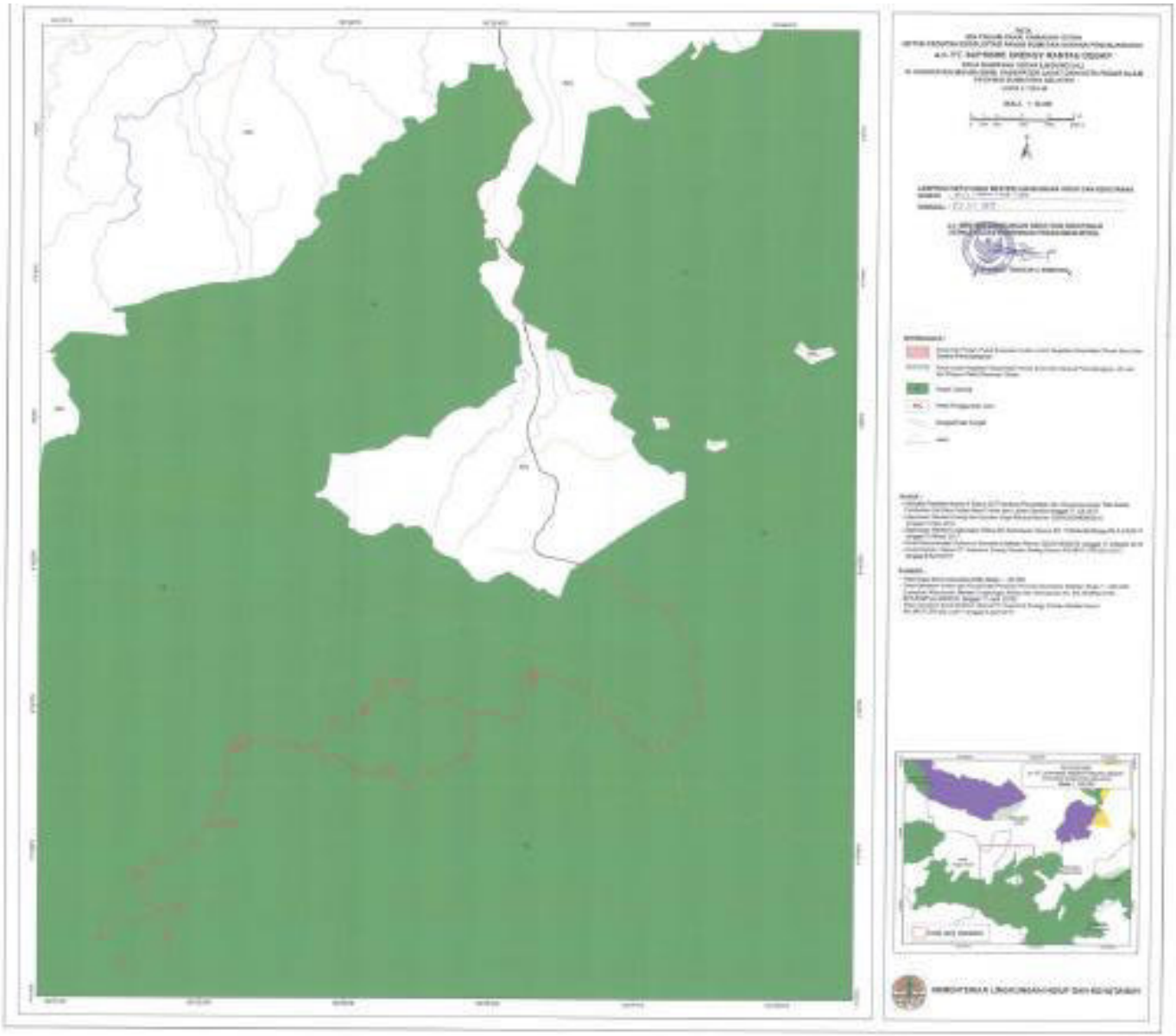
TTD

THOMAS TRIKASIH LEMBONG

Salinan sesuai dengan aslinya
KEPALA BIRO PERATURAN PERUNDANG-UNDANGAN, HUMAS DAN TATA USAHA PIMPINAN

ARIESTA R. PUSPASARI

Salinan Keputusan ini disampaikan kepada Yth.:
1. Menteri Lingkungan Hidup dan Kehutanan;
2. Menteri Energi dan Sumber Daya Mineral;
3. Sekretaris Jenderal Kementerian Lingkungan Hidup dan Kehutanan;
4. Direktur Jenderal Planologi Kehutanan dan Tata Lingkungan;
5. Direktur Jenderal Pengelolaan Hutan Produksi Lestari;
6. Direktur Jenderal Konservasi Sumber Daya Alam Hayati dan Ekosistem;
7. Direktur Jenderal Pengendalian Daerah Aliran Sungai dan Hutan Lindung;
8. Gubernur Sumatera Selatan;
9. Bupati Muara Enim;
10. Bupati Lahat;
11. Walikota Pagar Alam;
12. Kepala Dinas Kehutanan Provinsi Sumatera Selatan;
13. Kepala Balai Pemantapan Kawasan Hutan Wilayah II Palembang;
14. Kepala Balai Pengelolaan Daerah Aliran Sungai dan Hutan Lindung Musi, Palembang;
15. Direktur Utama PT. Supreme Energy Rantau Dedap.



C.6 Final HGB Certificate

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DAFTAR ISIAN 206

BADAN PERTANAHAN NASIONAL REPUBLIK INDONESIA

SERTIPIKAT

(TANDA BUKTI HAK)

KANTOR PERTANAHAN
KABUPATEN / KOTA

LAHAT

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DAFTAR ISIAN 206

BADAN PERTANAHAN NASIONAL REPUBLIK INDONESIA

BPN RI

SERTIPIKAT

HAK : GUNA BANGUNAN No. 3

PROVINSI : SUMATERA SELATAN

KABUPATEN / KOTA : LAHAT

KECAMATAN : KOTA AGUNG

DESA / KELURAHAN : TUNGGUL BUTE

DAFTAR ISIAN 307
No. 784 / 207
DAFTAR ISIAN 208
No. 404 / 207

KANTOR PERTANAHAN
KABUPATEN / KOTA
LAHAT

04 • 05 • 07 • 06 • 3 • 00003

PENDAFTARAN PERTAMA

Halaman

a) HAK : GUNA BANGUNAN

No. 3

Desa / Kel. Tunggul Bute

Tgl. berakhirnya hak 03-10-2037

b) NIB 04.05.07.06.00005

Letak Tanah

c) ASAL HAK

1. Konversi –

2. Pemberian hak

3. Pemecahan / Pemisahan / Penggabungan bidang

d) DASAR PENDAFTARAN

1. Daftar Isian 202

Tgl.

No.

2. Surat Keputusan Kakanwil Prov Sumsel

Tgl. 19 – 09 – 2017

No. 08/HGB/BPN/16/2017

3. Permohonan Pemecahan / Pemisahan / Penggabungan bidang

Tgl.

No.

e) SURAT UKUR

Tgl. 22 – 05 – 2017

No. 04 /Tunggul Bute/2017

Luas 21.484 M² (Dua puluh satu ribu empat ratus delapan puluh empat meter persegi)

f) NAMA PEMEGANG HAK

PT. SUPREME ENERGY RANTAU DEDAP

Tanggal lahir / akta pendirian

Nomor : 2 Tanggal : 01-07-2008

g) PEMBUKUAN

Lahat 0 3 OCT 2017

Kepala Kantor Pertanahan

Kabupaten / Kota Lahat

ttd

Ir. ROMANUS NOOR WIDARTO, MM

NIP 19640227 199103 1 002

h) PENERBITAN SERTIPIKAT

Lahat 0 3 OCT 2017

Kepala Kantor Pertanahan

Kabupaten / Kota Lahat

Ir. ROMANUS NOOR WIDARTO, MM

NIP 19640227 199103 1 002

i) PENUNJUK

BPN RI

BHUMIBHAKTI ADHIGUNA

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DAFTAR ISIAN 207

0 4 • 0 5 • 0 7 • 0 6 • 8 • 0 0 0 0 3

NIB : 04.05.07.06.00005

SURAT UKUR

Nomor : 00004 / Tunggul Bute / 2017

SEBIDANG TANAH TERLETAK DALAM

Provinsi : Sumatera Selatan

Kabupaten / Kota : Lahat

Kecamatan : Kota Agung

Desa /Kelurahan : Tunggul Bute

Peta : Pendaftaran TM3 Nomor Peta Pendaftaran : 48.1-27.127-03-6

Lembar : 27.127-03-6 Kotak : D-F/2-3

Keadaan Tanah : Sebidang Tanah Pekarangan

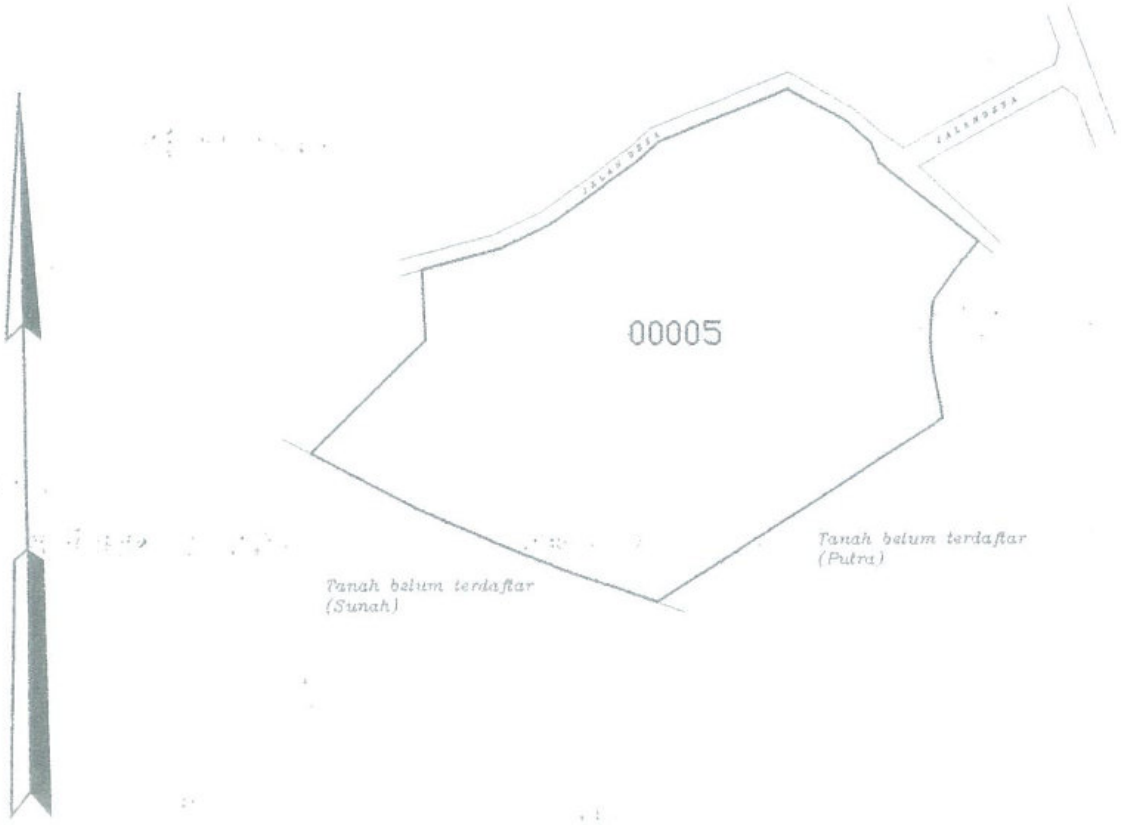
Tanda-tanda batas : Kayu-kayu semua berada dibatas tanah memenuhi PMNA / Ka. BPN No. 3 Tahun 1997

Luas : 21484 M^2 (Dua puluh satu ribu empat ratus delapan puluh empat meter persegi)

Penunjukan dan penetapan batas : Drs. H. MUHAMMAD GOERILLAHTAN bertindak untuk atas nama PT.SUPREME ENERGY RANTAU DEDAP (Pemilik Tanah)

REYINDA VAMELA (Petugas BPN)

SKALA 1 : 2500



PENJELASAN : _____ batas tanah ini

Hal lain - lain :

Daftar Isian 302 tgl. 20 - 04 - 2017 No. 1337 / 2017

Daftar Isian 307 tgl. 22 - 05 - 2017 No. 3057 / 2017

Tanggal Penomoran Surat Ukur

UNTUK SERTIPIKAT

Lahat, 03 OCT 2017

Kepala Kantor Pertanahan
Kabupaten / Kota
Lahat

IR ROMANUS NGOR WIDARTO.MM
NIP 19640227 199103 1 002

Lahat, 22 - 05 - 2017

Kepala Seksi Survei, Pengukuran dan Pemetaan

Kantor Pertanahan
Kabupaten / Kota
Lahat

ttd

EDDY WALUYO, SH
NIP 19590924 198303 1 004

Lihat surat ukur Pemisahan / Penggabungan / Pengganti

Nomor :

Nomor hak :

Dikeluarkan surat ukur		Luas	Nomor hak	Sisa luas
Tanggal	Nomor			

Sisanya diuraikan dalam surat ukur Nomor :

Nomor hak :

Ketentuan P.P. 24 Tahun 1997 yang perlu diperhatikan

Pasal 17

(3) Penempatan tanda-tanda batas, termasuk pemeliharaannya, wajib dilakukan oleh pemegang hak atas tanah yang bersangkutan.

Pasal 32

(1) Sertipikat merupakan surat tanda bukti hak yang berlaku sebagai alat pembuktian yang kuat mengenai data fisik dan data yuridis yang termuat di dalamnya, sepanjang data fisik dan data yuridis tersebut sesuai dengan data yang ada dalam surat ukur dan buku tanah hak yang bersangkutan.

(2) Dalam hal atas suatu bidang tanah sudah diterbitkan sertipikat secara sah atas nama orang atau badan hukum yang memperoleh tanah tersebut dengan itikad baik dan secara nyata menguasainya, maka pihak lain yang merasa mempunyai hak atas tanah itu tidak dapat lagi menuntut pelaksanaan hak tersebut apabila dalam waktu 5 (lima) tahun sejak diterbitkannya sertipikat itu telah tidak mengajukan keberatan secara tertulis kepada pemegang sertipikat dan Kepala Kantor Pertanahan yang bersangkutan ataupun tidak mengajukan gugatan ke Pengadilan mengenai penguasaan tanah atau penerbitan sertipikat tersebut.

Pasal 36

(1) Pemeliharaan data pendaftaran tanah dilakukan apabila terjadi perubahan pada data fisik atau data yuridis obyek pendaftaran tanah yang telah terdaftar.

(2) Pemegang hak yang bersangkutan wajib mendaftarkan perubahan sebagaimana dimaksud pada ayat (1) kepada Kantor Pertanahan.

Pasal 40

(1) Selambat-lambatnya 7 (tujuh) hari kerja sejak tanggal ditandatanganinya akta yang bersangkutan, PPAT wajib menyampaikan akta yang dibuatnya berikut dokumen-dokumen yang bersangkutan kepada Kantor Pertanahan untuk didaftar.

(2) PPAT wajib menyampaikan pemberitahuan tertulis mengenai telah disampaikannya akta sebagaimana dimaksud pada ayat (1) kepada para pihak yang bersangkutan.

Pasal 42

(1) Untuk pendaftaran peralihan hak karena pewarisan mengenai bidang tanah hak yang sudah didaftar dan hak milik atas satuan rumah susun sebagai yang diwajibkan menurut ketentuan sebagaimana dimaksud dalam pasal 36, wajib diserahkan oleh yang menerima hak atas tanah atau hak milik atas satuan rumah susun yang bersangkutan sebagai warisan kepada Kantor Pertanahan, sertipikat hak yang bersangkutan, surat kematian orang yang namanya dicatat sebagai pemegang haknya dan surat tanda bukti sebagai ahli waris.

C.7 Involuntary Resettlement Categorisation Checklist

Table 16: Involuntary Resettlement Categorisation Checklist

Probably Involuntary Resettlement Affects	Yes	No	Not known	Remarks
Involuntary Acquisition of Land				
1.Will there be land acquisition?	X			Acquisition for the majority of the Projects land has been completed between 2012 and 2014. Future land acquisition is to be undertaken through an adjustment to the IPPKH which may impact on agricultural land users. There are also additional land acquisition requirements for the 39km transmission line
2.Is the site for land acquisition known	X			NA – See 1 above
3.Is the ownership status and current usage of land to be acquired known	X			The land acquisition has occurred partly within land privately held, and within Protection Forest which users do not hold formal title for. This has been determined as part of previous investigations The ownership status and usage for future IPPKH adjustment and the transmission line have not yet been determined
4.Will easement be utilised within an existing Right of Way			X	It wasn't for past acquisition. It is likely that a new Right of Way will be established for the Transmission Line
5.Will there be loss of shelter and residential land due to land acquisition		X		There has been no loss of shelter and residential land in any land acquisition to date
6.Will there be loss of agricultural and other productive assets due to land acquisition	X			There was economic displacement – see 1 and 3
7.Will there be loss of crops, trees, and fixed assets due to land acquisition	X			Most land acquisition will impact land that is used for coffee plantations and involve the loss of trees.
8.Will there be loss of businesses or enterprises due to land acquisition		X		There has been no loss of businesses or enterprise in any land acquisition to date
9.Will there be loss of income sources and means of livelihood due to land acquisition	X			There was economic displacement due to lost agricultural land. These impacts are thought to be significant for at least 94 of the 153 households impacted.
Involuntary restrictions on land use or on access to legally designated parks and protected areas				
10.Will people lose access or natural resources, communal facilities, and services		X		The Project was designed and situated to avoid displacement impacts. Aside from the office complex, the Project is not located in proximity to any settlements or natural areas used by people for resources
11.If land use is changed, will it have an adverse impact on social and economic activities	X			There will be livelihood impacts, however these are being addressed through the Integrated Social Development Plan
12.Will access to land and resources owned communally or by the state be restricted		X		There will be some access restriction as parts of the site will be fenced, however these lands were not used for purposes

Probably Involuntary Resettlement Affects	Yes	No	Not known	Remarks
				other than agriculture, or were otherwise natural forest.
Information on Displaced Persons				
Any estimate of the likely number of persons that will be displaced by the Project? **YES** If yes, approximately how many? **153 HH's will be economically displaced by the Project. Based on estimates of household composition provided within the SCAR, the total number of people impacted is in the order of 700**				
Are any of them poor, female heads of households or vulnerable to poverty risks? **YES. The SCAR and socio-economic baseline survey classifies 109 of the displaced households as vulnerable, with 17 of these considered to be particularly vulnerable.**				
Are any displaced persons from indigenous or ethnic minority groups? **YES. Majority are thought to be Semendo, which meet some of the ADB definitions of IPs, however evidence suggests that they are not a minority in the area nor are the considered especially vulnerable.**				

Source: Mott MacDonald 2017

D. Initial Indigenous Peoples Screening

D.1 Overview

As part of the Social Compliance Audit Report (SCAR) prepared in 2014 and disclosed on the ADB website, an analysis of the

- The majority of the affected persons due to land acquisition and resettlement, as well as the general population in the Project area, are Semendo. This particular ethnic group was concluded to be Indigenous Peoples (IP) by ADB as per the criteria in SPS SR3
- The ISDP programmes being implemented in 2014 were effectively addressing the adverse impacts on the affected Semendo communities and the potential benefits to the overall project area, including social upliftment and development of communities
- While Semendo communities have been classed as IP's, the key requirement of an IPP was to integrated into the ISDP and therefore preparation of a separate plan was not required

In the period of April 2014 to March 2017 SERD has defined the Semendo as IP. However, the information presented within the Draft ESIA has concluded that neither the Semendo, or the newly identified Besemah ethnic group, are classed as IP's for the puporses of the IFC PS7 and ADB SR3. A checklist was provided within Section 3.3.1 of the SCAR assessing the characteristics of the Semendo people against the four criteria common to IFC PS7 and ADB SR3. This specifically conlucdes that regardless of a lack of ancestral attachment to lands in the Project area, that they should be classed as IP's. The draft ESIA (dated 22 March 2017) of the Project provides an additional assessment (Table 68) of the IP classification of the Semendo ethnic group, drawing the conclusion that they should not be considered as IP. Table 11 below provides a comparison between the two different positions, and provides Mott MacDonalds comments on these inconsistencies, supplemented by information gathered during the ESDD site visit. Table 12 provides a similar overview of the Besemah ethnic group and concludes that further information based upon consultation relating to ancestral territories and land in the Project area, is required to support the conclusion that they are not IP.

Mott MacDonald considers there to have been insufficient information provided to date by SERD to justify a change in the classification of the Semendo communities from Indigenous to non-Indigenous Peoples. In the absence of a detailed indigenous peoples screening report for the Semendo people, it is strongly recommended that the information presented within the Phase II draft ESIA be amended to remain consistent with the 2014 SCAR and classification of Indigenous People's..

D.2 Initial assessment of January 2017 Indigenous Peoples Screening and Categorisation Outcomes

Table 11 and Table 12 present an assessment of the information relating to the IP classification of the Semendo and Besemah ethnic groups. It is recommended that SERD provide a stand-alone Indigenous Peoples screening report assessing the broader community and affected people, prepared by an appropriately qualified consultant, and submitted to the Lenders for review. This will guide further consideration of the applicability of IFC PS7 and ADB SR3.

It is noted that while the Semendo people have been classed as Indigenous Peoples and the Project categorsed as B, there was no initial requirement imposed by the ADB to prepare a separate Indigenous Peoples Plan (IPP). This was due to the fact that the majority of the affected people, and the majority of the population in the Project area, are Semendo and

therefore preparation of an IPP was not required subject to the ISDP addressing adverse impacts on affected Semendo communities as well as ensuring that Project benefits contribute to social upliftment and development of these communities. The outcomes of the ESIA for Phase II indicate that while the Semendo people are the majority ethnic group within Segamit village, and within other villages across the Project Area there are a number of other ethnic groups (Besemha, Javanese, Sundanese etc) represented. The breakdown is shown in the below table. None of these additional ethnic groups have been identified as IP, however it is indicative that not all impacted people are Semendo (land acquisition occurred across Tunggul Bute and Segamit villages), nor are Semendo the uniformly dominant ethnic group across the Project Area. As noted by SERD, the Besemah people are largely in-migrants to the Project area as they originally come from the areas around Lahat and Pagar Alam. Other ethnicities are also in-migrants, however from other Provinces throughout Indonesia.

Table 17: Ethnicity of the Five Project Affected Villages (Percentage Composition)

No	Village	Besemah	Semendo	Others (Java, Padang, Sunda, Lampung, Bengkulu)
1	Tunggul Bute	>95%		
2	Karang Endah	70%		
3	Lawang Agung	70%		
4	Suka Rame	70%		
5	Segamit		80%	20%
	- Dusun Yayasan		30%	70% Java

Source: Phase II ESIA Table 52 (ECS, 2016)

Based upon the outcomes of the socio-economic surveys undertaken and presented by SERD there is a high level of vulnerability throughout the Project Area which indicates that the Semendo people as a group are no more or less vulnerable than any other.

Table 18: Semendo IP Classification – SCAR and Draft ESIA Comparison

Requirements	SCAR: Conclusions	Draft ESIA – Phase II: Conclusions	Comments and Mott MacDonald Conclusions
Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others	Semendo people were a distinct ethnic group however, It is part of a larger ethnic group, Malayan ethnic due to historically part of deutro- Malayan civilization which migrate from Indochina region to South East Asia around 3 AD, During Srivijaya expansion the Semendo settlement were further pushed to more remote area in the mountain. **Applicable: Yes**	Though part of the Malay culture of the region, the Semendo people are a distinct ethnic group with its own language and culture. The Basemah are considered to be integrated into the mainstream economy and culture, though they are recognized as the historic ethnic group of the area. **Applicable: Yes**	Both the SCAR and the draft ESIA conclude that the Semendo self-identify as members of a distinct indigenous cultural group and therefore meet this applicability requirement. Based upon the information reviewed within the audit, and consultation with stakeholders, Mott MacDonald is of the opinion that the Semendo meet this applicability requirement. **Applicable: Yes**
Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories	Semendo people were not rooted from the area, until the period of 1970 where transmigration program were conducted by government **Applicable: No**	Semendo people have moved into the project area some 30 years ago and have established settlements throughout the area. The Semendo do have traditionally rights or ancestral attachments to land, but not in the project area. The Semendo people's livelihoods are based primarily on agriculture, such as rice and coffee cultivation. Semendo farming methods are traditional and basic. They are integrated into the regional economy and have entered other professions, including salaried employment in private and public sector. **Applicable: No**	Both the SCAR and the draft ESIA conclude that the Semendo people moved into the area in recent historical times and therefore do not have a collective attachment to the Project area. During the audit the Tunggul Bute Village Head stated that there were no traditional lands (*Tanah Adat*) within the Project area. He also confirmed that the large majority of people had moved into the area within the past 20 years, with an ongoing in-migration rate of approximately 5 families per year. The Dusun IV Yayasan Sub-village Head noted that there was an area of community forest (*Hutan Kemasyarakatan*) outside of the Project area, however this was not a form of traditional land title and is essentially forest land which has had its managed vested within a particular village governance unit. Reference was also made to a 1983 land grant of 2 hectares to each family settling in the area. This is not a form of traditional land tenure, and was part of government led land allocations under the Agrarian Land Act. **Applicable: No.**
Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture	Semendo people customs were largely influenced by Islam culture and Malayan. Though the Semendo have their distinct	Semendo customs and culture reflect general Indonesian culture found throughout western Indonesia-- Muslim	The draft ESIA builds upon the findings of the SCAR and includes traditional elements of distinct Semendo institutions,

Requirements	SCAR: Conclusions	Draft ESIA – Phase II: Conclusions	Comments and Mott MacDonald Conclusions
	customs and traditions, the Semendos in the project area are Muslims and follow Muslim customs and traditions. **Applicability: Yes**	Malay. Mosques, mushalla and Islamic shools (pesantren) are common throughout the area. They have a distinctive traditional house design. They also have a distinct martial arts style called Kuntau. A unique Semendo custom is "Tunggu Tubang" whereby family inheritance is governed by the oldest female child. Inheritance primarily consists of farmland and houses. Given this custom, males typically migrate from the area. **Applicable: No**	particularly relating to housing and the matrilineal inheritance practice. However, despite this additional information confirming a degree of distinctiveness, SERD has changed the applicability conclusion from Yes in the SCAR, to No within the ESIA without robust justification. Based on the information reviewed within the scope of the audit, and outcomes of stakeholder engagement confirmed the distinctive housing types, customary festivals and family inheritance practices. **Applicable: Yes**
A distinct language, often different from the official language of the country or region.	Semendo have their distinct dialect though the language itself is not significantly different with Malayan language (the root of national language). Semendo people are conversant with the national language in addition to their dialect. **Applicable: Yes**	Like much of Indonesia, the Semendo are at least bilingual. They have their own language derived from the Malay language family (with some similarities to the Palembang language) and are conversant in the national language. **Applicable: No**	SERD appears to have changed the applicability conclusion based on the language criteria from Yes within the SCAR, to No within the ESIA based on the same information and without robust justification. Based on information reviewed during the audit, and interviews with key stakeholders, it was confirmed that Semendo have their own dialect, distinct from the national language. **Applicable: Yes**
Conclusion	The SCAR concludes that the Semendo are IP, regardless of the fact that they only fulfil three of the four criteria	The draft ESIA concludes that the Semendo are not IP. However, there are ambiguities between the text presenting the findings and the determined applicability	The information provided by SERD across the SCAR and draft ESIA for Phase II strongly indicates that the Semendo are the dominant ethnic group within the area. They self-identify as Semendo people, have distinct customary practices and their own dialect and while they are recent migrants to the Project Area, have a cultural attachment to the Semendo area throughout the Muara Enim Regency. Without additional primary data being collected as part of a detailed indigenous peoples screening exercise, Mott MacDonald recommends that the original classification of Semendo people as indigenous be supported .

Source: SCAR (2014), Draft ESIA (2017) and Mott MacDonald (2017)

Table 19: Basemah IP Classification – SCAR and Draft ESIA Comparison

Requirements	SCAR Conclusion	Draft ESIA Phase II Conclusion	Comments and Mott MacDonald Conclusion
Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others	Not identified within SCAR	Though part of the Malay culture of the region, the Basemah people are a distinct ethnic group with its own language and culture. The Basemah are considered to be integrated into the mainstream economy and culture **Applicable: Yes**	Mott MacDonald has no information which would counter this conclusion and agrees with the assessment within the ESIA **Applicable: Yes**
Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories	Not identified within SCAR	Besemah are historically from the area. The Besemah have traditional rights or ancestral attachment to land in the area, but not in the vicinity of the project. They also are into integrated into the regional culture and governmental system. Like the Semendo, livelihoods are based primarily on agriculture, such as rice, coffee, and rubber cultivation. They are integrated into the regional economy and have entered other professions, including salaried employment in private and public sector. The Besemah are considered more advanced that the Semendo. **Applicable: No**	Given the Besemah are historically from the area, the likelihood that they have ancestral connections or traditional rights over part of the Project area is elevated. There is no evidence that this conclusion is supported by mapping or consultation with Besemah people from the Project area. Applicable: **Further information required**
Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture	Not identified within SCAR	Besemah customs and culture reflect general Indonesian culture found throughout western Indonesia – Muslim Malay. Mosques, musholla and Islamic schools (pesantren) are common throughout the area. **Applicable: No**	Mott MacDonald has no information which would counter this conclusion and agrees with the assessment within the ESIA **Applicable: No**
A distinct language, often different from the official language of the country or region.	Not identified within SCAR	Like much of Indonesia, the Besemah are at least bilingual. They have their own language derived from the Malay language family and are conversant with the national language **Applicable: No**	Based on the Besemah having a separate dialect, it is indicative that they may meet these criteria. There is no evidence that this conclusion is supported by consultation with Besemah people from the Project area **Applicable: Further Information Required**
Conclusion		The draft ESIA concludes that the Besemah are no IP.	The information presented by SERD indicates that the Besemah self-identify as Besemah, have their own dialect and an

Requirements	SCAR Conclusion	Draft ESIA Phase II Conclusion	Comments and Mott MacDonald Conclusion
			attachment to ancestral lands in the area. There is no evidence that these conclusions have been supported consultation with Besemah people. This is particularly important in determining whether the Project area impinges on their ancestral land. Further work is required by SERD to be included within a detailed Indigenous Peoples screening exercise.

Source: ESIA and Mott MacDonald 2017

E. 2017 Indigenous Peoples Screening Assessment

As an outcome of consultation between SERD, the ADB and Mott MacDonald, SERD engaged PT Inti Hexta Semesta (IHS) to facilitate a detailed IP screening exercise to produce a definitive conclusion based upon document review, consultation with members of the local community, engagement with recognised government and academic experts with a background in IP matters within South Sumatra and final assessment against the provisions of paragraph 6 of ADB SR3, which is similar to the same criteria adopted by Paragraph 5 of IFC PS7

This report concludes that while the Semende people within the area have a strong societal tradition in many aspects, it does not meet the definition of IP as contained with SR3 as applied to the Indonesian context (ie having regard for cultural and regulatory perceptions as to what constitutes an IP). As further described within Table 7 below, IHS notes that they are not a remote or isolated community as defined by the Ministry of Social Affairs within Indonesian regulations[48] or a customary law (known as "adat" in Bahasa Indonesia) or traditional community[49].

Table 20: Summary of outcomes of IP Screening Report

	IHS Conclusion	Mott MacDonald Commentary
Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others	The local community in the area identifies as belonging to the Semendo ethnic group, however it is not recognised as an isolated community or customary law community for the purposes of the Indonesian regulatory system. The report specifically notes the following • Semende society is not a closed society, let alone backward. They are quite open to interactions with the outside world. • There is a tradition of wanderers also exist in Semende community, both in search of knowledge and making a living. • Outcomes of field work indicates that Semendo refuse to be categorized as an isolated tribe or a remote indigenous community.	While the local people identify as a separate ethnic group, the outcomes of the screening report indicate that they do not identify as an indigenous cultural group as the concept applies within Indonesia. During discussions with community leaders as part of its field work for the audit, Mott MacDonald noted that they did not refer to themselves as an IP, which is generally applied to isolated communities – the example of Orang Rimba was provided as such a group. As also noted within the report, the Semende people are also not identified as an isolated traditional community, or as a customary law community by the Indonesian regulations. Both of the above matters are indicative that the Semende people while identifying as a separate ethnic group are not a distinct indigenous cultural group as applied with the local context.

[48] Known as a Komunitas Adat Terpencil (KAT) as defined within Presidential Decree No. 186 of 2014. It defines KAT as "remote/isolated Indigenous Communities are a certain set of people bound by geographical, economic and/or socio-cultural unity, and poor, isolated and socio-economically vulnerable". Criteria include limited access to basic social services, closed, homogenous and dependent on natural resources.

[49] As described within the Indonesian Constitution of 1945 and the Minister of Home Affairs Decree 52/2014 on Guidelines for the Recognition and Protection of Indigenous and Tribal Peoples. Criteria include history of tribal customs, customary territory and law, separate customary and/or property objects and a separate institutional governance system.

	IHS Conclusion	Mott MacDonald Commentary
Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories	The report concludes that while Semendo people are identified as living within a particular area within South Sumatra, their collective attachment to land is not absolute due to the following: • The community within the SERD WKPB have historically sought to migrate out of the area to study or seek livelihood opportunities throughout Indonesia • Semende community representatives noted that land within the SERD WKPB is private land owned by the people themselves or managed in accordance with the Tunggu Tubang system • Semendo communities living within the SERD WKPB and surrounding regions have no land that they recognise as communal or customary ("tanah/hutan ulayat")	Mott MacDonald agrees with these conclusions which were further reinforced during a meeting with adat leaders held in Segamit. Members of this group noted that they did not recognise Tunggu Tubang land ownership claims within the Protection Forest area.
Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture	For the matters of being separate from the dominant society and culture of the local area (ie South Sumatra), the report provides two conclusions: • The local Semende does have a unique identity in some respects however in aspects such as language, religion and economic systems they are not different from other communities within South Sumatra • The religion of the local people is 100% Sunni Islam, which is the majority religion in South Sumatra and Indonesia in general • It does not have separate social, economic, political and legal institutions from those prevailing locally and nationally. They are governed by local village, sub-district and district administrative systems • There are customary stakeholder institutions which play a role in maintaining some local traditions and addressing customary issues at family and kinship level (ie Tunggu Tubang), however even the application of this is stipulated through local government decree • Customary laws are not binding, with the rules pertaining to Tunggu Tubang and moral systems exist as guidelines. • While customary leaders exist within the community, they are rarely involved in matters involving broader village development. Their roles pertain primarily to resolving customary issues at family and kinship level.	Mott MacDonald concurs with this assessment which indicates that while Semendo people have some distinctive cultural practices, these form a small part of managing and resolving family land ownership claims as well as providing a basic moral code. All other aspects of customary, cultural, economic, social and political institutions which guide everyday life are not separate from those encountered elsewhere within South Sumarta Province or throughout Indonesia.
A distinct language, often different from the official language of the country or region	The everyday language used by Semende communities in the Project language is used by Semendo communities in general and there is very little differences with the languages of communities in the nearby larger towns of Pagar Alam and Lahat (Besemah). All are derived from the Malay language family and hence is readily understood by other people who are speakers of language derived from the Malay Family. This includes the national language of Indonesia (Bahasa Indonesia) in which Semende people are also proficient.	The language utilised by Semendo people is similar to that used elsewhere within the surrounding areas. Additionally, all interviewed stakeholders during the site audit were fully conversant in the national language (Bahasa Indonesia) and are not linguistically isolated from the mainstream society throughout South Sumatra and Indonesia.

Source: PT IHS Indigenous Peoples Screening Report (2018), Page 18

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