



Riau 275 MW Gas Combined Cycle Power Plant IPP - ESIA

Medco Ratch Power Riau

ESIA Volume 3: Social Impact Assessment

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Glossary

Term	Definition
Area of Influence	The project area of influence is defined through consideration of the project footprint including all ancillary project components and also considering project impacts on various environmental and social components. A number of project areas of influence may result but it is best to amalgamate them into an overall project area of influence. In addition to the area of geographical or spatial influence, temporal influence should also be determined. A geographical information system is a useful tool for this purpose.
Cut-off Date	Date of completion of the census and assets inventory of persons affected by the project. Persons occupying the project area after the cut-off date are not eligible for compensation and/or resettlement assistance. Similarly, fixed assets (such as built structures, crops, fruit trees, and woodlots) established after the date of completion of the assets inventory, or an alternative mutually agreed on date, will not be compensated.
Economic Resettlement	Loss of income streams or means of livelihood, resulting from land acquisition or obstructed access to resources (land, water, or forest) resulting from the construction or operation of a project or its associated facilities.
Environmental and Social Impact Assessment	Identifies and assesses risks and the impacts associated with the project and provides a series of mitigation measures that when implemented will ensure the project complies with the standards and guidelines it has been evaluated against.
Environmental and Social Management Plan	Summarises the mitigation and monitoring measures identified through the ESIA process and sets out the responsibilities for their implementation.
Environmental and Social Management System	Identifies and assesses risks and the impacts associated with the project and provides a series of mitigation measures that when implemented will ensure the project complies with the standards and guidelines it has been evaluated against.
Involuntary Resettlement	Resettlement is involuntary when it occurs without the informed consent of the displaced persons or if they give their consent without having the power to refuse resettlement.
Indigenous People	Social groups with identities that are distinct from mainstream groups in national societies, are often among the most marginalised and vulnerable segments of the population. In many cases, their economic, social, and legal status limits their capacity to defend their rights to, and interests in, lands and natural and cultural resources, and may restrict their ability to participate in and benefit from development.
Land Acquisition	Land acquisition includes both outright purchases of property and acquisition of access rights, such as easements or rights of way.
Legal and regulatory framework	The national legal and institutional framework applicable to the project should be defined. This should also include any additional lender requirements and any international agreements or conventions that may also apply.
Livelihood	Refers to the full range of means that individuals, families, and communities utilize to make a living, such as wage-based income, agriculture, fishing, foraging, other natural resource based livelihoods, petty trade, and bartering.
Livelihood Restoration Plan	The document in which a project sponsor or other responsible entity specifies the procedures that it will follow and the actions that it will take to mitigate adverse effects, compensate losses, and provide development benefits to persons and communities affected by an investment project. The Livelihood Restoration Plan relates specifically to cases where Project Affected Persons (PAPs) are economically displaced.
Physical Displacement	Loss of shelter and assets resulting from the compulsory acquisition of land associated with a project that requires the affected person(s) to move to another location.

Term	Definition
Project Affected Persons	Any person who, as a result of the implementation of a project, loses the right to own, use, or otherwise benefit from a built structure, land (residential, agricultural, or pasture), annual or perennial crops and trees, or any other fixed or moveable asset, either in full or in part, permanently or temporarily.
Resettlement Action Plan	The document in which a project sponsor or other responsible entity specifies the procedures that it will follow and the actions that it will take to mitigate adverse effects, compensate losses, and provide development benefits to persons and communities affected by an investment project. The Resettlement Action Plan relates specifically to cases where Project Affected Persons are physically displaced.
Vulnerable Groups	People who by virtue of gender, ethnicity, age, physical or mental disability, economic disadvantage, or social status may be more adversely affected by resettlement than others and who may be limited in their ability to claim or take advantage of resettlement assistance and related development benefits.

List of Abbreviations

Acronym	Meaning
ADB	Asian Development Bank
AMDAL	Analisis Mengenai Dampak Lingkungan
AoL	Area of Influence
CCPP	Combined Cycle Power Plant
CFPP	Coal Fired Power Plant
CSR	Corporate Social Responsibility
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EPC	Engineering Procurement Construction
EPFI	Equator Principle Financial Institutions
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
FPIC	Free, Prior, and Informed Consent
GDI	Gender Development Index
GRDP	Gross Regional Domestic Product
HDI	Human Development Index
IFC	Institutional Finance Committee
LRP	Livelihood Restoration Plan
MRPR	Medco Ratch Power Riau
NBC	Nusa Buana Cipta
NGO	Non-Governmental Organisation
NTS	Non-Technical Summary
PAP	Project Affected Persons
PCR	Physical cultural resources
PLN	PT Perusahaan Listrik Negara (Persero)
RAP	Resettlement Action Plan
SEP	Stakeholder Engagement Plan
SIA	Social Impact Assessment
SPP	Sarana Pembangunan Pekanbaru

1. Introduction

1.1 Overview

The ESIA Volume 3: Social Impact Assessment (SIA) assesses how people and communities may be affected as a result of the Project in terms of the way they live, work and interact. The broad objectives of this SIA are to ensure that potential socio-economic and community impacts have been identified, assessed, mitigated and managed in a constructive manner. Social, economic and biophysical impacts of the Project are interrelated and this interrelationship is considered in the SIA. The human environment will be impacted by environmental impacts such as noise, dust, waste and traffic. These impacts are identified and taken into account in this SIA, but are addressed in detail in the ESIA Volume 2: Environmental Impact Assessment and other Technical Reports located in ESIA Volume 5: Technical Appendices.

Social and community impacts that have been assessed in this Volume and identified as potentially significant beneficial and negative include: employment, community health and safety and livelihood restoration. Environmental impacts from construction activities could also have community impacts, however, to avoid double counting of impacts these have been addressed within Volume 2 and are not covered in this SIA.

1.2 Structure of Volume 3

This ESIA Volume 3: SIA is structured in the following way:

- Section 2 – Legal and Regulatory Framework
- Section 3 – Impact Assessment Methodology
- Section 4 – Social and Economic Baseline
- Section 5 – Stakeholder Engagement
- Section 6 – Social Impact Assessment
- Section 7 – Cultural Heritage
- Section 8 – Mitigation, Monitoring, Enhancement Measures and Residual Impacts
- Section 9 – References

2. Legal and Regulatory Framework

2.1 Introduction

The purpose of this section is to set out the requirements that specifically apply to SIA for the Project. It is important that the Project meets local and internationally accepted environmental and social safeguard standards to ensure that community benefits are maximised and that potential adverse environmental and social impacts are minimised. Relevant national and international requirements are summarised in the following sections. These regulations and requirements are applicable to the plant site, gas pipeline, water and wastewater pipelines, access road, and transmission line.

2.2 Indonesian Requirements

The following Indonesian regulations will act as a guideline for this SIA include:

Land Tenure and Customary People / Masyarakat Adat

- Constitutional Court Decision (MK) No.35 of 2012, effective May 16, 2013 State recognition of indigenous communities and their forests.

Land Acquisition

- National Land Head Agency Regulation No. 5 of 2012 and No. 06 of 2015 regarding Technical Guidelines for Land Procurement; and
- GoI Regulation PP No. 24 of 2010; No. 61 of 2012; and No. 105 of 2015 regarding Utilization of Forest Area.

Right to Provide Right and Accurate Information

- Environmental Management Act of 1997.

Cultural Heritage

- Presidential Decree PP No. 1 of 1987 Convention concerning the Protection of the World Cultural and Natural Heritage.

2.3 International Requirements

2.3.1 Asian Development Bank

The Asian Development Bank (ADB) is committed to ensuring the social sustainability of the projects it supports and this is outlined in the following:

- ADB Safeguard Policy Statement (ADB, 2009);
- Social Protection Strategy (2001); and
- ADB's Gender and Development Policy (2003).

Involuntary Resettlement and Indigenous Peoples Safeguards which are detailed in the ADB Safeguard Policy Statement (2009) are summarised further below.

Involuntary Resettlement Safeguards

The objectives of the Involuntary Resettlement Safeguards are to avoid involuntary resettlement wherever possible; to minimise involuntary resettlement by exploring project and design alternatives; to enhance, or at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels; and to improve the standards of living of the displaced poor and other vulnerable groups. The Involuntary Resettlement Safeguards cover physical displacement and economic displacement and are triggered as a result of involuntary acquisition of land, or involuntary restrictions on land use or on access to legally designated parks and protected areas. It covers them whether such losses and involuntary restrictions are full or partial, permanent or temporary. The Involuntary Resettlement Safeguards includes 12 Policy Principles which are outlined in Volume 1 – Introduction.

The ADB Involuntary Resettlement Safeguards – A Planning and Implementation Good Practice Sourcebook Draft Working Document (ADB, 2012) outlines technical guidance and good practice recommendations in implementing the Safeguard Policy Statement with respect to involuntary resettlement. The source book uses ADB's own experience in effective planning and implementation of involuntary resettlement programmes and international good practices adopted by multilateral development banks.

Indigenous Peoples Safeguards

The objectives of the Indigenous Peoples Safeguards are to design and implement projects in a way that fosters full respect for Indigenous Peoples' identity, dignity, human rights, livelihood systems, and cultural uniqueness as defined by the Indigenous Peoples themselves so that they (i) receive culturally appropriate social and economic benefits, (ii) do not suffer adverse impacts as a result of projects, and (iii) can participate actively in projects that affect them.

The Indigenous Peoples Safeguards are triggered if a project directly or indirectly affects the dignity, human rights, livelihood systems, or culture of Indigenous Peoples or affects the territories or natural or cultural resources that Indigenous Peoples own, use, occupy, or claim as an ancestral domain or asset. The term Indigenous Peoples is used in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing a range of characteristics in varying degrees, including:

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

In considering these characteristics, national legislation, customary law, and any International conventions to which the country is a part will be taken into account. A group that has lost collective attachment to geographically distinct habitats or ancestral territories in the project area because of forced severance remains eligible for coverage under this policy. The Indigenous Peoples Safeguards includes nine Policy Principles which are outlined in Volume 1 – Introduction.

The ADB Indigenous Peoples Safeguards – A Planning and Implementation Good Practice Sourcebook Draft Working Document (ADB, 2013) outlines technical guidance and good practice recommendations in implementing the Safeguard Policy Statement with respect to indigenous peoples. The source book uses ADB's own experience in effective planning and implementing indigenous peoples safeguards and international good practices adopted by multilateral development banks.

2.3.2 IFC Performance Standards

IFC's Performance Standards on Environmental and Social Sustainability (IFC, 2012), define the client's roles and responsibilities for managing their projects. They are also relevant to other institutions applying the Equator Principles when making project financing decisions. Table 2.1 outlines the IFC Performance Standards that have been considered in relation to this SIA.

Table 2.1 : IFC Performance Standards and Objectives (IFC, 2012)

Performance Standard	Objectives
1 Assessment and Management of Environmental and Social Risks and Impacts	- To identify and evaluate environmental and social risks and impacts of the project. - To adopt a mitigation hierarchy to anticipate and avoid, or where avoidance is not possible, minimise, and where residual impacts remain, compensate/ offset for risks and impacts to workers, Affected Communities, and the environment. - To promote improved environmental and social performance of clients through the effective use of management systems. - To ensure that grievances from Affected Communities and external communications from other stakeholders are responded to and managed appropriately. - To promote and provide means for adequate engagement with Affected Communities throughout the project cycle on issues that could potentially affect them and to ensure that relevant environmental and social information is disclosed and disseminated.
2 Labour and Working Conditions	- To promote the fair treatment, non-discrimination, and equal opportunity of workers. - To establish, maintain, and improve the worker-management relationship. - To promote compliance with national employment and labour laws. - To protect workers, including vulnerable categories of workers such as children, migrant workers, workers engaged by third parties, and workers in the client's supply chain. - To promote safe and healthy working conditions, and the health of workers. - To avoid the use of forced labour.
3 Resource Efficiency and Pollution Abatement	- To avoid or minimise adverse impacts on human health and the environment by avoiding or minimising pollution from project activities. - To promote more sustainable use of resources, including energy and water. - To reduce project-related GHG emissions.
4 Community Health, Safety and Security	- To anticipate and avoid adverse impacts on the health and safety of the Affected Community during the project life from both routine and non-routine circumstances. - To ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimises risks to the Affected Communities.
5 Land Acquisition and Involuntary Resettlement	- To avoid, and when avoidance is not possible, minimise displacement by exploring alternative project designs. - To avoid forced eviction. - To anticipate and avoid, or where avoidance is not possible, minimize adverse social and economic impacts from land acquisition or restrictions on land use by (i) providing compensation for loss of assets at replacement cost and (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected. - To improve, or restore, the livelihoods and standards of living of displaced persons. - To improve living conditions among physically displaced persons through the provision of adequate housing with security of tenure at resettlement sites.

Performance Standard	Objectives
6 Biodiversity Conservation and Sustainable Management of Living Natural Resources	- To protect and conserve biodiversity. - To maintain the benefits from ecosystem services. - To promote the sustainable management of living natural resources through the adoption of practices that integrates conservation needs and development priorities.
7 Indigenous Peoples	- To ensure that the development process fosters full respect for the human rights, dignity, aspirations, culture, and natural resource-based livelihoods of Indigenous Peoples. - To anticipate and avoid adverse impacts of projects on communities of Indigenous Peoples, or when avoidance is not possible, to minimize and/or compensate for such impacts. - To promote sustainable development benefits and opportunities for Indigenous Peoples in a culturally appropriate manner. - To establish and maintain an ongoing relationship based on Informed Consultation and Participation (ICP) with the Indigenous Peoples affected by a project throughout the project's life-cycle. - To ensure the Free, Prior, and Informed Consent (FPIC) of the Affected Communities of Indigenous Peoples when the circumstances described in this Performance Standard are present. - To respect and preserve the culture, knowledge, and practices of Indigenous Peoples.
8 Cultural Heritage	- To protect cultural heritage from the adverse impacts of project activities and support its preservation. - To promote the equitable sharing of benefits from the use of cultural heritage.

Other international policies used to guide this SIA include:

- World Bank Environmental, Health and Safety (EHS) General and Industry Specific Guidelines;
- ILO Convention 169 of 1989 on the Indigenous and Tribal People's Convention;
- United Nations Declaration on Indigenous Peoples;
- Convention on Biological Diversity (CB; articles 8-j, 10-c, 17.2, 18.4 are important to indigenous people);
- The Ramsar Convention on Wetlands policies on indigenous people;
- The United National Framework Convention on Climate Change as it relates to indigenous people;
- Declaration on the Rights of Indigenous Peoples, IWGIA;
- The UN Global Compact;
- The International Labour Organization's Declaration on Fundamental Principles and Rights at Work; and
- The Rio Declaration on Environment and Development.

3. Impact Assessment Methodology

3.1 Introduction

The objective of the SIA is to determine the potential impacts of the Project on social and economic factors that influence the socio-economic well-being of the communities where the Project is proposed. To measure the influence of the Project on these factors, a socio-economic baseline is undertaken to establish existing characteristics of the community. This is followed by a discussion of the potential positive and negative impacts that could result from implementation of the Project including proposed measures to mitigate any potential negative impacts. The SIA has been completed in accordance with both national and international requirements.

3.2 Baseline Conditions

Baseline data collection refers to the collection of background data in support of the social assessment. Ideally baseline data is collected prior to development of a project, but often this is not possible. Data collection can also occur throughout the life of a project as part of ongoing monitoring of environmental and social conditions.

Baseline information used for this ESIA has utilised primary data collected through on-site surveys by Jacobs environmental and social sub-consultant Nusa Buana Cipta (NBC) between June 2017 to September 2017 (dry season and focusing on power plant) and January to February 2018 (wet season and focusing on gas pipeline and temporary jetty). Where applicable secondary data sources collected from desk-based studies and literature reviews have also been used and are referenced within the report.

3.3 Impact Identification

The impact assessment predicts and assesses the Project's likely positive and negative impacts, in quantitative terms to the extent possible. For each of the socioeconomic aspects of the project, the assessment identifies impacts and reports the likely significant impacts. An ESIA will always contain a degree of subjectivity, as it is based on the value judgment of various specialists and ESIA practitioners. The evaluation of significance is thus contingent upon values, professional judgement, and dependent upon the environmental context. Ultimately, impact significance involves a process of determining the acceptability of a predicted impact.

In broad terms, impact significance can be characterised as the product of the degree of change predicted (the magnitude of impact) and the value of the receptor/resource that is subjected to that change (sensitivity of receptor). For each impact the likely magnitude of the impact and the sensitivity of the receptor are defined. Generic criteria for the definition of magnitude and sensitivity are summarised below.

3.3.1 Direct vs Indirect Impacts

A direct impact, or first order impact, is any change to the environment, whether adverse or beneficial, wholly or partially, resulting directly from a social or environmental aspect. An indirect impact may affect an environmental, social or economic component through a second order impact resulting from a direct impact.

3.3.2 Magnitude Criteria

The assessment of impact magnitude is undertaken by categorising identified impacts of the Project as beneficial or adverse. Then impacts are categorised as 'major', 'moderate', 'minor' or 'negligible' based on consideration of parameters such as:

- Duration of the impact – ranging from 'well into operation' to 'temporary with no detectable impact'.

- Spatial extent of the impact – for instance, within the site boundary, within district, regionally, nationally, and internationally.
- Reversibility – ranging from ‘permanent thus requiring significant intervention to return to baseline’ to ‘no change’.
- Likelihood – ranging from ‘occurring regularly under typical conditions’ to ‘unlikely to occur’.
- Compliance with legal standards and established professional criteria – ranging from ‘substantially exceeds national standards or international guidance’ to ‘meets the standards’ (i.e. impacts are not predicted to exceed the relevant standards) presents generic criteria for determining impact magnitude (for adverse impacts). Each detailed assessment will define impact magnitude in relation to its environmental or social aspect.
- Any other impact characteristics of relevance.

Table 3.1 below presents generic criteria for determining impact magnitude (for adverse impacts). Each detailed assessment will define impact magnitude in relation to its environmental or social aspect.

Table 3.1 : Magnitude criteria

Magnitude (beneficial or adverse)	Definition (considers likelihood, duration, number of people affected, spatial extent and local benefit sharing)
Major	A highly likely impact that would have implications beyond the Project's life affecting the wellbeing of many people across a broad cross-section of the population and affecting various elements of the local communities', or workers', resilience.
Moderate	A likely impact that continues over a number of years throughout the Project's life and affects the wellbeing of specific groups of people and affecting specific elements of the local communities', or workers', resilience.
Minor	A potential impact that occurs periodically or over the short term throughout the life of the Project affecting the wellbeing of a small number of people and with little effect on the local communities', or workers', resilience.
Negligible	A potential impact that is very short lived so that the socio-economic baseline remains largely consistent and there is no detectable effect on the wellbeing of people or the local communities' or workers', resilience.

3.3.3 Sensitivity Criteria

The significance of an impact has been determined by the interaction between its magnitude, and the sensitivity of receptors affected. Professional judgement has been used by appropriately qualified social scientists when assigning significance. The use of these two concepts for this assessment is outlined below.

The sensitivity of receptors has been estimated through consideration of their socio-economic vulnerability, measured by their capacity to cope with social impacts that affect their access to or control over additional or alternative social resources of a similar nature, ultimately affecting their wellbeing. Sensitive or vulnerable receptors are generally considered to have less means to absorb adverse changes, or to replicate beneficial changes to their resource base than non-sensitive or non-vulnerable receptors.

When considering sensitivity, the type of resources in question varies between receptors. For example, a community's vulnerability has generally been measured in terms of its resilience to loss of community facilities, whereas an individual's vulnerability has generally been considered in relation to their resilience to deprivation and loss of livelihood assets or opportunities (such as jobs, productive land or natural resources). Impacts that increase impoverishment risks contribute to vulnerability. Impoverishment risks include landlessness,

joblessness, homelessness, marginalisation, increased morbidity and mortality, food insecurity, loss of access to common property resources and social disarticulation. Table 3.2 below presents the guideline criteria that have been used to categorise the sensitivity of receptors.

Table 3.2 : Sensitivity criteria

Category	Description
High	An already vulnerable social receptor with very little capacity and means to absorb proposed changes or with very little access to alternative similar sites or services.
Medium	An already vulnerable social receptor with limited capacity and means to absorb proposed changes or with little access to alternative similar sites or services.
Low	A non-vulnerable social receptor with some capacity and means to absorb proposed changes and with some access to alternative similar sites or services.
Negligible	A non-vulnerable social receptor with plentiful capacity and means to absorb proposed changes and with good access to alternative similar sites or services.

3.3.4 Impact Evaluation

The determination of impact significance involves making a judgment about the importance of project impacts. This is typically done at two levels:

- The significance of project impacts factoring in mitigation inherently within the design of the project; and
- The significance of project impacts following the implementation of additional mitigation measures, referred to as residual impact.

Likely impacts are evaluated taking into account the interaction between the magnitude and sensitivity criteria as presented in the impact evaluation matrix in the table below.

Table 3.3 : Impact Evaluation Scale

		Magnitude			
		Major	Moderate	Minor	Negligible
Sensitivity	High	Major	Major	Moderate	Negligible
	Medium	Major	Moderate	Minor	Negligible
	Low	Moderate	Minor	Negligible	Negligible
	Negligible	Minor	Negligible	Negligible	Negligible

3.4 Mitigation

Mitigation measures are actions taken to avoid or minimise negative environmental or social impacts. The mitigation hierarchy should be followed: prevent or avoid, minimise, restore or remedy, offset, compensate. Mitigation measures should be clearly identified and linked to environmental and social management plans.

For the purpose of the impact assessment, mitigation measures embedded within design are not considered to be mitigation. For clarity, this is considered to be part of the project and not mitigation and impact assessment, and significance is identified with and without mitigation measures.

3.5 Monitoring

Monitoring is not linked to the impact evaluation but is an important component of the ESIA and allows for evaluation of the effectiveness of mitigation measures. Monitoring and follow-up actions should be completed to:

- Continue the collection of data throughout construction, operation and later decommissioning;
- Evaluate the success of mitigation measures, or compliance with project standards or requirements;
- Assess whether there are impacts occurring that were not previously predicted; and
- In some cases, it may be appropriate to involve local communities in monitoring efforts through participatory monitoring. In all cases, the collection of monitoring data and the dissemination of monitoring results should be transparent and made available to interested project stakeholders.

3.6 Residual Impacts

The impacts which cannot be addressed with additional mitigation measures are described as residual impacts, which will have to be considered on balance in the delivery of the project. The Impact Evaluation Scale shown in Table 3.3 (above) is used to assess the scale of residual impacts. Particularly consideration is given to whether the residual impacts are of magnitude and sensitivity that can be accommodated in the final project delivery.

3.7 Cumulative Impacts

The assessment of cumulative impacts will consider the combination of multiple impacts that may result when:

- The Project is considered alongside the existing facilities;
- The Project is alongside other existing or proposed projects in the same geographic area or similar development timetable; and
- Impacts identified in different environmental and social aspects of the ESIA combine to affect a specific receptor.

The assessment of cumulative impacts will identify where particular resources or receptors would experience significant adverse or beneficial impacts as a result of a combination of projects (inter-project cumulative impacts). In order to determine the full combined impact of the development, potential impacts during construction and operational phases have been assessed where relevant.

4. Social and Economic Baseline

4.1 Introduction

Social, economic and cultural baseline conditions for the power plant site and gas pipeline route are based on primary and secondary data gathered in 2017 and 2018.

2017 data: Primary data was initially gathered in June 2017 to September 2017 through a social survey undertaken by NBC in three administrative areas around the power plant site (*kelurahan*)¹, Bencah Lesung, Tuah Negeri and Industri Tenayan which are part of the City of Pekanbaru.

2018 data sources: Between January to February 2018 NBC gathered further primary data from five villages along the gas pipeline route. The five villages included: Kuala Gasib, Meredan, Pinang Sebatang, Tualang Timur all located within the Siak Regency and Melebung which is part of Pekanbaru City.

Secondary data was collected from the Pekanbaru City and Siak Regency statistics offices using 2016 and 2017 figures. Health data was collected from the health centres (*puskesmas*) and health sector publication data. Educational data was collected from the local Education Office and schools.

Data collection: Primary data was gathered in the form of interviews which aimed to collect socio-economic data from the impacted villagers. Further data was gathered from health-centres and education services. There were 30 respondents interviewed for each village and therefore over the nine villages making up the social survey for the Project, a total of 270 respondents (55% male and 45% female) were interviewed.

The survey addressed the respondents' occupation, physical assets, education, income, access to financial resources, and access to public services such as water-electricity and sanitation facilities as well as ethnicity. The respondents were selected using a purposive sampling method to get a cross section of representative groups from society. The selection process included identification of thirty respondents in each Administrative Area, representing distinctive groups in society including village representatives, community leaders, (a mixture of in-depth interviews with traditional or elderly leaders), village individuals, female and male, vulnerable groups and also the communities in the middle of palm oil plantations. The vulnerable groups consisted of poor women, the elderly, the disabled, and ethnic groups such as the Nias, a community group who came to the area after the tsunami in 2004. The respondents consisted of various ethnicities such as the Malay, the original inhabitants, the Javanese from North Sumatra, the Minang from West Sumatra, the Batak Nias, Aceh, and Ambonese and some ethnic Chinese. In-situ interviews conducted on-site, were also held with people from different livelihoods such as farmers, brick stone makers, traders' as well as local business people. Effort was made to consult with the landless, unemployed, as well as institutional representatives such as, and local government officers.

Limitations of survey data: It should be noted that at the time of baseline surveys being conducted the preferred route was the 'alternative gas pipeline route' shown in Figure 4.1 below. Following completion of baseline surveys a section of the gas pipeline route has changed, now referred to as the 'preferred gas pipeline route'. The social survey undertaken incorporates villages within the 10 km section of pipeline that has changed and therefore the survey data collected is considered representative of the preferred gas pipeline route.

One further village (Okura) located on the opposite side of the Siak River to the temporary jetty location was not included as part of the social survey conducted by NBC. However, baseline information on the village is provided as there is potential for interaction between the Okura Villagers and the temporary jetty location.

¹ In Indonesia, a subdistrict (*kecamatan*) is a subdivision of districts (*kabupaten*) and cities (*kota*). A sub-district is itself divided into administrative villages (*kelurahan*). An administrative village (*kelurahan*, *desa*) is the lowest level of government administration in Indonesia. It could be a village or a *kelurahan*. A village is headed by a village chief (*kepala desa*), who is elected by popular vote. A *kelurahan* is headed by a *lurah*, a civil servant appointed by local government (city or district). For the purposes of this report, an administrative area refers to a *kelurahan*.

Findings: A summary of the findings of the social surveys are incorporated into this SIA.

4.2 General Setting

Pekanbaru is the capital of Riau Province, which is an oil and gas resource-rich region of Sumatra. In the past Riau also had many forest resources.

The power plant and transmission line is located in Industri Tenayan administrative area which is part of Tenayan Raya Sub-District of Pekanbaru. The power plant is located approximately:

- 10 km due east of the City of Pekanbaru in central Sumatra, Indonesia;
- 3 km south of the Siak River; and
- 2 km south of PT Perusahaan Listrik Negara (Persero) (PLN) existing 2 x 110 MW Tenayan Coal Fired Power Station (CFPP).

The power plant and switchyard will be accommodated inside approximately 9.1 ha of land. The power plant site is bounded by the palm oil plantations to the west, south and east and Road 45 to the north. The Project plans to construct a 750 m long 150 kV transmission line to tie into the Tenayan – Pasir Putih 150 kV existing transmission line. The other administrative areas close to the site location are Bencah Lesung and Tuah Negeri. These three are all part of the 11 administrative areas in Tenayan Raya Sub-District which were established in January 2017. Statistical data for each of the administrative areas was not available during the social survey.

The temporary jetty site is situated next to land owned by PLTU Tenayan a state –owned company, which has established the 2 x 110 MW CFPP on 40 ha of land (hereon referred to as Tenayan CFPP). This facility was built in 2013 in the Industri Tenayan administrative area (*kelurahan*) and has been in operation since January 2017. The gas pipeline route for the Project is situated in Koto Gasib, Tualang, Tenayan Raya subdistricts/kecamatan of Siak Regency and Pekanbaru City. According to Government of Pekanbaru City, the land proposed to site the temporary jetty, is currently owned by the Government of Pekanbaru City

Within the Tuah Negeri administrative area are the Pekanbaru government offices. The Industri Tenayan *kelurahan* is a centre for industry within Pekanbaru.

The distance from the proposed power plant site to the nearest settlement of Bencah Lesung residential settlement is approximately 3 km and the distance to the Tuah Negeri settlement is about 5 km. The distance from Pekanbaru to Tenayan Raya district is about 14-15 km and there is a direct road connection available from the site to Pekanbaru. Even though Tuah Negeri and Bencah Lesung administrative areas are part of Pekanbaru City, they resemble discrete villages as opposed to being part of an urban area.

4.3 Project Area of Influence

The project area of influence (AoI) includes all communities potentially affected by the Project as well as the region surrounding the project where social interaction will take place and where local communities are likely to be impacted by the Project, either indirectly or directly.

The project location for the power plant, transmission lines, temporary jetty site, water pipeline and gas pipeline is spread across two administrative areas of Pekanbaru City and Siak Regency (*kabupaten*). The villagers and people affected by the Project live predominantly in these two administrative areas.

Figure 4.1 provides an overview of the Project, Figure 4.2 outlines the villages which the SIA will refer to and Figure 4.3 provides the Project AoI.

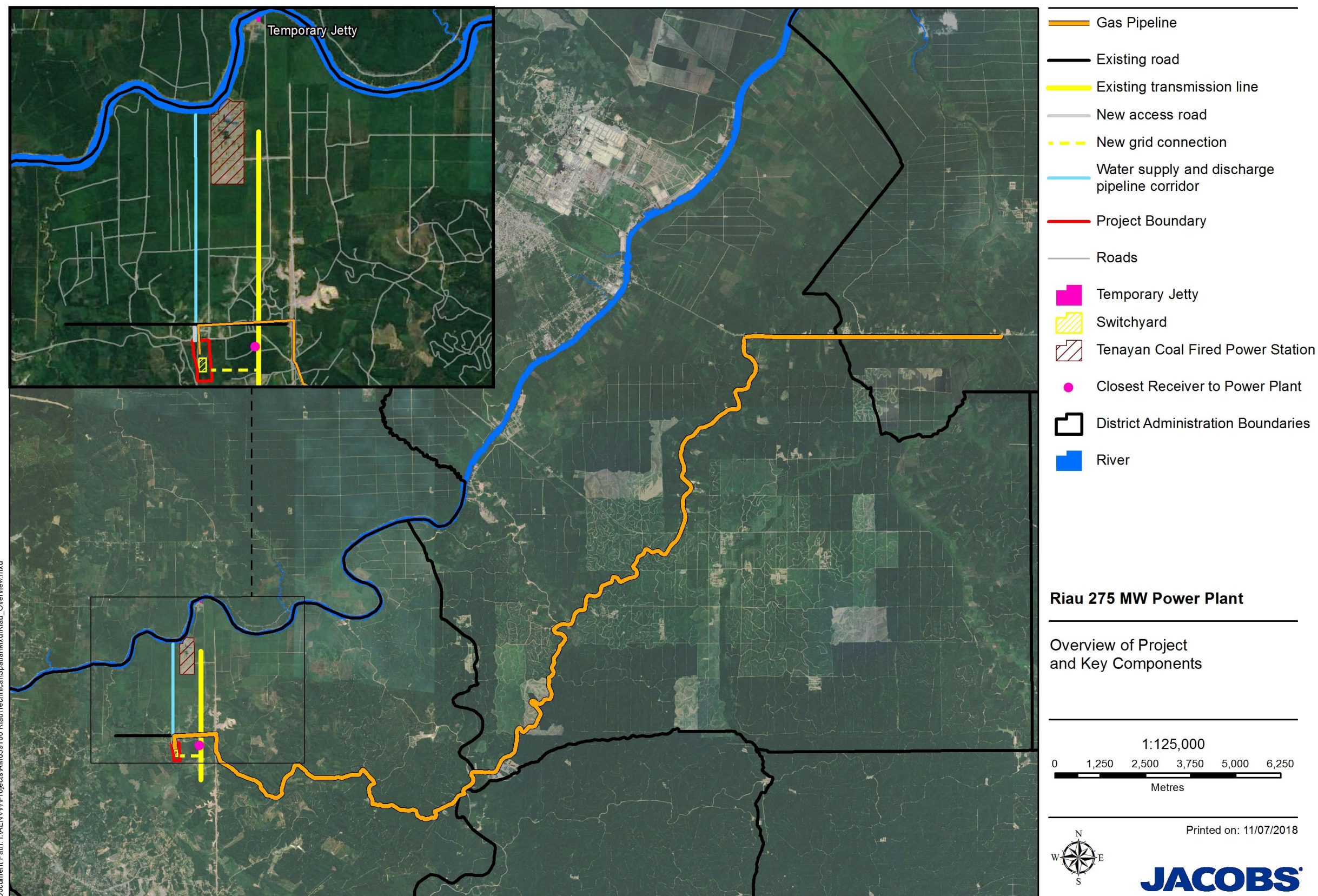


Figure 4.1 : Overview of Project and Key Components

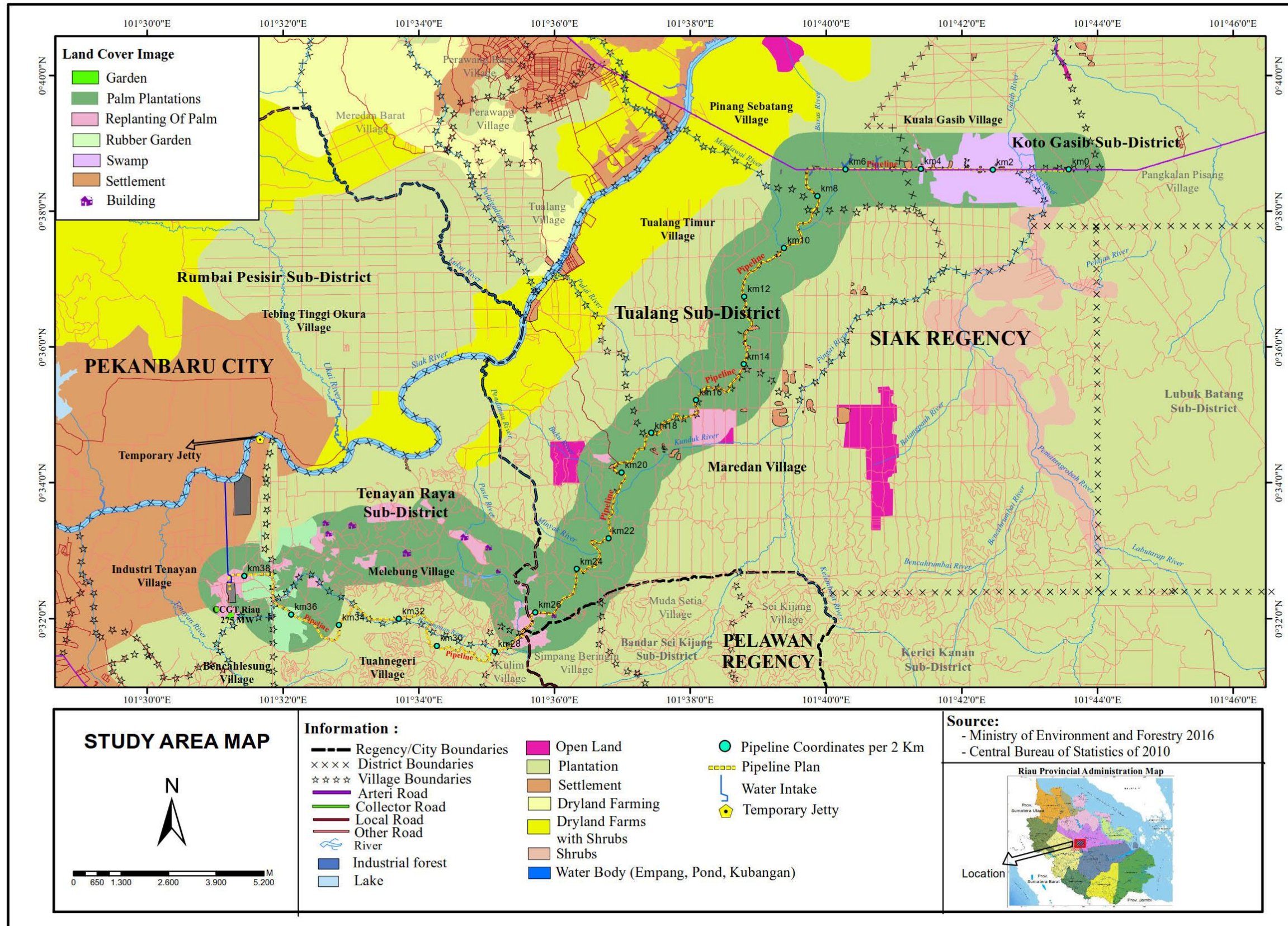


Figure 4.2 : Villages within Sub-Districts of Pekanbaru City and Siak Regency

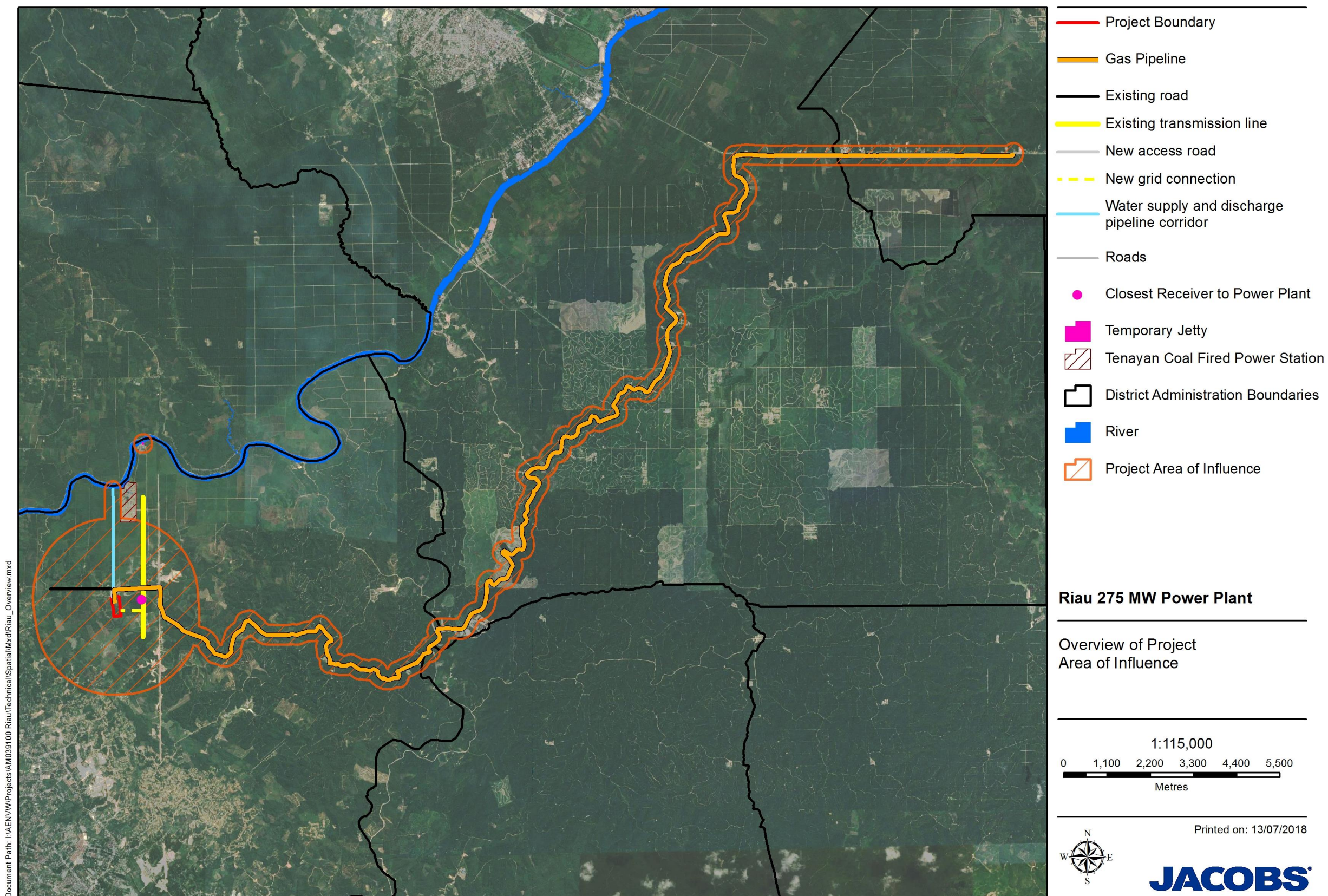


Figure 4.3 : Project Area of Influence

The Project Aol covers the following:

- Power Plant: located near the three communities of Industri Tenayan, Bencah Lesung and Buah Negeri which all form part of the Tenayan Raya Sub-District;
- Temporary jetty: located in the Industri Tenayan administrative area and adjacent to the Tebing Tinggi Okura (hereon referred to as Okura Village) settlement located across the Siak River within the Rumbai Pesisir Sub-District; and
- Gas pipeline: located near the following:
 - Melebung Village in Tenayan Raya Sub-District and part of Pekanbaru City District;
 - The villages of Tualang Timur Maredan and Pinang Sebatang located in Tualang Sub-District and part of the Siak Regency District; and
 - Kuala Gasib Village located in Koto Gasib Sub-District and part of the Siak Regency District.
- Water and wastewater pipeline – located near the three communities of Industri Tenayan, Bencah Lesung and Buah Negeri which all form part of the Tenayan Raya Sub-District, linear pipeline corridor runs north to south between the power plant and the Siak River;
- Transmission line (new connection) – located near the three communities of Industri Tenayan, Bencah Lesung and Buah Negeri which all form part of the Tenayan Raya Sub-District, 750m linear connection running east to west direction from the project to the existing transmission line to the east of the power plant.

4.4 Land Use, Planning and Development

This section outlines land use and development intentions of Pekanbaru City and the Siak Regency as outlined in local government and city planning document.

The Indonesian regulations for land tenure and acquisition are listed earlier in Section 2.2. In addition, the process to investigate land ownership, tenure, and purchase is explained later in Section 6.2. Further detailed information on the Power Plant and Off-Site land requirements are detailed in ESIA Volume 1: Introduction Tables 3.1 and 3.2.

4.4.1 Pekanbaru City

In accordance with local government terminology land use in the City of Pekanbaru can be divided into two main categories: developed areas and non-developed areas. Of the total 'area' in the City of Pekanbaru around 23.55% or about 63,226 ha (632.26 km²) consists of residential (73.29%), industrial (12.05%) and commercial (4.47%) land with the remainder of the land being plantations, forests, agriculture and undeveloped land.

In the category 'nondeveloped land', 24,733.49 ha is classified as brush and scrub and 18,372.33 ha is classified as plantation. This plantation land is mostly located in the northern area of Pekanbaru, which is in the Rumbai, Rumbai Pesisir and Tenayan Raya Sub-Districts. Based on BAPPEDA (Planning and Development Agency) data in Pekanbaru, land use in Tenayan Raya Sub-District covers only 10% or only 17,129 km². This is similar to the other two Sub-Districts of Rumbai and Rumbai Pesisir. Based on these findings, the city council plans to relocate development from the city centre, (which is already very developed), to these three areas. Plans are underway for a new economic centre in Tenayan Raya and a tourism centre in Rumbai.

In relation to the above data, the planned development of the Industri Tenayan administrative area (KIT) and the Pekanbaru government office complex is to be located in the undeveloped areas which is currently plantation and scrub. -, Industri Tenayan and Buah Negeri kelurahans have been chosen as the most suitable locations to match the development needs required for the industrial and office uses

The KIT development plan was established from the General Plan of Spatial Planning (RUTR) Pekanbaru 1991 - 2015. The KIT development Plan was reinforced by Pekanbaru's Mayor's Decree No. 650/13-WK / 1999, which stipulated that the area allocated in Industri Tenayan is 1,550 ha. The KIT Master Plan was developed in 2001. At the initial stage of the KIT Master Plan, only 360 ha was scheduled to be developed with land acquisition of 266 ha in 2002 which we understand is primarily owned by the government. The only industrial development to date is the 2 x 110 MW Tenayan CFPP which utilised 40 ha of land and has been in use since 2013. In the near future, the construction of a container terminal and central market with an area of 14 ha will begin.

Pekanbaru City has turned over KIT management to Sarana Pembangunan Pekanbaru (SPP) Company. The proposed KIT land is currently utilised as palm oil plantation. The CCPP project is located outside of Tenayan Industrial Area (KIT) that will be under management of Sarana Pembangunan Pekanbaru. However, it is still located in Industri Tenayan Sub District (Kelurahan) Administrative area, in which the area has been designated as an industrial area based on the draft of Spatial/Zoning Planning of Pekanbaru City.

Table 4.1 provides a breakdown of land allocated for plantations in Pekanbaru City.

Table 4.1 : Land Allocated for Plantations by Commodity in Pekanbaru City (2007)

No	District / Kecamatan	Area Size by Type of Plant (ha)*			
		Coconut	Palm oil	Rubber	Cane
1	Pekanbaru Kota	0	0	0	0
2	Sail	0	0	0	0
3	Sukajadi	0	0	0	0
4	Lima Puluh	0	0	0	0
5	Senapelan	0	0	0	0
6	Bukit Raya	158.45	14.91	0	0.96
7	Marpoyan Damai	42.39	10.51	0	0.80
8	Payung Sekaki	17.50	26.59	0	0
9	Tampan	26.45	15.01	1.50	17.77
10	Rumbai	145.49	1,531.60	0	0
11	Rumbai Pesisir	146.67	5,410.50	30.41	6.91
12	Tenayan Raya	429.01	2,191.87	39.87	0
	Pekanbaru	965.69	9,200.99	71.78	29.38

Source: Survey of Agriculture and Estate Crops Office Pekanbaru (2007)

*Area is aggregate not overlay

Based on the data presented above approximately 90% of the land allocated for plantations is located in Rumbai Pesisir, Tenayan Raya and Rumbai Sub-Districts. The most widely planted commodity in these three districts is palm oil. Particularly in Tenayan Raya district, in addition to plantation crops, there are also lots of cultivated land for horticulture, namely, vegetables and fruits (annual and seasonal). According to the same data, there is an area of 118.12 ha for cassava and corn, 15 ha for vegetable crops and 565.32 for fruit crops in Pekanbaru City. Then there are also 53.92 ha of land for cattle, goats, buffaloes, pigs and poultry farms, though most of the land is for raising cattle in Pekanbaru City. For fisheries, there is 3.4 ha of land used for catfish cultivation ponds in Pekanbaru City.

From the baseline survey results and interviews in the three village within the study area, it can be seen that palm oil plantations are found in the Industri Tenayan and Tuah Negeri administrative areas. Likewise, farmland and livestock are found in the Industri Tenayan and Tuah Negeri administrative areas. In the Bencah Lesung administrative area there is very little land available for plantations and agricultural land since most of it is allocated for settlements. In addition, in these three villages, land is used for the brick industry, on average between 200 - 300 m² which is spread out in residential areas, the majority of which is in Tuah Negeri.

In Rumbai Pesisir Sub-District, the number of palm oil plantations has more than doubled compared to the Tenayan Raya Sub-District. On the other hand, Rumbai Pesisir Sub-District has less coconut plantation and rubber area but more sugarcane area. Okura Village have more rubber than palm-oil plantation areas and many of the villagers also grow fruits.

4.4.2 Siak Regency

The principal oil field in Central Sumatra is found within the Siak Regency. The main basin is Minas Field, which was discovered in 1944 by the Japanese army and the first production was conducted in 1952, with total reserves estimated at 2 billion barrels. The production zone is estimated to be 28 km x 10 km with a depth of 2,000 ft – 2,600 ft. The number of production wells is about 345, including eight dry wells and 47 water injection wells. The total field production was 350,000 barrels per day. However, throughout the first quarter of 2014, oil production had reached 230,170 barrels per day (Tempo Magazine, 8 July 2017).

Other than oil fields, approximately 33.7% of the land in the Siak Regency is categorised in the spatial plan as 'Other Utilization Area' (Areal Penggunaan Lain). The approximate remaining land use is as follows:

- 23.1% is categorised as state forest;
- 143,375.85 ha (20.9%) is categorised as plantation;
- 133,022.95 ha (19.4%) is not cultivated.

Currently, production forest areas included in the Siak Forest Management Unit and used for logging activities cover an area of 495,000 ha.

There are five important commodities for Siak Regency which include: palm oil, rubber, sago, coconut and cacao, see Table 4.2 below. It is important to note that Siak Regency data from 2014 stated that this regency has natural areas of peat, comprising up to 50% in all district areas, with a total coverage of 459,193 ha. Approximately 299,278 ha of this area has more than 3 m of peat depth (BPS Kab Siak, 2016; Pemda Siak, 2016).

Table 4.2 : Agricultural / Forest Commodities in Siak Regency

Commodity	2011 (ha)	2014 (ha)	2015 (ha)
Palm Oil	237,043	287,331	288,362
Rubber	13,851	15,768	15,477
Sago	11,758	11,522	10,150
Coconut	1,605	1,657	1,628
Cacao	61	66	54

Source: Forestry and Plantation Sector of Siak Regency (2016)

Palm oil covers the largest area, from 237,043 ha in 2011 to 288,362 ha in 2015. Rubber has been increasing from 2011 whilst sago, coconut and cacao areas have been in decline.

In relation to Project land use, the proposed power plant area is located in a palm oil plantation and villages along the gas pipeline route consist of significant palm oil plantation areas, especially in Melebung Village. Most of this Melebung Village area is in palm oil plantations managed mostly by companies and some are managed privately.

4.5 Social Organisation

Every village or Kelurahan has a village head or Kelurahan Head. Each village receives funds from the Regency and central government budget. The amount of village funds from the central government depends on the number of the people, level of poverty, the number of poor people, the distance of the village to the regency capital, and other factors.

The villagers have a yearly meeting to decide the agreed allocation of funds by involving all groups and factions. The result of the meeting will decide how the fund will be used.

The village or Kelurahan headman is assisted by the sub-village headman and Rural Government Board that consists of a village council the members of which are elected by the people.

There are also prominent village figures that are respected by the community. They are religious figures, and ethnic figures. The youth also often have their own organisation.

The female villagers have an organisation called PKK (Perkumpulan Kesejahteraan Keluarga / The Association for Family Welfare). This organisation deals with health, sanitation, education and other aspects. The Muslim women usually gather once a week for a prayer (wirid). The catholic women have a group named 'Wanita Katolik' ('Catholic Women') and the Protestant women have an organisation that is named 'The social organisation of Women'.

4.6 Demographic Overview

4.6.1 Population and Growth

Outlined in Table 4.3 below is a demographic overview of Pekanbaru City and Siak Regency and their Sub-Districts.

Table 4.3 : Demographic Overview of Pekanbaru City and Siak Regency

Area	Coverage Areas (km ²)	Total Population	Density	Male	Female	Total Households
Pekanbaru City	632.26	1,064,556	1.684	546,400	518,166	253,533
Tenayan Raya Sub-District	171.27	158,519	926	81,777	16,742	36,742
Siak Regency	8,556.09	453,052	529	232,553	220,499	NA
Tualang Sub-District	383.97	124,894	325	64,536	60,358	28,313
Koto Gasib Sub-District	702.7	22,059	31	11,230	10,829	5,323

Source: BPS Kota Pekanbaru (2017)

As outlined in Table 4.3 above, Siak Regency is about 13 times larger than Pekanbaru City. However, the the population in Pekanbaru City is much higher than Siak Regency (more than 100% total population of Siak Regency).

In general, the female population is lower when compared to the male population. However, the difference is not significant at the Regency and Sub-District level. The number of the households in Pekanbaru City are about 253,533 households with an average of four members in every household. Data is not available regarding the number of households in Siak Regency.

Among all the affected Sub-Districts, Koto Gasib Sub-District has the largest area (702.7 km²) compared to Tualang Sub-District (383.97 km²) and Industri Tenayan Sub-District (171.27 km²). Tenayan Raya Sub-District has the highest number of households (36,742 households) and population (158,519 people) compared to Koto Gasib which has only 5,323 households and 22,059 people.

4.6.2 Population Composition

The population composition for the nine villages / kelurahans within the Project Aol area based on gender according to Pekanbaru City and Siak Regency statistics office is presented in Table 4.4 below. The table shows administrative area and villages based on their Sub-District, coverage area in km², sex, its total population, including density/km² and number of households.

Table 4.4 : Population Composition for Kelurahan and Villages within Project Aol

Sub-District / District	Kelurahan / Village	Coverage Area (km ²)	Total Population			Density per km ²	Total Households
			Male	Female	Total		
Tenayan Raya / Pekanbaru City	Industri Tenayan	24.54	2,223	2,133	4,356	178	1,124
	Bencah Lesung	19.01	1,068	1,127	2,195	115	572
	Tuah Negeri	10.1	5,180	5,197	10,377	1,027	2,544
Rumbai Pesisir / Pekanbaru City	Tebing Tinggi Okura	136.79	2,950	2,482	5,432	40	1,690
Tenayan Raya / Pekanbaru City	Melebung	36.67	451	383	834	23	151
Tualang / Siak Regency	Maredan	145.25	1,762	1,689	3,451	24	852
	Tualang Timur	9.98	3,021	2,716	5,737	575	1,637
	Pinang Sebatang	40.88	2,250	1,700	3,950	97	1,130
Koto Gasib / Siak Regency	Kuala Gasib	85.2	998	890	1,888	22	449

As shown in the table above, within the nine villages, the Tuah Negeri administrative area has the highest population with 10,377 inhabitants. Melebung Village located in the middle of the palm oil plantation has the smallest population with 834 inhabitants. Maredan Village has the largest area size (145.2 km²) followed by the old village of Okura located across the Siak River from the Tenayan CFPP.

The villages with the smallest land area have the highest number of families and population. Among the nine villages, Bencah Lesung and Tuah Negeri have the population with the largest number of females. Tuah Negeri is the most densely populated area followed by Tualang Timur Village and Industri Tenayan administrative area.

An overview of the population age group with Pekanbaru City and Siak Regency is presented in Table 4.5 below.

Table 4.5 : Population Age Group within Pekanbaru City and Siak Regency

Age Group	Pekanbaru City 2017	Siak Regency 2016
0 – 4	109,012	40,052
5 – 9	94,233	55,345
10 – 14	87,316	54,867
15 – 19	101,860	44,669
20 – 24	123,587	41,373
25 – 29	101,873	46,834
30 – 34	91,377	50,180
35 – 39	86,621	44,577
40 – 44	76,456	38,475
45 – 49	62,326	28,058
50 – 54	46,609	17,658
55 – 59	34,521	11,742
60 – 64	20,597	7,729
65+	28,128	10,408
TOTAL	1,064,566	453,052

Based on the data shown above the largest population group in Pekanbaru City and Siak Regency is generally the young between the age groups of 0-4 years old to 30-34 years old. In both areas, the population decreases beyond the group of 35.

4.7 Religion

No statistical data is available of religious groups at Pekanbaru City or Siak Regency level. However, there is statistical data for some of the villages within the Aol as detailed in Table 4.6 below.

Table 4.6 : Religious Composition of Population some Villages / Kelurahan within Project Aol

Kelurahan / Village	Religious Composition of Population						Total
	Islam	Catholic	Protestant	Hindu	Buddhist	Taois / Confucism	
Industri Tenayan	594	641	320	534	64	42	2,195
Meredan	2,246	55	1,125				3,426
Pinang Sebatang	2,740	455	769		26		3,990
Kuala Gasib	1,999	10	304				2,313

As outlined in the table above, Islam is the most widely practiced religion in all villages, followed by Catholic, Protestant, Hindu, Buddhist and Taoism/Confucism. In some areas of Siak Regency, Bahai is also practiced. Pinang Sebatang and Kuala Gasib villages have more Protestants than Catholics.

There are 651 mosques in Pekanbaru and 449 small mosques (musholla). Also there are 153 Protestant churches and 10 Catholic churches. In addition, Pekanbaru City has 59 Confucius temples (kelenteng) and Vihara for Buddhists (Bappeda, 2015). There is no data available on religion for Siak Regency.

4.8 Ethnicity and Language

No statistical data on ethnic groups in Pekanbaru City or Siak Regency is available. One of the original native ethnic groups in the project area is the Malay. Near the power plant, there are other ethnic groups such as the Jawanese and the Batak from North Sumatra also the Minang from West Sumatra and the Nias ethnic group who came after the tsunami in 2004. In addition, a small Chinese population have lived in this region for generations, mostly in Pekanbaru City and Selat Panjang Sub-District.

Along the gas pipeline route there are numerous migrants from North Sumatra (The Bataks or the Jawanese) and some from West Sumatra. A small proportion of the population come from other areas of Indonesia. Along the gas pipeline route, there are also Malays from Gasib Village. Some of the Gasib people reported that they relocated from Johor in Malaysia a hundred years ago. The Malay ethnic group are living around the temporary jetty area and have lived there for generations. In Melebung there are Ambonese and Nias people.

Bahasa Indonesia is commonly spoken in Riau, including Pekanbaru, but each ethnic group has their own language.

4.9 Gender

As noted in Section 4.5.2, there are approximately 10% more males than females in Pekanbaru City, but there are four Sub-Districts that have more females compared to males: Sail, Lima Puluh, and Payung Sekaki and Senapelan.

It is important to note that there is a decreased rate of violence against women and children from 2011 compared to 2016 as indicated by Pekanbaru's mayor in the LKPJ (Performance Accountability Report, 2016).

All Sub-District heads are male and almost all heads of the administrative areas are male. The head of Tenayan Sub-District is also a male. There is only one female administrative area head, who used to be a community facilitator. In public consultations in relation to the Project, this leader called on the company to ensure that women are employed at the power plant.

Female parliament members make up 20% of Pekanbaru's legislature (DPRD) and in Siak Regency, only 2.5% of the DPRD members are female.

As this information suggests, most decision-makers in the community are male, which creates situations where women's needs and aspirations are often neglected. In order to ensure appropriate representation and opinion for the Project, consultation between male and female was separated.

Table 4.7 below provides an overview of Riau Province Districts gender development index. Gender Development Index (GDI) measures gender gaps in human development achievements by accounting for disparities between women and men in three basic dimensions of human development—health, knowledge and living standards using the same component indicators as in the GDI. (<http://hdr.undp.org/en/content/gender-development-index-gdi>).

Table 4.7 : Gender Development Index within Riau Province Districts (2014)

District	Gender Development Index 2014
Kuantan Singingi	87.81
Indragiri Hulu	86.27
Indragiri Hilir	80.99
Pelalawan	87.83
Siak	89.3
Kampar	88.78
Rokan Hulu	79.36
Bengkalis	88.86
Rokan Hilir	84.3
Kepulauan Meranti	84.37
Pekanbaru	91.83
Dumai	89.35
Riau	87.62

Source: BPS Riau (2017)

The table above shows that Pekanbaru City has the highest GDI Index (91.83) and Siak District is the third highest in Riau Province (89.3).

Some of the villagers within the Project AoI come from West Sumatra and are referred to as the Minang. Some Minang communities are matrilineal means tracing descent through maternal line. The Minang women are famous as good traders.

4.10 Indigenous People

IFC Performance Standard 7 recognises that Indigenous Peoples, as social groups with identities that are distinct from mainstream groups in national societies, are often among the most marginalised and vulnerable segments of the population. In many cases, their economic, social, and legal status limits their capacity to defend their rights to, and interests in, lands and natural and cultural resources, and may restrict their ability to participate in and benefit from development. Indigenous Peoples are particularly vulnerable if their lands and resources are transformed, encroached upon, or significantly degraded. Their languages, cultures, religions, spiritual beliefs, and institutions may also come under threat. As a consequence, Indigenous Peoples may be more vulnerable to the adverse impacts associated with project development than non-indigenous communities. This vulnerability may include loss of identity, culture, and natural resource-based livelihoods, as well as exposure to impoverishment and diseases.

Moreover, Performance Standard 7 defines the term “Indigenous Peoples” as referring to a distinct social and cultural group possessing the following characteristics in varying degrees:

- Criteria 1: Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
- Criteria 2: Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- Criteria 3: Customary cultural, economic, social, or political institutions that are separate from those of the mainstream society or culture; or

- Criteria 4: A distinct language or dialect, often different from the official language or languages of the country or region in which they reside.

ADB Criteria on indigenous peoples are similar to the IFC Criteria. ADB Safeguards defines “Indigenous Peoples” in a generic sense to refer to a distinct, vulnerable, social, and cultural group possessing the above four characteristics in varying degrees. ADB employs the term ‘vulnerable’ which is not found in the IFC definition

The descriptive incoherence of the term indigenous in Asia refers less to a fixed group of people than to the sentiment which emerges in the course of struggles over territories, resources and cultural respect. Thus, the term ‘indigenous peoples’ presents difficulties when it is applied to the Indonesian context. Indonesia has more than 350 different ethnic groups who consider themselves ‘original’ to Indonesia. They have their own self-identification, their own language and their own territory and many of them are already integrated in the mainstream economy and political system.

Instead, the term ‘*masyarakat adat*’ (customary communities) or simply ‘adat’, in Indonesia is preferred which refers to a broader sense of customary norms and rules, that guide individuals conduct. Adat can include forms of governance such as local and traditional laws and dispute systems. The term ‘*masyarakat adat*’ has more appropriate application with groups that need protection of their livelihoods, norms, cultures and values.

The *masyarakat adat* in Riau Province consist of the Sakai, the Talang Mamak, and the Akit peoples (sea gypsies). The Talang Mamak live in the highland areas of Siberida District and the Sakai live in Dumai District and the Akit people live in Riau Islands. In the past, their livelihoods were based on hunting and gathering. This is still the case with some groups of the Talang Mamak. The Sakai have lost their forest and some of them work on oil palm plantations as labourers. The Akit still practice their traditional modes of living. There are no *masyarakat adat* residing in the Project Aol.

4.10.1 Ethnic Groups in the Project Area of Influence

Consultation and interviews were held with traditional village leaders, Administrative Heads of villages and through interviews and surveys (see section 4.1 of the SIA). There are four predominant ethnic groups in Industri Tenayan and Pinang Sebatang, namely: Malay, Javanese, Minang and Batak. Interviews and household survey data conducted in these villages confirmed secondary data, as well as additional findings into the existence of the Batin people living in the project area. The majority ethnic group in Industri Tenayan was Javanese; Malay in Pinang Sebatang and Kuala Gasib.

Table 4.8 : Population based on ethnicity POI villages

Village / Desa	Ethnicity						
Industri Tenayan	Malay	Javanese	Minang	Batak	Banjar	Sunda	Total
	594	641	320	534	64	42	2,195
Pinang Sebatang	Malay	Javanese	Minang	Batak	Aceh	Sunda	
	1,828	484	622	1,041	12	3	3,990
Kuala Gasib	Malay	Javanese	Minang	Batak	Nias		
	739	725	33	467	14		1,978

Source: Monograph Industri Tenayan, Pinang Sebatang and Kuala Gasib, (2017)

4.10.2 Malay (including Batak)

In the Project area, the majority of the population are Malay. The Malay predominately reside in villages beside the Siak River. Correspondingly their livelihoods are farmers or river fishermen.

Oyvind Sandbukt an anthropologist who studied and worked in Riau for several years, noted the following about the Malay/Melayu people²:

“The Malay ethnic identity is a highly generalized one based on homogenous language and religious adherence. Become a Muslim in Malay equals to “masuk Melayu.” They have a kind of bilateral kinship systems. Malay is a lingua franca that may have limited or suppressed language differentiation. Interlinked coastal chieftainships, which morphed in kingdoms, fed on both local trade and on inter Asian trade through the Malacca strait and greatly contributed to the homogenization of language.”

The AMAN³ (Aliansi Masyarakat Adat Nusantara, which translates as the Indigenous Peoples' Alliance of the Archipelago) customary map (www.aman.or.id) illustrates there are no *adat* rights in Pekanbaru City, or in the Okura and the Koto Gasib Village areas.

4.10.3 Batin

During the Siak kingdom period (1729-1949) governance rights were awarded to certain families by the Sultans. Households who received the mandate are called ‘the Batin’. The baseline social survey, indicates after the Siak kingdom surrendered its governance power to the Government of Indonesia (to become Siak District), the Batin Tenayan who lived under this jurisdiction effectively abrogated their customary rights – aligning to mainstream governance structures. Hence land ownership structures reflect the change in user rights, moving from usufruct to titled. within the forested areas is now managed by the central government departments.

Consultation was undertaken in all villages and the socioeconomic surveys obtained information from all ethnic groups including the Batin. From institutional and village level interviews it is apparent that despite this revocation of rights, interviews conducted during the baseline surveys indicate that some present day Batin Tenayan consider they retain their inherited mandate (NBC social survey, 2018). For instance, one claimant is taking legal action to prove the validity of his customary claims to land in the Industri Tenayan village. Yet conversely, the same claimant appears to be selling and purchasing land – contrary to the use of customary land. However, Pekanbaru City Government does not recognise customary claims for land in the region. Furthermore, the Head of Tenayan Administrative Area stated that there are no *masyarakat adat* claims on the power plant site location.

4.10.4 Javanese and Batak People

Those ethnic groups not living adjacent to river are generally ethnic Javanese or ethnically Batak people. Their source of livelihood is derived from labouring, farming, market gardening or as traders. Javanese and Batak people migrated as recently as 1980 from North Sumatra to work for the oil palm plantations. Javanese migrants were employed in forestry, by felling the trees allowed for plantation to exist. The second wave of Javanese and Batak migrants occurred in 1997 as additional labours where required to work in the plantation.

Most Javanese and Batak own their own land and are employed in activities outside of the plantation such as labourers or attempting small businesses along the roadside. Both ethnic groups are also work in the informal sector. Nowadays, both Javanese and Batak are dissipated living throughout the villages of the Project Aol, such as Kuala Gasib, Pinang Sebatang, Tualang Timur (Okura) and Meredan.

4.10.5 Minang People

Only a small number of ethnic Minang reside in the project areas, 320 in Industri Tenyan; 622 in Pinang Sebatang and 33 in Kuala Gasib. The only village where the Minang do not live is Meredan. The ethnic Minang's

² Per comm, February 2018

³ AMAN is advocacy organisation which asserts cultural distinctiveness as the grounds for securing rights to territories

livelihood derive from being traders, or conducting entrepreneurial or farming activities. Civil servants and private employees are often ethnically Minang or Malay.

4.10.6 Nias and Ambonese People

Ethnic Nias live in Melebung (household surveys reveal only 7% of the total population) and Meredan (household surveys indicate 3%) where they have their own settlement and residential complex, which is governed by a neighbourhood head. A small number of ethnic Ambonese exist in only one village, Melebung (households' surveys reveal only 7% of the total population).

The Nias people migrated from Nias island in the early 2000s, as government policy allowed plantation companies to import (low cost) workers from outside the region. The Nias and Ambonese predominately work in the plantation and are involved with planting, cultivating crops, harvesting or as arborists. The Nias are also employed as seasonal workers. Such type of employment is considered informal as they work without any formal contracts.

4.10.7 Kuala Gasib Village (project affected village)

The people living in Kuala Gasib village are 40% ethnically Javanese, 30% ethnically Malay; 23% Batak and 7% Minang. These ethnic groups correspond to the ethnic composition of all the project affected villages, except Meredan village, where no ethnic Minang exist. Land in Kuala Gasib is owned by Siak District. Some of the gas pipeline route is located in the Kuala Gasib Village administrative area, which was once part of the Gasib kingdom.

Table 4.9 below provides consideration of the cultural groups identified against IFC Performance Standard 7 criteria.

Table 4.9 : Analysis of Cultural Groups against IFC Performance Standards 7 Criteria

IFC Performance Standard 7 Criteria	Batin Tenayan	Java & Batak	Minanag	Nias & Ambonese
Criteria 1: Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others.	There is no formal recognition by regional government of this group. Self-identification as Batin Tenayan, is recognised only informally by descendants.	Ethnic Javanese are the largest ethnic group living in Indonesia. Ethnic Batak: second highest ethnic population of Batak are located in Riau (0.7m persons)	Ethnic Minanag profess to Islam with allowances for 'adat'.	Ethnic Nias are from Nias Island. In the project area they are recognised as economic migrants. Ambonese are Melanesian of Austronesian-Papuan origin.
Criteria 2: Distinct language or dialect	Language is similar to Malay people (Malayu language).	Java: Second most spoken language in Indonesia. Batak: 14 th most spoken language in Indonesia. Predominantly spoken in North Sumatra	5 th most commonly spoken language in Indonesia. Second highest concentration of speakers reside in Riau province.	Nias: spoken in Nias Island and North Sumatra. Often used interchangeably with Bhasa Ambonese Malay is a creole language spoken in Maluku Island.
Criteria 3: Collective attachment to geographically distinct habitats or ancestral	Batin groups abrogated their collective attachment to land in the 1940s.	Both groups are recent economic migrants who moved for the plantation.	Attachment to land is in West Sumatra.	Nias people are recent (2002) migrants arriving from Nias Island.

IFC Performance Standard 7 Criteria	Batin Tenayan	Java & Batak	Minanag	Nias & Ambonese
territories in the project areas and to the natural resources in these habitats and territories and in the project	Batins' have natural resource rights to honey from the trees			Ambonese are originally from Maluku Island.
Criteria 4: Customary cultural, economic or political institutions are separate from those of the mainstream society or culture	Batin political and economic structures have been assimilated into Indonesian forms of mainstream governance. Cultural Batin functions exist notably for ceremonial purposes, but Batin institutions do not exist	Both groups operate within the mainstream institutions	There is no indication that institutions within the AoI remain separate from the mainstream structure.	

Conclusion

The Batin Tenayan, and those villagers living in Koto Gasib and Okura have not been disadvantaged by the state policy nor do they live in an isolated area. Their culture is part of the majority Malay culture. Ethnic diversity exists in each project affected village. In this respect, these populations do not satisfy the criterion above as to be classified as "Indigenous people".

As the sociocultural distinctiveness of these groups is ethnically heterogeneous in the project area (as evidenced from the baseline survey work), the degree to which these social cultural and linguistic characteristics exist, does not warrant PS 7 to be triggered. Furthermore, national policy is not prescriptive in recognising a unique status for the groups, including Batin Tenayan. The levels of vulnerability are akin to the surrounding populous, thus again signifying their non-Indigenous People status. In this respect, the ethnic populations residing in the project area do not satisfy the criterion above as to be classified as "Indigenous People" and therefore are not assessed in this ESIA further.

4.11 Ecosystem Services

Ecosystem services are defined by the IFC Performance Standards (2012) as the benefits that people, including businesses, derive from ecosystems. They are organised into four types: (1) provisioning services (the products people obtain from ecosystems); (2) regulating services (the benefits people obtain from the regulation of ecosystem processes); (3) cultural services (the nonmaterial benefits people obtain from ecosystems); and (4) supporting services (the natural processes that maintain the other services).

The transport of heavy equipment and material for the Project is anticipated to be via the Siak River. The Siak River is also used by the Okura villagers for transport and for food (principally fish). Similarly, rivers that are crossed by the gas pipeline within the Siak Regency are used by villagers for fishing and boat transport and other needs such as bathing and washing clothes.

Other villagers within Kuala Gasib, Meredan, Pinang Sebatang, Melebung also use rivers for various purposes. In all these villages, many people use wells for drinking water, bathing and washing. Villagers along the river and at riparian areas develop charcoal from local trees for cooking and drying fish.

In addition, villagers cultivate land for their livelihood. Ecosystem shapes peoples culture. Many of the poems and songs are derived from nature and many stories are related to trees and animals from the forests. Their canoes, paddles and houses are from trees.

Villagers along the gas pipeline (Kuala Gasib, Meredan, Tualang Timur and Pinang Sebatang) also plant medicinal plants such as ginger, turmeric, temulawak, mostly within the confines of their own properties. A study of medicinal plants in Situgal Village close to Tesso Nilo National Park, Riau Province have found more than 500 types of medicinal plants. The Project affected villages are noted to have previously lost medicinal plants in the forest, however, as noted earlier, planting practices occurs within properties and not anticipated to be abundant in the existing infrastructure corridors.

4.12 Economic Profile

Understanding the influence of various sectors in the Project area will assist in identifying potential community development projects which could shape the Company Social Responsibility Program. An overview of the economic profile of Pekanbaru City is detailed in Table 4.10 below.

Table 4.10 : Overview of the Gross Regional Domestic Product by Industry within Pekanbaru City

Sectors	Gross Regional Domestic Product (GRDP) at Current Prices by Industry in Pekanbaru, 2010 – 2016 (Percentage)						
	2010	2011	2012	2013	2014	2015	2016
Agriculture, Forestry and Fisheries	1.76	1.73	1.66	1.69	1.57	1.6	1.63
Mining and Quarrying	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Processing Industry	20.86	20.92	20.6	20.29	18.98	19.97	19.93
Provision of Electricity and Gas	0.22	0.2	0.17	0.16	0.16	0.18	0.2
Water Supply, Waste Management, Waste and Recycling	0.03	0.02	0.02	0.02	0.02	0.02	0.02
Construction	28.93	29.02	28.8	29.58	29.98	29.6	29.7
Wholesale and Retail: Repair of Cars and Motorcycles	28.45	28.51	28.85	28.32	30.01	29.31	29.6
Transportation and Warehousing	2.41	2.33	2.38	2.47	2.43	2.52	2.54
Provision of accommodation, foods & drinks	1.81	1.84	1.98	2.09	2.39	2.17	2.1
Information and Communication	2.6	2.45	2.46	2.32	2.14	2.17	2.1
Financial Services and Insurance	3.25	3.4	3.63	3.7	3.61	3.55	3.56
Real Estate	2.88	2.93	2.91	2.91	2.76	2.87	2.8
Company Services	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Administration, Defence and Compulsory Social Security	4.37	4.18	4.22	4.08	3.46	3.29	3.07
Education services	1.16	1.14	1.05	1.04	1.11	1.14	1.12
Health Services and Social Activities	0.41	0.42	0.42	0.44	0.45	0.49	0.48

Sectors	Gross Regional Domestic Product (GRDP) at Current Prices by Industry in Pekanbaru, 2010 – 2016 (Percentage)						
	2010	2011	2012	2013	2014	2015	2016
Other services	0.84	0.87	0.81	0.85	0.9	1.08	1.1
Gross Domestic Regional Product	100	100	100	100	100	100	100

Source: BPS Pekanbaru City, 2017

Construction, wholesale and retail, and processing industries are the third largest sectors contributing to GRDP in Pekanbaru City. Between 2010-2016, growth in the following sectors was in decline: agriculture –forestry and fisheries, processing industry, real estate, information and communication, administration-defence and compulsory social security, and education services. In contrast, construction, transportation and warehousing, health services and other services are slowly increasing in GRDP. Company services, mining and quarrying are stable whilst electricity and gas fluctuates. The construction and wholesale and retail sectors are the highest contributors to Pekanbaru's GRDP. An overview of the economic profile of Siak Regency is detailed in Table 4.11 below.

Table 4.11 : Overview of the Gross Regional Domestic Product by Industry within Siak Regency

Sectors	Gross Regional Domestic Product (GRDP) at Current Prices by Industry in Pekanbaru, 2011 – 2016 (Percentage)					
	2011	2012	2013	2014	2015	2016
Agriculture, Forestry and Fisheries	15.42	14.05	14.15	15.04	17.27	18.46
Mining and Quarrying	47.15	53.18	51.49	48.01	38.89	36.5
Processing Industry	30.72	26.42	27.49	29.4	34.82	35.38
Provision of Electricity and Gas	0	0	0	0	0.01	0.01
Water Supply, Waste Management, Waste and Recycling	0	0	0	0	0	0
Construction	3.43	3.11	3.35	3.48	4.17	4.55
Wholesale and Retail: Repair of Cars and Motorcycles	1.16	1.13	1.24	1.58	1.83	1.98
Transportation and Warehousing	0.07	0.07	0.07	0.08	0.1	0.1
Provision of accommodation, foods & drinks	0.02	0.03	0.03	0.04	0.04	0.05
Information and Communication	0.14	0.14	0.15	0.16	0.2	0.2
Financial Services and Insurance	0.18	0.24	0.27	0.32	0.34	0.35
Real Estate	0.25	0.27	0.29	0.32	0.39	0.41
Company Services	0	0	0	0	0.01	0.01
Administration, Defense and Compulsory Social Security	0.64	0.62	0.64	0.65	0.78	0.78
Education services	0.38	0.34	0.36	0.4	0.48	0.5
Health Services and Social Activities	0.12	0.12	0.12	0.14	0.19	0.19
Other services	0.31	0.28	0.32	0.38	0.48	0.52
Gross Domestic Regional Product	100	100	100	100	100	100

In contrast to Pekanbaru City, Siak Regency's three biggest sectors that contribute to the GRDP are: mining and drilling, processing industry and agriculture, forestry and fisheries.

Mining and drilling growth sectors are on a downward trend, whereas in the transportation and warehousing sector, education and health services sectors, information and communication sectors, growth is gradually increasing in GRDP.

4.12.1 Livelihood of Villages within Aol

In general, the livelihood of the villagers varies from one village to another, and each family tends to have a primary and secondary job. Most of the villages along the gas pipeline work as palm oil plantation workers and farmers. Some of the Melayu people tap rubber and fish. In addition, some of the villagers have also opened restaurants, based upon the increased traffic passing their villages. For example, Tualang Timur Village, Kuala Gasib Village, and Pinang Sebatang Village have developed new restaurants. Some of them have also opened a workshop and a few of them work as employees.

The villagers in Melebung Village, which are located in the middle of the palm oil plantation, generally work as fishermen and palm oil plantation workers. The inhabitants of Okura Village, mostly of Malayan origin, generate income from rubber-tapping as their traditional livelihood. Some of their families also plant palm oil. The inhabitants of this village also work as fishermen along the river bank, even though the fish population is decreasing due to the pollution in the river.

The villages near the power plant are close to Pekanbaru City. Most of the villagers work as public servants, private company employees and traders. The villagers of Tuah Negeri and Bencah Lesung make bricks. Some of the villagers have secondary jobs growing fruit such as pineapple, raising cows, pigs and fish. Some of the women also make bricks, open food stalls, raise farm animals and plant spices and vegetables.

Some villagers in Bencah Lesung make tofu and crackers as secondary jobs to support their living. Due to the proximity of the village with Pekanbaru, villagers of Minang and Chinese ethnicities tend to open electronic shops, grocery shops, restaurants and hand phone shops. Some villagers in Industri Tenayan administrative area also grow corn, vegetables and pineapples. Some of them also make bread, while others open small shops and food stalls as secondary jobs. Figure 4.4 below provides an overview of the market at Tualang Timur Village.



Figure 4.4 : Market at Tualang Timur Village (NBC Social Survey Report, 2018)

Income and Expenditure

For the five villages along the gas pipeline route, it is important to understand their economic status. Based on data obtained during the social survey from respondents from the five villages along the gas pipeline route, their income is detailed in Table 4.12 below.

Table 4.12 : Average Income per month for each Household for Villages along the Gas Pipeline Route

Income (IDR)	Village				
	Melebung	Meredan	Pinang Sebatang	Tualang Timur	Kuala Gasib
< 500,000		10%			
500,000 – 1,000,000	3.3%		10%	3.3%	10%
1,000,000 – 2,500,000	80.0%	60%	40%	53.3%	50%
2,500,000 – 5,000,000	10.0%	20%	33%	33.3%	30%
5,000,000 - 10,000,000	6.7%	6.7%	10%	3.3%	10%
> 10,000,000		3.3%	7%	3.3%	
No income				3.3%	
Total	100%	100%	100%	100%	100%

More than 50% of respondents' income in the five villages is between 1,000,000 (USD 72.63) to 5,000,000 (USD 363.17). The lowest income village is Meredan Village with only 10% of respondents having income less than 500,000 (USD 36.31). In contrast, a small proportion of the respondents in Meredan Village, Pinang Sebatang and Tualang Timur Villagers have an income of more than IDR 10,000,000 (USD 720.63). Approximately 3.3% of respondents in Tualang Timur Village have no income.

In relation to the land acquisition process, the villagers with low incomes are most likely those who cannot afford to obtain legal certificate for their properties. This situation needs to be taken into consideration during the negotiation process for the right of way for the gas pipeline construction. The majority of their income which is at poverty level should be put into consideration as well.

Data on expenditure per month for each village along the gas pipeline route was also collected as part of the social survey and is presented in Table 4.13 below.

Table 4.13 : Average Expenditure per month for each Household along Gas Pipeline Route

Expenditure (IDR)	Village				
	Melebung	Meredan	Pinang Sebatang	Tualang Timur	Kuala Gasib
750,00 – 1,000,000	13.3%	6.4%	10%		16.7%
1,100,000 – 2,000,000	50.0%	36.7%	36.7%	36.7%	16.7%
2,100,000 – 3,000,000	23.3%	30.0%	13.3%	26.7%	36.7%
3,100,000 – 4,000,000		10.0%	16.7%	13.3%	10%
4,100,000 – 6,000,000	6.6%		6.6%	3.3%	10%
6,100,000 – 10,000,000	3.3%	6.7%	6.6%	3.3%	3.3%
> 10,000,000		3.3%	3.3%		

Expenditure (IDR)	Village				
	Melebung	Meredan	Pinang Sebatang	Tualang Timur	Kuala Gasib
None	3.3%	3.3%	6.7%	10%	
Total	100%	100%	100%	100%	100%

In line with the income level, more than 50% of the respondents have a monthly expenditure between 1,100,000 (USD 79.89) to 3,000,000 (USD 217.9). The next highest is monthly expenditure between 3,100,000 (USD 225.16) to 4,100,000 (USD 297.83). There is a wealthy group category consisting of around 3.3% of respondents that has expenditure more than 10,000,000 (USD 720.63) per month.

4.13 Educational Profile

There are three types of education providers in Riau Province; 1) state schools, 2) private schools, both of which are under the supervision of the Ministry of Education, and 3) schools under the Ministry of Religious Affairs. The private schools can determine their school fees, however, many of them are also supported financially by the Ministry of Education. The Ministry of Religious Affairs is responsible for schools such as Madrasah, Tsanawiyah and Aliyah. The educational enrolment ratio for Pekanbaru City and Siak Regency is detailed in Table 4.14 below.

Table 4.14 : Net Enrolment Ratio within Siak Regency and Pekanbaru City (2015 – 2017)

District / City	Elementary School / Madrasah			Middle School / Ibtidaiyah			High School / Vocational School		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
Siak Regency	93.03	97.48	100	79.91	78.73	78.33	78.26	71.83	70.89
Pekanbaru City	94.25	95.88	94.5	77.01	70.88	71.93	69.18	70.84	70.51
Riau Province	96.63	96.74	97.08	78.22	78.53	78.87	62.6	62.76	63.02

Source: Accountability Report of Pekanbaru Mayor and Siak District Head (2018)

In general, Siak Regency has a higher net enrolment ratio for elementary school, secondary school and high school compared to Pekanbaru City. The schools in Siak Regency consist of public schools and private schools with some schools under Ministry of Religion.

As detailed in Table 4.14 above, almost all school children are enrolled in elementary school. In contrast, around 20% of middle school students in Siak Regency and 30% in Pekanbaru City did not continue to high school. A similar trend is shown for high school students. Riau Province has a lower net enrolment ratio for high school students than Pekanbaru City and Siak Regency. It is not known why Pekanbaru City educational enrolment is lower at elementary and middle school level compared to other areas in Riau Province.

Data on the number of schools, the number of students and teachers throughout the Tenayan Raya, Koto Gasib and Tualang Sub-Districts where the nine villages within the Project AoI are located can be seen in Table 4.15 below.

Table 4.15 : Number of Schools, Students and Teachers in Sub-Districts of Tenayan Raya, Tualang and Koto Gasib

Sub-District	Elementary	Madrasah	Middle School	Tsanawiyah	High School	Aliyah
Tenayan Raya Sub-District						

Sub-District	Elementary	Madrasah	Middle School	Tsanawiyah	High School	Aliyah
Schools	35	4	2	7	6	4
Students	13,529	951	21	1,689	3,298	1,138
Teachers	636	48	16	140	223	60
Ratio of Students to Teachers (%)	21.27	19.81	1.62	12.06	14.79	18.97
Tualang Sub-District						
Schools	33	4	19	2	12	1
Students	17,226	922	1,534	155	5,712	84
Teachers	806	41	376	18	314	8
Ratio of Students to Teachers (%)	19	12.67	17	9	16	11
Koto Gasib Sub-District						
Schools	18	0	5	3	2	1
Students	3,256	0	938	307	627	74
Teachers	212	0	47	16	42	14
Ratio of Students to Teachers (%)	15	0	10.2	18	14	7

Source: Accountability Report of Pekanbaru Mayor and Siak District Head (2018)

The data presented above shows that Koto Gasib Sub-District has the lowest number of schools, students and teachers. All the Sub-Districts, show a reasonable balance of students to teachers with a ratio of between 1.6 to 19.81%. However, in many cases absence of teachers and head of schools can be an issues in Indonesia. A restricted number of high schools can be a problem if high schools are not well distributed.

Using data from the social survey conducted along the gas pipeline route, Table 4.16 provides an overview of educational facilities for each of the five villages.

Table 4.16 : Educational Facilities for Villages along the Gas Pipeline Route

Villages / Kelurahan	Nursery	Elementary School	Junior High School	High School
Kuala Gasib	2 Puteri Kaca Mayang	1 (state) SDN 01 Kuala Gasib	1 (state)	-
Pinang Sebatang	1	2 (private) SDN	1 (state)	-
Tualang Timur	1	1 (state) SDN 10 Tualang	1 (state) SMPN 02 Tualang	-
Maredan	2	2 (private)	2 (private)	(1 (state))
Melebung	-	1 (state)	-	-

For the five villages along the gas pipeline route, only Maredan Village has a high school facility. Four villages have secondary school facilities and all villages have primary school facilities. With the exception of Melebung Village, all villages have one or two nursery schools. Melebung Village has only one elementary school. The

issue facing the education facilities along the gas pipeline route includes the need for clean water for school sanitation facilities, books for the library and a laboratory to practice their subjects such as physics and chemistry for junior high school students. The schools consist of state and private schools.

The excerpt shown below provides an overview of a woman initiative in developing education programmes in the village of Tualang Timur which is located along the gas pipeline route.

“Building the first school in Tualang Timur Village: from eight students in 1989 to 400 students in 2018

Mrs. Khatanah and her family moved to Tualang Timur Village in 1989. At that time, the population of this village was only 15 households. In 2018, the population has increased into 150 households. Mrs. Khatanah start to run this elementary school from 1990, named SD Negeri 10 Tualang with only eight students and two teachers, Mrs. Khatanah herself and her husband.

Up to February 2018, the school has obtained 400 students and 28 teachers. Eighty percent of students come from the palm oil plantation settlements, mostly the children of palm oil workers. The palm oil plantation company provides a bus for their workers’ children to go to school and return to their homes. This company also assists to renovate the school facilities and to fund some school activities. Most students continue their education to junior high school that is located not very far from the elementary school. This elementary school provides books and uniforms for poor students. The students don’t have to pay any fees to study in this school.

Mrs. Khatanah is proud of SD Negeri 10 Tualang and villagers respect her as a woman who tries to improve education situation in Tualang Timur Village, Siak Regency.”

4.14 Health Profile

Health facilities within Pekanbaru City comprise state-owned and private which include military health services. Pekanbaru City has 21 hospitals, 20 health centres (puskesmas) at city level, 34 health centres at village level including six maternal hospitals and 137 private health clinics. Private health services employ specialist medical doctors, general practitioners, midwives and nurses but not dentists and dental nurses. Siak Regency has only one local hospital and 14 health centres for all Sub-Districts and only the local government as a service provider.

The number and types of health personnel in Pekanbaru City are presented in Table 4.17 below. Total number for Siak Regency is also presented; however, types of personnel are not available.

Table 4.17 : Health Services Personnel within Pekanbaru City and Siak Regency (2015)

Types	Pekanbaru City (2015)				Siak Regency (2015)
	State	Private	Military	Total	Total
Specialist Medical Doctor	111	483	19	613	20
General Practitioner	131	203	23	357	78
Dentist	54	43	11	108	25
Midwives	253	470	36	759	367
Nurses	837	1445	109	2391	509
Dental Nurses	35	10	7	52	29

Source: BPS Pekanbaru City (2015); BPS Siak Regency (2015)

Based on the data presented in the table above, Pekanbaru City in terms of facilities and health personnel, has significantly greater numbers and resources than Siak Regency.

Using Tenayan Raya Sub-District health centre data there are five major reported illnesses in the community including: infection of the upper respiratory system, skin diseases, diarrhoea, hypertension and diabetes. These findings are important in considering possible future company intervention related to CSR or initiatives related to health. The number of cases in 2016 for Tenayan Raya Sub-District for each disease in detailed in Table 4.18 below.

Table 4.18 : Major Illnesses at Tenayan Raya Sub-District Health Centre (2016)

Diseases	Number of Cases
Infection of Upper Respiratory	2,564
Skin diseases	1,045
Diarrhoea	841
Hypertension	428
Diabetes	423

Source: Tenayan Raya Sub-District (2018)

Infection of the upper respiratory system is the most common illness. Skin diseases are most likely related to access and availability of clean water facilities and hypertension and diabetes are likely related to life style choices.

Data collected during the social survey on health facilities, health personnel and diseases/illnesses treated between January and July 2017 for villages with the Project Aol is detailed in Table 4.19 below.

Table 4.19 : Health Facilities, Health Personnel, Type of Diseases/Illnesses and Number of Cases for Villages within Project Aol

Village	Health Facilities	Health Personnel	Type of Disease/Illness and Number of Cases from January – July 2017
Kuala Gasib	1 health clinic, 1 health post	1 midwife, 1 nurse	Flu (358), Infection of, Gastritis (236), Rheumatic (206), trauma (161), hypertension (115), diarrhoea (90), dysentery (45).
Meredan	1 health clinic, 1 health post, 1 health centre (posyandu)	6 midwives	Flu (624), skin disease (270), trauma (144), ISPA (101), gastritis (100), diarrhoea (59), hypertension (38) and eyes (29).
Melebung	1 health clinic	1 midwife	ISPA (350), hypertension (255), diabetes (154), fever (97), skin infection (93), gastritis (86), pulpae (72), dysentery (68), diarrhoea (66), dermatosis (553).
Pinang Sebatang	1 health clinic, 1 health post, 10 health centres (posyandu)	3 medical doctors, 2 midwives	ISPA (152), skin infection (32), mental illnesses (27), gastritis (26), trauma (25), diarrhoea (19), flu (18), carried teeth (15), rheumatic (14), hypertension (1).
Tualang Timur	No health clinic, one health post	1 midwife	ISPA (274), Rheumatic (159), flu (147), skin infection (123), gastritis (105), trauma (91), diarrhoea (86), myalgia (85), eyes (63), toothache (60).
Tuah Negeri	No health clinic, 7 health posts	no medical personnel	Since these three <i>kelurahans</i> are new administrative areas data is not available at this level. For further information at Sub-District level refer to Table 4.17 above.
Industri Tenayan	No health clinic, 2 health posts	no medical personnel	
Bencah Lesung	1 health clinic, 10 health posts	1 nurse	

Village	Health Facilities	Health Personnel	Type of Disease/Illness and Number of Cases from January – July 2017
Okura	1 health clinic, 6 health posts	1 nurse	Data for one month only. Upper respiratory system Infection (13), fever (9), hypertension (6), coughing (4), anorexia (4), arthritis (3).

As outlined in the table above, the villages of Tualang Timur, Industri Tenayan and Bencah Lesung do not have at least health clinics. Tuah Negeri and Industri Tenayan have no health personnel, which is probably because these villages are new administration areas and are very sparsely populated. Pinang Sebatang Village has three general practitioners and Meredan Village has six midwives. Common illnesses in these villages comprise: infection of upper respiratory system (ISPA), hypertension, diarrhoea, dysentery and skin diseases.

The other major health issue in the area is HIV/AIDS incidents. In Pekanbaru City, HIV/AIDS patients are increasing in number. In 2014, there were only 533 cases of HIV and 537 cases of AIDS patients. However, in 2016 the number increased significantly to 1,159 cases of HIV patients and 1,006 of AIDS patients (BPS Pekanbaru, 2015). In addition, there are 62 cases of neonatal mortality in the Pekanbaru City area.

Pekanbaru City and Siak Regency Health facilities are important for the Project for the following reasons:

- If there are any major health accidents and illnesses with construction workers, these health facilities can be the first option for treatment;
- Health facilities can assist the Project to deal with first aid actions in and around the Project;
- Health resources can assist the Project to inform employees on what major illnesses in the area and how to prevent them. They can also provide awareness for villages in and around the Project area on the potential major health issues arising from the type of industry MRPR are looking to develop; and
- The Project can collaborate with health facilities as part of Corporate Social Responsibility (CSR) on how to strengthen awareness among villagers on how to mitigate major illnesses, reduce maternal-children and baby mortality ratio.

4.15 Community Facilities and Utilities

4.15.1 Clean Water Facilities

Based on the Pekanbaru City Mayor's Performance Achievement Report (2016), clean drinking water is available to 74.77% of the city's inhabitants. Wells are also used to obtain water and there are still some areas where the river is used for washing and bathing. Most people from the three administrative areas in and around the power plant site near Pekanbaru City collect fresh water from PDAM (Water Supply Company), however some of them still need to buy fresh water.

In comparison, 50% of Siak Regency' communities have to buy drinking water and they use the Siak River for bathing (BPS Siak District, 2016). However, the river is polluted from various sources including palm oil waste and as a result the water quality of Siak River is very poor (refer to ESIA Volume 2: EIA for water quality results at points adjacent to the Project area). The water intake and discharge pipelines are located in the Melebung and part of Maredan PDAM. Other areas still use well water and most villagers of Kuala Gasib, Pinang Sebatang, Maredan, Tualang Timur Villages buy gallon water for drinking purposes.

4.15.2 Sanitation Facilities

Pekanbaru City waste disposal service covers approximately 58.45% of the area. In contrast, Siak Regency sanitation facility services cover 95.7% of the area, which at a national level is very high. Many villagers in the three villages/kelurahans near the power plant site have sanitation facilities within their properties while others use communal toilets in the villages. The social survey identified that 88% of the respondents have sanitation facilities at home, 7% of them use the Siak River for sanitation means, 3% use public toilets and the remainder use the gutter or any available places including Siak River (2%).

4.15.3 Waste

Domestic liquid waste such as water from the bathroom or dish water is disposed to the backyard. The waste is left to be absorbed by the land. The social survey identified that, 48% respondents dispose liquid waste to the gutter, 36% dispose it to the septic tank, 11% to any available places and 5% dispose it to the Siak River.

The social survey also identified that 96% of respondents dispose of solid waste through incineration, 3% dispose it to any available places, 1% take it to a waste disposal facility and 1% dispose to the Siak River.

4.15.4 Telecommunication

Many villagers within the Project AoI have cellular phones with Telkomsel being the service provider; however, not all locations have good signals.

4.15.5 Electricity

Based on Pekanbaru City Mayor's Performance Achievement Report (2016), 263,192 households had electricity or almost all of Pekanbaru households. In comparison in Siak Regency in 2015, 68.3% of households had access to electricity, about 20% use non-state electricity facilities and around 10% do not have electricity. Based on the social survey, the three administrative areas of Bencah Lesung, Industri Tenayan and Tuah Negeri have access to electricity supplied by PLN while some of villagers have to use diesel power generators, pay to use their neighbours power or the head of the kelurahans.

The villages along the gas pipeline route do not have access to electricity, with the exception of Kuala Gasib Village where approximately 50% of households have had electricity since January 2018. As of January 2018 electrification hasn't reached Meredan Village, Pinang Sebatang Village and Tualang Timur Village. Most of the villagers are still using diesel power generators and some of them still use oil lamps.

4.16 Quality of Life

The Human Development Index (HDI) is used as a standard to measure the quality of life. The measurement includes indicators for a long and healthy life, knowledge attainment and decent standard of living. An overview of the HDI between 2010 – 2016 for all districts in Riau Province is detailed in Table 4.20 below.

Table 4.20 : Human Development Index for Riau Province (2010 – 2016)

District / City	2010	2011	2012	2013	2014	2015	2016
Kuantan Singingi	65.07	65.72	66.31	66.65	67.47	68.32	68.66
Indragiri Hulu	65.1	65.93	66.5	66.68	67.11	68	68.67
Indragiri Hilir	61.98	62.82	63.04	63.44	63.8	64.8	65.35
Pelalawan	65.95	66.58	67.25	68.29	68.67	69.82	70.21

District / City	2010	2011	2012	2013	2014	2015	2016
Siak	69.78	70.2	70.45	70.84	71.45	72.17	72.7
Kampar	68.62	69.64	70.08	70.46	70.72	71.28	71.39
Rokan Hulu	63.59	64.2	64.99	66.07	67.02	67.29	67.86
Bengkalis	69.29	69.72	70.26	70.6	70.84	71.29	71.98
Rokan Hilir	64.13	64.76	65.09	65.46	66.22	66.81	67.52
Kepulauan Meranti	59.71	60.38	61.49	62.53	62.91	63.25	63.9
Pekanbaru	77.34	77.71	77.94	78.16	78.42	79.32	79.69
Dumai	69.55	70.43	71.07	71.59	71.86	72.2	72.96
Riau Province	68.65	68.9	69.15	69.91	70.33	70.84	71.2

Source: BPS Provinsi Riau (2017)

Based on data outlined in the table above, the HDI for all districts/cities in Riau Province has increased from 2010 to 2016. Pekanbaru City has an HDI of 79.69 and Siak Regency 72.7 in 2016. The Siak Regency HDI of 72.7 is the third highest in Riau Province after Pekanbaru City and Dumai.

In Indonesia, Pekanbaru City is in a high HDI group but has a lower figure in comparison with DKI Jakarta (79.7), South Jakarta (83.94) the highest in Indonesia, Central Jakarta (80.34) and Padang (81.06). Siak Regency has a medium to high HDI range.

In comparison to other parts of the world, Indonesia is classified a Medium Country category with an HDI of 68.9, compared to Norway, the highest HDI country in the world which has a HDI index of 94.9.

4.17 Vulnerability

ADB defines a vulnerable group as, “*unlike mainstream groups, these groups are typically socially excluded, frequently disadvantaged by discriminatory practices, and limited in their capacity to access or take advantage of development opportunities because of their social characteristics.*”

IFC defines vulnerability as “*people who by virtue of gender, ethnicity, age, physical or mental disability, economic disadvantage or social status may be more adversely affected than others.*”

Groups that are vulnerable in the villages within the Project Aol are generally the elderly, widows and the disabled. One distinct ethnic group that is vulnerable is the Nias people. They migrated to this areas because of a tsunami in 2004. Most have limited skills and are uneducated and many of them do not have identity cards. This means that their children cannot obtain access to free education of the state conditional cash transfer scheme, a national scheme to provide cash benefits to poor women who have children who attend schools.

The Okura people are also considered as vulnerable since their livelihood depends on the quality of natural resources. Men and women use the Siak River for their livelihood, for fishing, bathing and drinking water.

Some of the palm oil worker settlements in the middle of the palm oil plantation areas such as in Melebung Village are considered vulnerable as well. The village of Melebung consists of 30 families and given they live far from larger settlement areas, access to education and health services for their family members is limited, which means that their accommodation and clean water conditions are sometimes compromised.

5. Stakeholder Engagement

5.1 Stakeholder Engagement Plan

A process of identifying relevant stakeholders that may be directly or indirectly affected by the project has been completed. A Stakeholder Engagement Plan (SEP) has been prepared for the Project to guide engagement activities for the Project. The SEP can be found in ESIA Volume 5: Technical Appendices. The objectives of this SEP are to:

- Identify the local legal framework of consultation activities and disclosure requirements, particularly in respect of those public consultation activities that are directly required under the local permitting process;
- Identify potential stakeholders in the area of influence, as well as relevant interested parties such as government agencies and other key stakeholders;
- Record all consultation activities, including those prior to the commencement of the ESIA process;
- Describe how concerns or grievances will be handled via a Grievance Mechanism (refer to mitigation and monitoring Sections 8.1 and 8.2 of the SIA);
- Provide an action plan for further consultation including at least two meetings bi-annually in each affected community during preparation, construction and operational phases of the Project, including details on appropriate formats for effective and culturally meaningful interaction with the community and relevant stakeholders; and
- Provide a disclosure plan, including the identification of any locations where relevant project documentation will be available locally and elsewhere as well as languages to be used.

The SEP will be revised and updated periodically including upon completion of the ESIA to assist with ongoing engagement throughout the Project. A copy of the SEP which includes the Grievance Mechanism is provided in ESIA Volume 5 – Technical Appendices.

5.2 Public Engagement to Date

5.2.1 Public Meetings

The first public consultation for the Project was conducted on 11th October 2016 and was attended by 78 participants including 11 women, 2 non-governmental organisations (NGO) and a University of Riau lecturer in Kelurahan Bencah Lesung Office, see Figure 5.1 below.

Suggestions from the communities for the Project include:

- Expectation that the MRPR improve the bridge at Tenayan Jaya road;
- Based on community experiences from similar Project development activities, many community members did not know the route of the gas pipeline. They hoped that signs will be produced indicating where the pipeline route is located;
- Would like to see local community members being employed. They want to ensure the bad practices of Tenayan CFPP who only employed three villagers as security officers will not be followed.
- In order to formulate CSR activities, it is hoped that the MRPR Community Liaison Officer will discuss proposals with Sub-District and District Government Officers in order to fulfil the needs and aspirations of the villagers.
- The MRPR project office should be accessible to local communities in order to build good relationships

- Villagers would like to know what impact the power plant will have on the palm oil plantations surrounding the site.
- Improve the condition of roads used to transport heavy equipment to the power plant site.
- MRPR to conduct training to improve the capacity building of local human resources.
- Women to have the opportunity to apply for jobs.

MRPRs representative responded to all questions and queries raised by the community at the meeting and noted that any concerns will be considered a priority. MRPR Community Liaison Officer will also continue to discuss any further issues raised by the villagers.

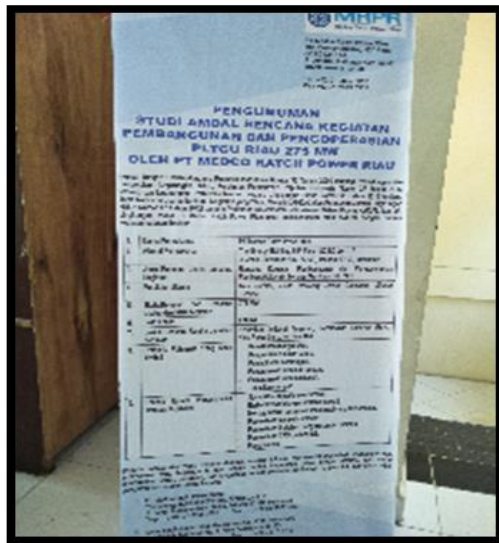


Figure 5.1 : Public Consultation Board used in Meetings with the Community

5.2.2 Progress to Date

MRPRs Community Liaison Officer have visited most of the villages around the power plant and along the gas pipeline in order to maintain communications and provide ongoing information related to the Project.

During the lender's visit on the 11th – 15th of December 2017, two community member meetings at two locations along the gas pipeline and one meeting in the office of Kelurahan Tenayan Raya were conducted. A social survey of Buah Negeri, Bencah Lesing and Industri Tenayan Villages adjacent to the power plant and the five villages along the gas pipeline route Kuala Gasib, Pinang Sebatang, Meredan, Tualang Timur and Melebung was conducted by NBC. During the social surveys any community concerns in relation to the Project were recorded. Figure 5.2 below shows the public consultation event undertaken at Industri Tenayan Kelurahan.



Figure 5.2 : Public Consultation at Industri Tenayan Kelurahan

5.3 Community Perceptions of the Project

From the social survey conducted at the power plant approximately 60% of respondents in Tuah Negeri, 70% of respondents in Bencah Lesung and 40% of respondents in the Industri Tenayan administrative areas did not know about the power plant development. However, when the goals of the project were explained, the majority of respondents seemed in favour of the Project as it would provide benefit to local communities. The respondents who were not in favour cited a lack of clarity concerning benefits and fear of environmental impacts.

Based on the social survey along the gas pipeline route, approximately 45% of the respondents were aware of the Project. An estimated 32% of the respondents confirmed knowledge of the Project from the power plant employees, 9% respondents knew the Project from their friends, and 2% of the respondents knew the Project from the village or Sub-District officers. Only 1% of the respondents knew the Project from the Sub-District officers. Approximately 96% respondents along the gas pipeline route approved of the project.

Community concerns and suggestions in relation to the Project which were raised by respondents during social surveys are detailed in Table 5.1 below along with how the ESIA will address these concerns and suggestions.

Table 5.1 : Community Concerns / Suggestions raised during Social Survey and how the ESIA Addresses them

Community Concerns / Suggestions	How the ESIA has Addressed the Concerns / Suggestions
They are afraid that the project might impose danger to the nearby settlement.	The ESIA assesses the potential environmental and social impacts from the Project and recommends mitigation measures to reduce any significant impacts identified that are not already addressed through the design of the Project.
They disapprove of cutting down their privately-owned trees. They want MRPR to request the village official's permission and to act respectively in the village.	Any vegetation required to be removed will be noted in the ESIA and in the Analisis Mengenai Dampak Lingkungan (AMDAL) which will require approval prior to work commencing. Ongoing community engagement will be conducted through

Community Concerns / Suggestions	How the ESIA has Addressed the Concerns / Suggestions
	MRPR's Community Liaison Officer and any community concerns identified will be addressed.
They demanded appropriate compensation for their loss and refused to be dislocated if the Project development trespasses their private territory.	MRPR is addressing this through the land acquisition process on a case by case basis. Any compensation would be dealt with through a Livelihood Restoration Plan (LRP).
They demanded for MRPR to be honest and to bring benefit to the public.	MRPR will be honest and open about all matters relating to the Project that may impact on local communities. Ongoing community engagement will be conducted through MRPR's Community Liaison Officer and any community concerns identified will be addressed.
They demanded for MRPR to confirm to the village officials regarding any issues, and not to take personal gains, and not to lie to them.	
There should be an announcement and meeting with the villagers about the impact and benefits of the Project.	Following completion of the ESIA, a meeting will be conducted with the local communities to communicate the findings of the ESIA.
There should be precaution measures to the gas pipeline and prevention of black out.	The gas pipeline will be designed to avoid any impacts to the local communities including for example being trenched and buried. The transmission and distribution of power are the responsibility of PT Perusahaan Listrik Negara (Persero) (PLN). The power station will contribute to the security of supply in the region and so help prevent black outs.
The presence of the gas pipeline for generating electricity should guarantee availability of electricity in the village.	The distribution of electricity generated by the Project will be determined by PLN.
There should be job opportunities for the villagers.	MRPR will seek to employ members of the local community as far as possible. There will be approximately 60 permanent employees at the power plant, and others will be required to assist with maintenance from time to time. The local community and villagers will be encouraged to apply for jobs at the power plant and suitably qualified applicants will be hired where appropriate.
There should be a significant approach to help the villagers. The Project authority should provide support to the villagers during the development of the Project.	MRPR will ensure that local communities are supported through ongoing consultation with MRPR's Community Liaison Officer and through MRPRs CSR programs.
The construction of the Project should not trespass on the villagers' settlement and they should avoid disrupting the public facilities.	The power station, transmission line and water pipelines are not close to any current settlements. The gas pipeline route will pass through several villages and settlements, but any disruption will be temporary, during construction. Where the gas pipeline design cannot be altered to avoid existing structures, MRPR will address any issues through the land acquisition process on a case by case basis. Any compensation would be dealt with through a LRP.
The Project should ensure safety and assist villages' public facilities such as electricity and freshwater.	MRPR and their Engineering Procurement Construction (EPC) Contractors will ensure public health and safety is maintained via management plans. The provision of electricity and water to villages is not MRPR's responsibility. However, the power plant will contribute to the security of supply in the region.

Community Concerns / Suggestions	How the ESIA has Addressed the Concerns / Suggestions
There should be fair compensation and secrecy of personal data.	MRPR will ensure any compensation necessary is fair and that any data disclosed by the local communities is kept securely.
MRPR has to be responsible for any problems that may occur as a result of the Project and provide early warning before disrupting the villagers.	Ongoing community engagement will be conducted through MRPR's Community Liaison Officer and any community concerns identified will be addressed.
MRPR should be aware of the economic conditions of people in the plantation. Many are poor and some are elderly.	This SIA highlights the economic conditions of the local communities within the Project AoI and any potential impacts to vulnerable people will be avoided or mitigated as far as possible.
The gas pipeline should be monitored on monthly basis.	MRPR will ensure appropriate maintenance of Project facilities including the gas pipeline are conducted on a regular basis.

6. Social Impact Assessment

6.1 Employment

The Project will create a range of direct and indirect employment opportunities during construction and operation. These are discussed in further detail below.

6.1.1 Direct Employment

Labour requirements will fluctuate throughout the 3-year construction period. According to construction labour estimates the following:

- Construction workforces will peak at approximately 956 workers for the power plant and 299 workers for the gas pipeline;
- The power plant construction will generate over 10,000 person-months of labour; and
- The gas pipeline construction will generate over 2,200 person-months of labour.

It is anticipated that many of those will be employed from the local communities in the immediate Project area. However, a number of roles will require specialist skills and/or further education and may require sourcing from Pekanbaru City or further afield.

During operation, a total of 62 individuals will be employed, with only one of these anticipated to be sourced from overseas. All others are expected to be from Indonesia, and it is expected that many will be drawn from the current workforce in the Pekanbaru area.

The station operational workforce will require a mix of senior managers, supervisors, operations staff, maintenance staff, and clerical support. The proposed organisational structure is provided in ESIA Volume 5 – Technical Appendices, Appendix G of the Process Description. It is anticipated that appropriately qualified individuals from the immediate local communities will be employed in some of these roles.

Potential Beneficial Impacts

As identified in Section 4.12.1, a large proportion of local communities within the Project AoI have low incomes and can be considered to be of Medium sensitivity (refer to Sensitivity criteria in Table 3.2). Direct employment is anticipated to generate a number of jobs for the local community that will continue over a number of years both during construction and operation. This can be considered to be of Moderate magnitude. Direct employment opportunities are therefore anticipated to be of **Moderate** beneficial impact.

Potential Negative Impacts

If the Project employs workers from outside the villages located within the Project AoI it may lead to conflict, especially if the villagers feel that resources are not properly being dedicated to building the capacity of local villagers.

The proposed EPC Contractor for the power plant is Lotte Engineering and Construction (Lotte) who are from South Korea. Lotte's approach may not be sensitive to the local culture and religion. However, it should be noted that Lotte does have prior and current experience working in Indonesia and will therefore be experienced in managing any local cultural differences. The gas pipeline Contractor is Citra Panji Manunggal (CPM), an Indonesian company which has significant experience working through the country.

Although employment of locals from villages within the Project AoI will occur, additional employment will occur from further afield. It is likely that many villagers may not qualify for some of the operational jobs as the criteria

for these positions can include advanced education and specialist skills. However, there will be many positions where technical expertise is not required.

Any potential impacts arising from conflict associated with employment of individuals outside the Project Aol or from cultural differences of the EPC Contractor is considered to be of Moderate magnitude. With sensitivity considered to be Medium, overall impacts are determined to be **Moderate**.

6.1.2 Indirect Employment

In addition to direct employment, the Project will require goods and services throughout the construction period. These would generate indirect employment opportunities through additional business for local companies. For example, catering meals for workers, providing construction equipment, cleaning services, car rental services, security services and small maintenance jobs.

During operation, local businesses could further expand to provide better quality services and support other projects in Pekanbaru City. The Project may then provide a foundation for developing sustainable local businesses. Increased indirect opportunities for local businesses is considered to be of Minor magnitude. In consideration of existing employment sensitivity discussed in Section 6.1.1 above overall impacts to the Project from indirect employment is determined to be of **Minor** beneficial impact.

6.2 Land Acquisition Impacts

6.2.1 Land Acquisition

Land acquisition will be carried out through prior consultation with land owners and local government representatives and this process is still ongoing.

Land owners and land users will be compensated as appropriate and their needs addressed in line with IFC Performance Standard 5 and ADB Social Safeguards. Land acquisition for the Project will be conducted on a willing-seller willing-buyer basis, at no point will the Indonesian Government's expropriation powers under Law No. 2/2012 on Land Procurement for Development in the Public Interest will be used to acquire land for the Project. In other words, land acquisition will be based on mutual agreement and costs identified by land/agriculture valuation experts and local government institutions. Compensation will be provided based on market value for land and if required for replacement value of affected assets, even when government rates issued by the regional government are lower. Based on this there will be no involuntary resettlement.

The compensation and voluntary resettlement process will take into account livelihood restoration, quality of life, and especially, compensation for vulnerable villagers (see Section 4.17). This means that cash compensation is not always the best alternative as it can be spent quickly. Replacement land with easy access and similar or better quality can often be a better option. Placement of the power plant and re-routing of the gas pipeline and water intake and discharge pipelines have been selected to reduce the potential level of conflict that the land acquisition process can generate. All site and route considerations are discussed in the assessment of alternatives section of ESIA Volume 1: Introduction.

In line with the national voluntary resettlement process, set out below are the stages of the Land Acquisition Process that will be completed for the Project by MRPR.

Land Acquisition Process

The land acquisition process is divided into two main areas, one being the power plant and transmission line and the other the gas pipeline route. Further information on the Power Plant and Off-Site land requirements are detailed in ESIA Volume 1: Introduction Tables 3.1 and 3.2 in.

Figure 6.1 below provides an overview of the land acquisition flow chart for the power plant and transmission line and Figure 6.2 provides a flow chart for the gas pipeline. The land acquisition process being followed by MRPR for the Project is detailed in the following points below.

- 1) MRPR personnel (legal, technical, HSE) has conducted a preliminary survey to identify the land and collect all related information from the field (data on land owners, width etc).
- 2) The targeted plots of land for the power plant area consist of 12 parcels of land currently used as palm oil plantation. Based on collected data, the plots of land are owned by ± 6 individual farmers and are located away from dense residential areas. The total area of land to be acquired is approximately 92,575.52 m², with $\pm 24,800$ m² allocated for the power plant, $\pm 12,800$ m² allocated for special facilities, and the remaining area allocated for office buildings and other supporting facilities. Based on discussions with the following authorities on 6th February and 2nd March 2018:
 - Pekanbaru City administration and joint meeting with The Ministry of Agraria and Spatial Planning;
 - Pekanbaru City;
 - Siak Regency; and
 - Riau Province.

MRPR understands that the area of the target plot will be designated for industrial and commercial area.

- 3) To date, MRPR has obtained a form of commitment from the 6 landowners to sell their land to MRPR. However, the purchase of the target plot by MRPR is subject to issuance of a Location Permit ("Ijin Lokasi") from the local government of Pekanbaru City. As the capital of Riau Province, the issuance of the location permit by the Pekanbaru City administration is subject to and in line with the Riau Province Spatial Plan (Rencana Tata Ruang dan Wilayah (RTRW)). At the time of writing this ESIA, the Location Permit is yet to be issued to MRPR.
- 4) The negotiation process with land owners may be conducted more than once; it will depend on the situation in the field. MRPR has engaged a firm to independently appraise the value of the land within the power plant. It is expected that the negotiation with land owners could be concluded with the final price equal to or higher than the value assessed final report of independent appraisal which hired earlier by MRPR.
- 5) MRPR shall collect the required documents from the land owners to be reviewed by the Notary. If the Notary declares the documentation insufficient then MRPR's team will communicate with the relevant land owners, Heads of Village, and Heads of Sub-district concerning any incomplete and missing documents.
- 6) MRPR are in the process of collecting the required evidence for ownership of the target land. MRPR has requested that the land owners provide send this evidence direct to the Land Deed Official at Pekanbaru City for review. If the Land Deed Official determines that further evidence is required, then MRPR will communicate with land owners, Head of Village, Head of Sub-District to obtain the required documents.
- 7) Based on legal advice MRPR has received, the land that MRPR is targeting is unregistered land ("SKGR") and these normally have some legal risk. The legal risks are common in the Pekanbaru area because the SKGR documentation practices in the Village/Kelurahan Office are not as rigorous as the documentation practices which are implemented elsewhere in Indonesia e.g. by the Villages/Kelurahan Offices in Java Island for Girik land. Therefore, it is possible that each land target may have more than one set of legal documents and so potentially more than one person claiming ownership of that land.
- 8) Since the finalisation of the Zoning Plan of Riau Province is unpredictable and MRPR also need to minimise the legal risks then MRPR will follow the following process:

- MRPR and the land owner will sign the Engagement Agreement of Land Purchase (“PPJB”) after which MRPR will transfer the Down Payment to the land owner. Also, the land owner will sign the Power of Attorney to the Notary to process the land transfer certification (individual HGB) to BPN office.
- MRPR will pay the Notary the fee for the land certification process of the individual HGBs.
- The Deed of Land Purchase will be executed after: (i) BPN issued the individual HGB; and (ii) MRPR obtain the location permit.
- MRPR will process the re-registration of the HGB certificate for the land to be listed under the name of MRPR.

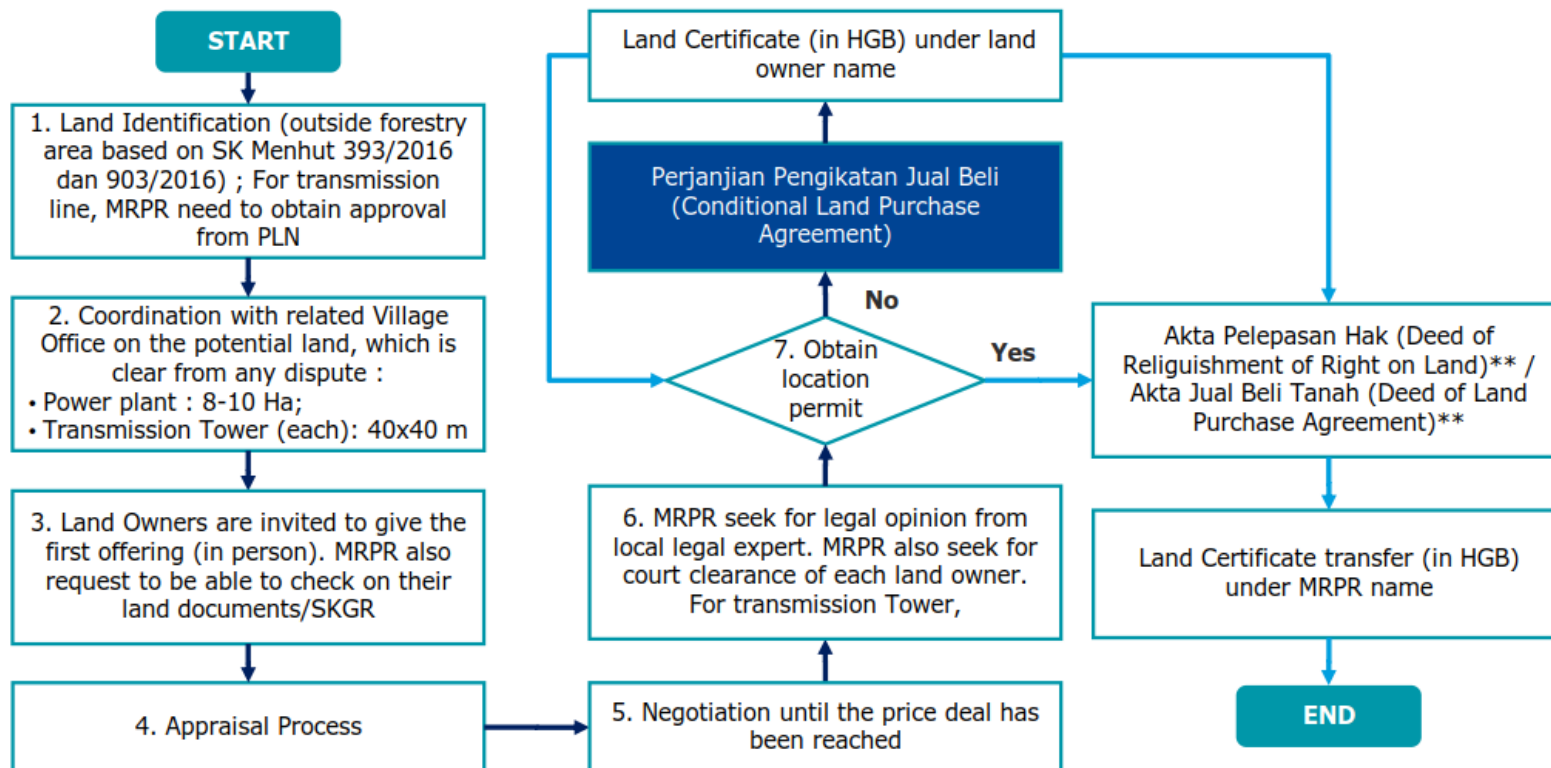
MRPR have maintained communication with the relevant authorities at Riau Province and Pekanbaru City to monitor the progress with respect to the RTRW ratification as well as in obtaining confirmation of National Zoning Plan (RTRW) compliance from The Ministry of Agraria and Spatial Planning. On the 6th February and 2nd March 2018, The Ministry of Agraria and Spatial Planning conducted a meeting to discuss compliance with the National Zoning Plan with the relevant authorities from Pekanbaru City, Siak Regency, and Riau Province. A Recommendation Letter on the National RTRW compliance has now been issued by The Ministry of Agraria and Spatial Planning on the 27th March 2018.

- 9) After the signing date of the deeds and payment to the land owners, the MRPR team will monitor and ensure that the legal documentation process is correctly undertaken.
- 10) All completed and signed documents will be collected and handed over to the Notary for certification process to BPN.
- 11) The MRPR team coordinating with the Notary will monitor and follow up the certification process under MRPRs name at the BPN office.
- 12) Upon completion of land document certification from the BPN, all documents shall be handed over to MRPR.
- 13) For the gas pipeline, land acquisition will be required for certain parts of the gas pipelines that cross private palm oil plantation area. Approximately 30 km of the gas pipeline will be within existing provincial and regency roads and this will be leased. For the remaining 10 km of the gas pipeline, it will cross private plantation and MRPR will enter into a land use agreement / land acquisition with these land owners. The land acquisition process is ongoing with further surveys and communication with the relevant Local Government being scheduled.

It should be noted that the ESIA does not represent a legal opinion in respect to the land acquisition process being conducted by MRPR.

Land Acquisition

Power Plant & Transmission Line



Note : ** Signing on the Deed of Reliquishment of Right on Land (Akta Pelepasan Hak) / Akta Jual Beli Tanah (Deed of Land Purchase Agreement) / Akta Sewa Lahan (Deed of Land Rental) will be followed by payment process

For the required land for supporting facilities of power plant (i.e. water pipe intake, access road) will be in area owned by Government of Pekanbaru City. So, the land acquisition process shall be governed by Permendagri (Regulation of Ministry of Home Affairs) no 19/ 2016. Minister of Energy and Mineral Resources

The compensation for land owners under ROW area of Transmission Line shall be governed by Regulation of Ministry of Energy & Mineral Resources no.38/2013

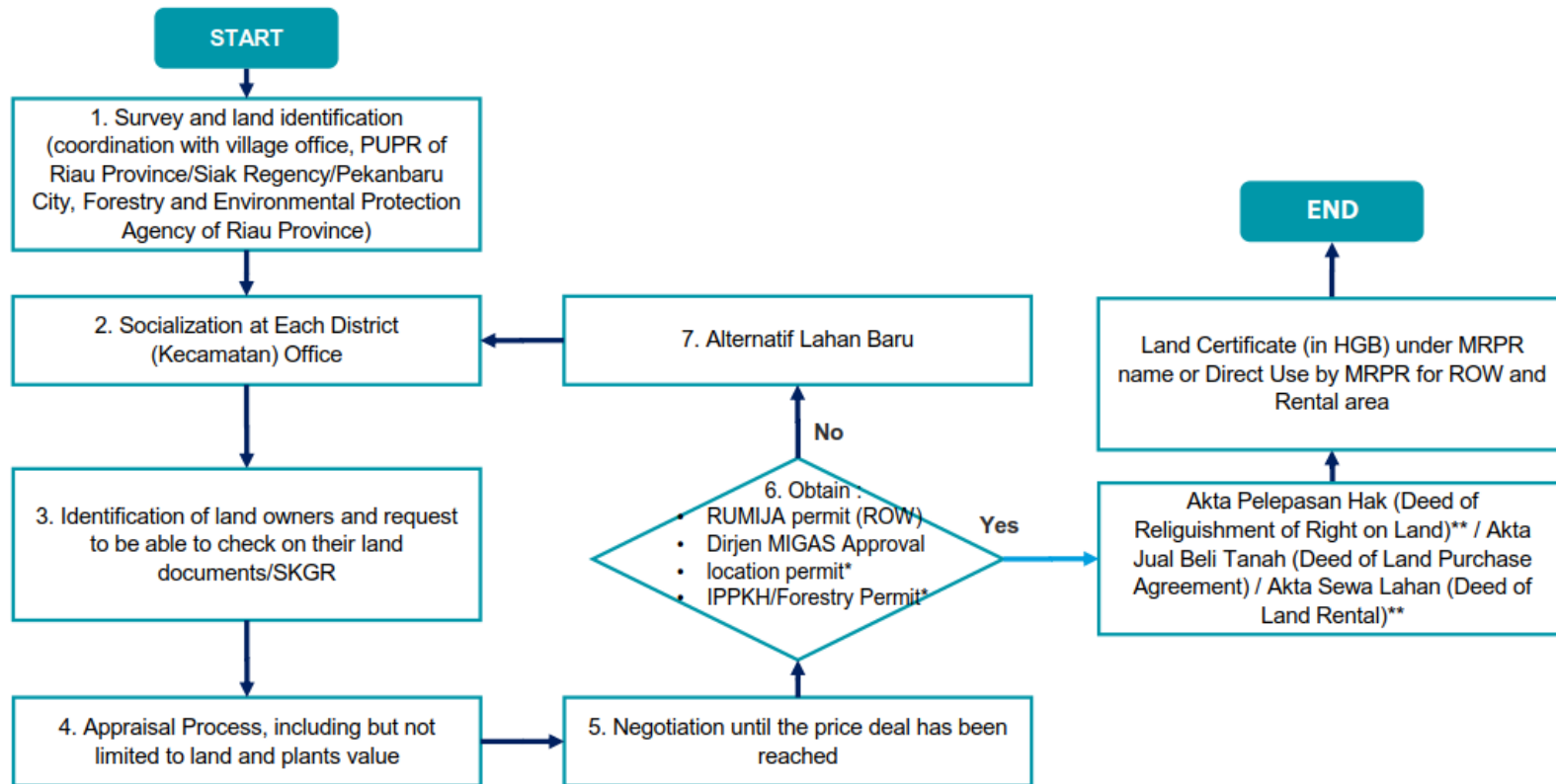
PT Medco Ratch Power Riau

Progress Meeting 1
Riau (275MW) CCPP IPP Project

Figure 6.1 : Land Acquisition Flowchart for the Power Plant and Transmission Line

Land Acquisition

Gas Pipeline Route



Note : * If required

**The signing on the Akta Pelepasan Hak (Deed of Relinquishment of Right on Land) / Akta Jual Beli Tanah (Deed of Land Purchase Agreement) / Akta Sewa Lahan (Deed of Land Rental) will be followed by payment process

Considering the potential large number of land owners, the payment process will be done collectively in a group at related Village offices.

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Figure 6.2 : Land Acquisition Flowchart for the Gas Pipeline

6.2.2 Efforts to Avoid or Minimise Displacement

A number of options for placement of the power plant and routing of the water intake and discharge pipeline and gas pipeline have been considered and these options have been discussed further in ESIA Volume 1: Introduction. The preferred options have been selected to avoid, and as far as possible minimise physical and economic displacement to local communities. Any potential impacts in relation to physical and economic displacement are discussed in Sections 6.2.3 and 6.2.4 below.

6.2.3 Physical Displacement Impacts

For the power plant and transmission line, the type of land is palm oil plantations owned by ± 6 individuals consisting of 12 parcels of land for the power plant and two to three individuals consisting of three parcels of land for the transmission line. The power plant and transmission line do not have any people residing on the land and according to the draft Zoning Plan for Riau Province, the area is designated for industrial and commercial use and as such no physical displacement will occur. The baseline surveys identified no persons or structures residing on the proposed power plant site.

The preferred water intake and discharge pipeline route is within government owned land with no permanent residents located nearby and therefore no physical displacement impacts will occur. There are approximately 10 warungs that have been identified on land adjacent to the water intake and discharge pipeline route and some may need to be moved on a temporary basis during construction. The temporary jetty is located on the opposite bank of the Siak River to the village of Okura and therefore it will not result in the physical displacement of any villager.

There are five villages along the gas pipeline route which comprise a range of properties which may be affected during construction on a temporary basis. All houses will be avoided via re-routing of the gas pipeline and the main impacts will be temporary during construction rather than during the operation of the facility. It should be noted also that adjacent properties are not likely to be impeded, rather any construction effects will be contained within the project property boundaries. At the proposed gas metering facility location, there are two nearby properties. However, the gas metering facility is located sufficiently far enough away from these properties, therefore it will not result in any physical displacement. An overview of potentially affected properties within each village along the gas pipeline route is provided in Table 6.1 below. It should be noted that the number of properties is based on consideration of Alternate Route 1 as shown in Figure 4.1. Based on a desktop review of properties along the preferred 7 km section of gas pipeline (prior to entering the offtake location), which is now south of the road, the number of properties that may be affected will be less than those shown in Table 6.1. Once the final route is confirmed, the numbers of properties to be affected will be outlined in a revised version of the ESIA prior to financial closure.

Table 6.1 : Properties along the Gas Pipeline Route that may be Affected

Village	Types of Properties	Number of Properties along the Gas Pipeline Route	Number of Properties within 0-1 m of the Gas Pipeline
Kuala Gasib	Workshop, welding shop, small kiosk of gasoline (3), health post, houses, a monument of Princess Kaca Mayang cemetery, huts, food stalls/warung (9)	23	12
Pinang Sebatang	Ex Electricity post, small welding shop, houses (12), warungs, boundary post, NGO meeting post.	19	5

Village	Types of Properties	Number of Properties along the Gas Pipeline Route	Number of Properties within 0-1 m of the Gas Pipeline
Tualang Timur	Garage, houses (19), shop, warungs (32), gasoline kiosk, food stalls, bus stop, school fence, entrance portal	60	8
Maredan	Houses (19), fence of security posts, fence of school, concrete shops, kiosks, garage, warungs (5)	30	1
Melebung	Palm oil company worker 's accommodation sites (5), security portal (3) musholla, pipes of PT Kelila, houses, portals	12	7
Tuah Negeri	Houses (3)	3	-
Total		148	33

As of July 2018, MRPR are still in the process of finalising the gas pipeline route and the intention is to undertake minor re-routing around properties that could be subject to permanent physical displacement. Temporary displacement of up to approximately 46 warungs (very lightly constructed wooden street stalls which are relatively portable) for example may occur, depending on the final set back distance of the pipeline from these activities. A census survey of PAPs along the gas pipeline route will be undertaken in the preparation of an Livelihood Restoration Plan to confirm the actual numbers of businesses that could be temporary displaced. However, as the pipeline will be constructed 500 m at a time any physical displacement will be for short durations of approximately a week. As such there is no plan to permanently physically displace any villagers along the gas pipeline route.

Some of the individuals in the affected properties may be vulnerable (see Section 4.17) and therefore sensitivity is considered to be Medium. Any physical temporary displacement as a result of the Project is expected to be of Minor magnitude and therefore overall impacts are determined to be **Minor**.

6.2.4 Economic Displacement and Livelihood Impacts

The palm oil plantation within the Project AoI represents a source of income for local communities that work on the land and therefore the removal of palm oil plantation land associated with the Project will impact on their livelihood. The workers are transient and work over a wide area of palm oil plantation and are not reliant on one relatively small area. At the power plant site there is currently one security guard who is the head of the sub-*kelurahan* who is employed by the plantation owner. The construction of the power plant will directly impact on the livelihood of the security guard and therefore appropriate compensatory measures will need to be put in place by MRPR via a Livelihood Restoration Plan (LRP). Measures may include employment during the construction and operation of the Project or appropriate compensation. As the individual impacted is not considered to be vulnerable, sensitivity is considered to be Low. Only the livelihood of one individual will be impacted from the power plant and therefore magnitude can be considered to be Negligible. Overall livelihood impacts from construction and operation of the power plant and transmission line is determined to be of **Negligible** impact.

At the temporary jetty site, Okura Villagers utilise the Siak River for their livelihood. In the context of use of the Siak River which is extremely large and given the size and location of the temporary jetty, sensitivity is considered to be Low. The temporary jetty will be approximately 100 x 70 m in size and therefore will result in the loss of 7,000 m² of land. Compared with the total area of the Siak River, this area is extremely small and given the jetty will only be temporary (used during construction), impacts to Okura villagers' livelihood is

considered to be of Negligible magnitude. Overall livelihood impacts from the temporary jetty are determined to be of **Negligible** impact significance.

The water intake and discharge pipeline routes are located near to a number of warungs. It is expected that the pipeline can be routed to avoid the warungs. However, should this not be possible they will require temporary relocation during construction (expected to take up to eight months) resulting in economic displacement. As warungs are lightly constructed portable structure it is anticipated that they could be moved to outside the area of impact (expected to be tens of metres) during construction and as the pipelines will be buried, the warungs will be able to return to the original sites following completion of construction activities. In addition, the presence of construction workers may result in increased business. As such impacts associated with economic displacement during construction of the water intake and discharge pipeline are considered to be of Minor magnitude. As outlined in Section 4.12.1 income is typically low in the Project AoI and therefore economic displacement from construction of the water intake and discharge pipelines can be considered to be of Medium sensitivity. Overall impacts are therefore determined to be of **Minor** impact significance.

As outlined in Table 6.1 above, a number of properties have been identified along the gas pipeline route that may be affected during construction. Although no permanent physical displacement is anticipated, businesses such as warungs (food stalls) and kiosks may require temporary re-location. ADB defines a significant impact if 200 or more persons will experience major impacts, which are defined as:

- i) Being physically displaced from housing; and
- ii) Losing 10% or more of their productive assets (income generating).

Economic displacement is defined by the ADB SPS as loss of land, assets, access to assets, income sources, or means of livelihoods as results of:

- i) Involuntary acquisition of land; or
- ii) Involuntary restrictions on land use or on access to legally designated parks and protected areas.

Performance Standard 6 applies to economic displacement resulting from the following types of land-related transaction:

- Land rights or land use rights acquired through expropriation or other compulsory procedures in accordance with the legal system of the host country;
- Land rights or land use rights acquired through negotiated settlements with property owners or those with legal rights to the land if failure to reach settlement would have resulted in expropriation or other compulsory procedures;
- Project situations where involuntary restrictions on land use and access to natural resources cause a community or groups within a community to lose access to resource usage where they have traditional or recognizable usage rights;
- Certain project situations requiring evictions of people occupying land without formal, traditional, or recognizable usage rights; or
- Restriction on access to land or use of other resources including communal property and natural resources such as marine and aquatic resources, timber and non-timber forest products, freshwater, medicinal plants, hunting and gathering grounds and grazing and cropping areas.

Bullet points 3 and 4 of the list apply to the PAPs living long the gas pipeline route and as such Performance Standard 6 is triggered.

It is unlikely that the temporary short-term involuntary restrictions (such as movement of warungs away from the gas pipeline construction area) during gas pipeline construction would result in a major significant impact as defined by ADB. While these impacts are not considered major, they still trigger Performance Standard 6 and MRPR will develop a Livelihood Restoration Plan (LRP) to manage any compensation and livelihood restoration measures that may be necessary.

As discussed in Section 6.2.3 the construction of the gas pipeline will be carried out in 500 m sections that are anticipated to take no more than a week to complete, therefore impacts to livelihood of any affected communities will be small in number (less than 200) and temporary, resulting in Moderate magnitude. It is possible that some of those affected during construction of the gas pipeline may be vulnerable (elderly, widows and disabled) and many members of the community are poor therefore sensitivity is considered to be Medium. Overall impacts to livelihood from construction of the gas pipeline is determined to be of **Moderate** impact significance.

6.2.5 Impacts to Tourism

Within the Project AoI, the village of Kuala Gasib is most likely to be affected by the Project in respect to tourism activities. This is small area in the context of the overall gas pipeline route and therefore tourism can be considered to be of Low sensitivity. The gates of Princess Kaca Mayang cemetery may be impacted as a result of the Project however, pipeline design is ongoing and efforts will be made to re-route where possible. Nuisances such as traffic, noise and dust during the construction phase may discourage interest in the local tourism businesses, though construction activities will last less than a year. Impacts may consist of roadway restrictions during construction that will influence visitors' access to historical sites. As construction of the pipeline will be in 500 m sections that may last up to a week, disruption to any tourism businesses in that section will be of short duration and therefore impacts to areas of tourism interest will be of Negligible magnitude. Overall impacts from the Project on tourism businesses within the Project AoI are anticipated to be of **Negligible** impact.

6.3 Community Health, Safety and Security Impacts

Community safety impacts with respect to the operation of the gas pipeline is discussed in the Qualitative Risk Assessment (QRA) which can be found in ESIA Volume 2 – Environmental Impact Assessment (EIA). The health and safety in relation to those working on the Project is discussed further in the Occupational Health and Safety and Working Conditions assessment report which can be found in ESIA Volume 5 – Technical Appendices and is also summarised in ESIA Volume 2 – EIA. These sections include procedures and processes for managing emergency incidents that may impact on local communities.

6.3.1 Health

The Project will employ many workers during construction and operation and there is potential therefore, that this may increase the rate of spread of communicable diseases in the Project area. In addition, there is potential for personnel from outside the Project area to be present during construction and operation, which may introduce new diseases and/ or a more virulent strain of an existing disease. There is no current intention to establish a labour camp. Another factor that could influence the prevalence and rates of communicable diseases is the creation of vector habitat for insects during construction and during operations e.g. standing water which may result from certain project activities such as alterations to drainage patterns, establishment of trenches (which can fill with water during rainy periods).

The introduction of the workforce can potentially contribute to an increase in the commercial sex trade in the Project area, especially given that the Project location is close to Pekanbaru City, the capital of Riau Province.

An increase in the commercial sex trade is often associated with large scale developments, particularly when a large (often mainly male) workforce is required for a short period of time. In the case of this Project, at the peak

of construction more than 1,000 workers will be employed. If appropriate precautions are not taken, increased rates of communicable diseases in the Project area could occur. This may contribute to increased rates of HIV/AIDS and other sexually transmitted diseases in the local communities.

Therefore, an increase in the transmission of communicable diseases may occur as the result of the introduction of workers into the area, creation of vector habitat, and/ or possibly the presence of commercial sex workers. If left untreated communicable diseases can lead to long-term health issues and/ or in some instances death. In other words, the impact can be characterized as being long-term and in some instances permanent. This could be exacerbated by the fact that few villagers may recognise the symptoms of some diseases.

As the workforce to be introduced will be relatively small against the existing population and the opportunity for creation of vector habitat limited, the magnitude of potential health impacts from the Project is considered to be Minor. There are a number of existing healthcare facilities adjacent to the Project area and Pekanbaru City is only 10 km to the west. Therefore, there is good capacity to absorb any increased healthcare demands as a result of the Project. Consequently, sensitivity can be considered to be Low. Overall impacts to health is determined to be of **Negligible** impact.

6.3.2 Safety and Security

Potential safety and security issues for the Project include:

- Waterway impacts to Okura Villagers who use the Siak River as a means of travelling around using traditional boats and canoes e.g. children travelling to school, fishing etc; and
- Impacts on the communities from increased road traffic associated with the delivery of materials and equipment for the project.

During construction equipment and material will be delivered to the Project via the following:

- vessels unloading at the temporary jetty site, which will result in increased river traffic; and
- Trucks, delivering bulk materials and equipment to the power plant site and along the gas pipeline route.

An increase in waterway and roadway traffic as a result of Project activities could increase accidents in the community. As river traffic within the Siak River is already extremely busy with boat movements to Pekanbaru City and to the existing Tenayan CFPP and therefore river traffic associated with the Project is anticipated to be insignificant against existing river traffic levels. For further details on the level of impact on river traffic from the Project, refer to the Traffic Impact Assessment detailed in ESIA Volume 2 – EIA. Consequently, increased safety and security to the Okura villagers will be of Negligible magnitude. Although the Okura villagers are deemed vulnerable and therefore of Medium sensitivity, overall impacts as determined to be of **Negligible** impact significance.

6.4 Gender Impacts

The construction and operations stages of the Project will result in the employment of a number of people as discussed in Section 6.1 above. Many of the employment positions are for skilled positions that will likely result in a gender bias towards men. This may lead to conflict with women, mainly in the local communities but also potentially further afield such as in Pekanbaru City. However, MRPR has no intention of limiting employment to males. For example, facilities for males and females will be provided in all buildings as MRPR anticipates that many of the permanent operations and maintenance staff will be female.

Indirect employment opportunities resulting from the construction and operation of the Project may contribute to lessening gender bias through increased support to local businesses that employ women. Impacts to gender bias is therefore anticipated to Minor of magnitude. As noted in Section 4.9, there is a pre-existing gender bias towards men particularly in more senior roles within the local communities and therefore sensitivity is considered

to be Medium. Overall impacts to gender bias as a result of the Project is determined to be of **Minor** significance.

6.5 Vulnerable Impacts

As outlined in Section 4.17, the following have been identified as vulnerable within the Project Aol:

- Nias people;
- Okura people;
- Melebung Villagers; and
- Elderly, widows and disabled.

Impacts to those identified as vulnerable are mainly in relation to the limited potential temporary economic displacement as discussed in Section 6.2.4. The key impact from economic displacement is in relation to the construction of the gas pipeline which is most at risk of affecting vulnerable people including the elderly, widows and disabled. Impacts to vulnerable including those on low income is determined to be of **Moderate** significance as detailed in Section 6.2.4.

6.6 Education Impacts

As outlined in Table 6.1 above, the construction of the gas pipeline may potentially affect school in the villages of Tualang Timur and Maredan. Schools can be considered a sensitive receptor with limited means to absorb change and therefore sensitivity is considered to be Medium. Physical impacts to the school will be avoided through re-routing of the gas pipeline and should this not be possible would only result in disturbance to the school fence. The construction of the gas pipeline will result in noise which may disrupt ongoing education at these schools. However, as construction of the gas pipeline will be carried out in 500 m sections that will be approximately one week in duration, disruption to educational activities will be temporary and therefore overall impact magnitude is considered to be Negligible. Overall impacts to education from construction of the gas pipeline is determined to be of **Negligible** significance.

Beneficial education impacts may arise through capacity building to the local community in relation to local employment and associated training. As numbers of skilled workers or those with higher education in the area and relevant to the proposed development are likely to be limited (considered to be of Medium sensitivity) any capacity building is anticipated to be of Minor magnitude. Overall beneficial educational impacts are determined to be of **Minor** significance.

6.7 Ecosystems Services

As outlined in Section 4.11, the use of the Siak River and other smaller rivers as a provisioning service and the use of plants for medicinal purposes are important ecosystem services within the Project Aol.

Components of the Project that are associated with the Siak River include the intake and discharge water pipelines and the temporary jetty. The construction of these structures will result in minimal land take and river traffic will be insignificant against existing river traffic levels. During operation, discharges of water from the site will not impact on the water quality or ecological features of the Siak River (refer to ESIA Volume 2 – EIA, Hydrology and Water Quality and Freshwater Ecology Impact Assessment section). As such the magnitude of impact to ecosystem services associated with the Siak River is considered to be Negligible. The Siak River is a large river with good capacity to absorb proposed changes and therefore it is considered to be of low sensitivity. Overall impacts are determined to be of **Negligible** impact significance.

The power plant, transmission line and water intake and discharge pipelines will be sited within land comprising palm oil plantation and the gas pipeline will predominantly within the reserve of existing road or through palm oil plantation land. The removal of vegetation will therefore predominantly comprise palm oil plantation and is not anticipated to cause any widespread impact on plants that are used for medical purposes. The majority of medicinal plants are understood to already be lost in the area with the majority present only within the confines of properties that have planted them therefore sensitivity is considered to be Negligible. The impact magnitude associated with removal of plants used for medicinal purposes is considered to be Negligible. Overall impacts are therefore determined to be of **Negligible** impact significance.

6.8 Cumulative Impacts

The only other major development in the area is the existing Tenayan CFPP which is located 2 km north of the proposed power plant site. The two projects are not anticipated to cause any adverse cumulative impacts to the local communities in the area. However, ongoing community engagement through MRPR's Community Liaison Officer will be important in understanding and managing any community concerns. The capacity building and employment opportunities associated with the Project will be important considerations to be taken forward.

7. Cultural Heritage

7.1 Introduction

Assessment of Project's impacts on cultural heritage identifies the following aspects for consideration:

- Above ground sensitive features;
- Potential for survival of archeologically artefacts;
- National or international designated features of cultural significance; and
- Intangible cultural heritage resources.

The method of assessing impacts is as described above in Section 3. The spatial extent of the cultural heritage baseline described below follows the Project AoI.

7.2 Baseline

Cultural heritage including archaeological sites, old mosques, burial sites, sacred grounds, temples, and other historical objects should be protected and maintained since they are national and international assets. Based on the social survey undertaken for this Project, the power plant site does not contain any historical and cultural heritage sites.

The social survey also identified that Okura Village contains a sacred cemetery of village elders located close to the village settlement in a place called Tebing Tinggi, located on the opposite side of the Siak River to the project site. Given its location no direct impacts are anticipated to this cultural heritage feature and therefore no further assessment has been discussed in Section 7.3.

The social survey also noted the following as being located along the gas pipeline route:

- in Koto Gasib Village, there is a burial site of Princess Kacamayang, daughter of a king during the Gasib kingdom which is located approximately 3 km from the gas pipeline.
- The Putri Puan Elok's tomb, one of the daughters of a noblemen during Gasib Kingdom era. This is located approximately 2 km from the gas pipeline. According to villagers, some notable tombs belong to Raja Panjang and a nobleman are located there. Some of the villagers consider these tombs sacred and often visit them as a form of respect.

These sacred sites can be mapped and analysed in corporation with Riau Museum and Education and Culture division of district and province. However, the exact locations are not included here in order to protect the integrity and privacy of these resources for cultural preservation purposes.

7.3 Impact Assessment

As discussed in Section 7.2 a number of sacred sites have been identified along the gas pipeline route and hold cultural value to the local communities, therefore sensitivity can be considered to be Medium. The construction of the gas pipeline route could potentially cause damage to the scared sites described above. Workers who are not aware of the importance of culture heritage sites may damage them unknowingly and excavation of the gas pipeline trench might encourage looters to find and sell artefacts and in the process damage the scared sites. However, the gas pipeline will be designed to avoid disturbance to any sacred sites identified and therefore no impacts are anticipated resulting in Minor magnitude. The temporary jetty will be sited away from the sacred cemetery in Okura Village and therefore no impacts to this site are excepted. Overall impacts to cultural heritage sites are determined to be of **Minor** impact.

7.4 Chance Find Procedure

'Chance finds' are defined as physical cultural resources encountered unexpectedly during project implementation. 'Physical cultural resources' (PCR) are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Their cultural interest may be at the local, municipal, department or international level. The requirements for the chance finds will follow the recommendations of the ADB Environmental Safeguard (point number 11) as detailed in the ADB Safeguard Policy Statement (ADB, 2009) and the IFC Performance Standard 8 (IFC, 2012). The Chance Find Procedure can be found in ESIA Volume 5 – Technical Appendices.

8. Mitigation, Enhancement Measures and Residual Impacts

8.1 Mitigation and Enhancement Measures

Specific mitigation in addition to those inherently within the design of the Project is required to reduce significant impacts (those assessed as Major or Moderate) on social impacts. However, mitigation has also been proposed in the form of good practice measures that will minimise impacts identified in Section 6 and 7 above. The measures described will be collated in the Environmental and Social Management Plan (ESMP) which forms Volume 4 of this ESIA. The ESMP describes actions to be taken to eliminate or reduce impacts to an acceptable level. It will stipulate monitoring regimes required to track the measures implemented. The mitigation and monitoring measures as set out in the ESMP will be implemented via the Project Environmental and Social Management System (ESMS).

Outlined in the sections below are mitigation and enhancement measures associated with the following:

- Employment and Tourism;
- Physical and Economic Displacement;
- Community Health, Safety and Security; and
- Cultural Heritage.

8.1.1 Employment and Tourism

Prior to construction, the following considerations will be undertaken in the development of the ESMS by MRPR and the contractor.

- MRPR and the EPC Contractors will design employment and recruitment opportunities that supports the local community. These will be developed via consultations with local stakeholders, Kecamatan/Kelurahan (Village) administration office and other local stakeholders, including woman and vulnerable groups.
- MRPR in conjunction with the EPC Contractors will establish a local employment brokerage that will publicise job vacancies in ways and during times that villagers will be able to participate. It is important that the employment process is well managed and that the local community is able to actively participate to the extent feasible.
- MRPR will encourage local employment prioritising the three administrative areas: Industri Tenayan, Bencah Lesung and Tuah Negeri along with adjacent villages. Also include the five villages (Meredan, Tualang Timur, Pinang Sebatang, Kuala Gasib, Melebung) and along the gas pipeline route location and Okura Village which is across the Siak River from the temporary jetty location.
- Local villagers will be informed of job opportunities along with the required qualifications in a timely manner, ensuring the advertising process is culturally and administratively appropriate.
- Local businesses will be informed of contracting opportunities in a timely manner.
- MRPR will ensure that the hiring process is conducted as transparently as possible to help the community to understand strategic staffing decisions for the Project.
- MRPR will develop and monitor an internal standard to guide labour practices and apply this to Supply Chain.
- MRPR will develop and implement a Workers Code of Conduct that addresses issues such as anti-social behaviour and drug and alcohol consumption and respect for women in accordance with the applicable regulation. The EPC Contractors will be required to conform to the Code of Conduct.

- MRPR will define targets the employment of women (at all levels and skills) whenever possible. It will be disclosed that recruitment is also open to women in the local communities. Specific recruitment strategies targeting women will be defined in accordance with the culture, regulation and required qualifications.
- MRPR and the 1EPC contractors will provide opportunities for women and women groups to participate in the work force, and assist them in having good quality work standards so they can train others and are able to work with other companies in the future.
- MRPR will ensure that any grievances raised by tourism providers or other local businesses will be managed in an appropriate and timely manner. Where corrective actions are required; they will be implemented effectively and in a timely manner.

Skills and Training

- MRPR will develop a Workforce Development Strategy – a commitment to maximise employment and skills opportunities for local people.
- MRPR will advise the EPC Contractor to maximize the employment of locals and based on the requisites of qualifications and skills required.
- MRPR and their EPC Contractors will design and develop a capacity building program including mentoring, coaching and apprenticeship opportunities for local villagers to maximise skills development for local people. The employment of local villagers for higher level positions should be maximised to facilitate good community relations.
- MRPR will make efforts to facilitate the growth and development of new entrepreneurs, both individuals and groups originating from affected communities.

Community Development

- MRPR will establish a Community Development Fund to undertake a range of community development initiatives.
- Community Social Responsibility (CSR) programmes will be designed and implemented by also coordinating with District (Kecamatan) and Village (Kelurahan) Offices, including in partnership with local agencies to create business opportunities for the local community. The CSR programmes will be available to the local community, including the workforce that is no longer involved after the construction of the Project. The CSR programmes will be developed in consultation with local community leaders and special interest groups.
- CSR programmes will also seek to improve levels of education and skills for people affected by the Project.

8.1.2 Physical and Economic Displacement

A LRP will be developed and implemented prior to the commencement of Project construction in accordance with ADB Safeguard Policy Statement (2009) and IFC Performance Standards (2012). The LRP will outline those people that will be economically affected by the land acquisition and construction process and how compensating those livelihoods will be maintained or enhanced including compensating for even temporary loss of livelihoods that may occur as a result of the Project.

8.1.3 Community Health, Safety and Security

- To prevent social tensions between the workforce and the local population, MRPR will develop a Worker's Code of Conduct.
- The EPC contractors will undertake pre- employment screening to ensure employees are fit to work.
- MRPR and their EPC Contractors' will provide free and anonymous health surveillance and active screening and treatment of workers including sexually transmitted diseases.

- MRPR and their EPC Contractors' will prevent illness among workers in local communities by undertaking health awareness and education amongst the workforce and in the neighbouring communities.
- MRPR and their EPC Contractors' will prepare and implement a sexually transmitted disease Management Plan/Procedure.
- MRPR and their EPC Contractors' will define and implement measures to prevent vector-borne diseases (such as avoidance of stagnant water, measures to avoid mosquito development).
- MRPR and their EPC Contractors' will provide adequate and sufficient sanitation facilities for both female and male workers.
- Meals provided by MRPR or the EPC contractors shall be in line with international standards of hygiene and health requirements.
- A Worker Policy and Code of Behaviour shall be developed which includes guidance on visits, prescribed actions for conduct violations and a grievance mechanism for complaints.
- The EPC Contractor shall involve external stakeholders (i.e. police or local authorities) in any on-site or off-site security incidents and ensure that appropriate incident response procedures are implemented.
- Access to all construction sites will be controlled with no unauthorised access from local communities permitted.
- MRPR and their EPC Contractors' will train the security guards on human rights issues. The security guards will not be armed. They will coordinate with local government security forces in case of need and will ensure that security and human rights of members of the local communities' are respected.
- A Security Management Plan shall be developed in accordance with national law and the principles of good international industry practice.

8.1.4 Cultural Heritage

- MRPR will develop and implement a Chance Find Procedure for all Project components. This Procedure will be applied by the EPC Contractor's and all Subcontractors during all Project construction works. See ESIA Volume 5 – Technical Appendices.
- The Worker's Code of Conduct will include a section on Cultural Heritage and respect of local beliefs and traditions in the local communities. All workers will be made aware of the Code of Conduct and awareness sessions will be organized for all new staff.
- If any element of cultural heritage is discovered during the construction of the Project, mitigation measures to protect them and to ensure that the local population can access them will be defined and implemented. These measures will be defined in a participatory manner with the affected persons or communities.

8.2 Monitoring

The following monitoring strategies shall be implemented:

- During construction and operation, the number of people being employed by the Project from the three villages adjacent to the power plant site (Industri Tenayan, Bencah Lesung and Tuah Negeri), the five villages along the gas pipeline route (Maredan, Kuala Gasib, Pinang Sebatang, Tualang Timur and Melebung) and Okura Village should be monitored.
- Monitoring of the recruitment process and implementation of employment, health, safety and security mitigation measures shall be implemented.
- Participatory monitoring shall be conducted by the local community members via representatives selected or appointed by the villagers.

- During construction and operation, surveys shall be conducted to determine the number of new businesses and increase or decreases in tourism businesses generated by the development and the level of indirect employment.
- MRPR will establish adequate numbers and training capacity of community liaison officers.
- A MRPR Community Liaison Officer will be responsible for updating and monitoring the implementation of the LRP and Grievance Mechanism defined in the SEP.
- An independent third party review is recommended of the effective implementation of the LRP, one year after civil construction works commence.
- Examination of ADB Safeguards and IFC Performance Standards to be monitored by MRPR through on-site visits on a quarterly basis.
- The grievance mechanism resolution and grievance database shall be monitored with progress reported on a quarterly basis.
- The implementation of the LRP will be audited by a third party one year after construction has commenced to check that the restoration measures as set out in the LRP have been successfully applied.

8.3 Residual Impacts

Residual impacts are those which remain once proposed mitigation measures have been put in place. All impacts identified from construction and operation of the Project are anticipated to be of Negligible significance apart from economic displacement which was determined to be of Moderate significance. In consideration of the mitigation measures described above overall residual impacts from the construction and operation of the Project are anticipated to be **Minor** to **Negligible** significance.

A summary of social impacts, mitigation and monitoring measures and residual impacts during construction and operation is summarised in Table 8.1 below.

Table 8.1 : Summary of Social Impacts during Construction and Operation

Activity	Potential Impact	Sensitivity	Magnitude	Significance	Key Mitigation (see Section 8)	Residual Impact Significance
Employment	Direct – Employment opportunities (Beneficial)	Medium	Moderate	Moderate	N/A	Moderate (Beneficial)
	Direct – Conflict from not employing local resources	Medium	Minor	Minor	See Section 8.1.1	Negligible
	Indirect – Employment opportunities for local businesses (Beneficial)	Medium	Minor	Minor	N/A	Minor (Beneficial)
Displacement	Temporary physical displacement	Medium	Minor	Minor	N/A	Negligible
Economic Displacement and Livelihood	Economic displacement at power plant	Low	Negligible	Negligible	Development and implementation of a LRP (see Section 8.1.2)	Negligible
	Economic displacement at temporary jetty	Low	Negligible	Negligible		Negligible
	Economic displacement at water intake and discharge pipelines	Medium	Minor	Minor		Negligible
	Economic displacement along gas pipeline route	Medium	Moderate	Moderate		Minor
Tourism	Disruption to areas of tourist interest and tourism businesses	Low	Negligible	Negligible	See Section 8.1.1	Negligible
Community Health, Safety and Security	Influx of workers – transmissible diseases	Low	Minor	Negligible	See Section 8.1.3	Negligible
	Safety and Security – Increased river traffic during construction	Medium	Negligible	Negligible		Negligible
Gender	Gender bias towards men	Medium	Minor	Minor	See Section 8.1.1	Negligible
Vulnerable	Economic displacement	Medium	Moderate	Moderate	Development and implementation of a LRP (see Section 8.1.2)	Minor
Education	Disruption to schools along the gas pipeline route	Medium	Negligible	Negligible	N/A	Negligible
	Capacity building / training	Medium	Minor	Minor	See Section 8.1.1	Minor (Beneficial)
Ecosystem Services	Loss of provisioning services associated Siak River	Low	Negligible	Negligible	N/A	Negligible

Activity	Potential Impact	Sensitivity	Magnitude	Significance	Key Mitigation (see Section 8)	Residual Impact Significance
	Removal of plants used for medicinal purposes	Negligible	Negligible	Negligible		Negligible
Cultural Heritage	Loss/damage to cultural heritage sites	Medium	Minor	Minor	Develop and implement a Chance Find Procedure (see ESIA Volume 5 – Technical Appendices). See Section 8.1.4 for further mitigation.	Negligible

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